Designation: D4035 – 22

Standard Performance Specification for Knitted Necktie and Scarf Fabrics[1]

This standard is issued under the fixed designation D4035; 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 performance specification covers knitted necktie and scarf fabrics composed of any textile fiber or mixture of textile fibers.

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

1.3 The following precautionary statement pertains only to the test methods portion, Section 7, of this specification. *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.*

1.4 *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

D2594 Test Method for Stretch Properties of Knitted Fabrics Having Low Power

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

D2905 Practice for Statements on Number of Specimens for Textiles (Withdrawn 2008)[3]

D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

D3787 Test Method for Bursting Strength of Textiles—Constant-Rate-of-Traverse (CRT) Ball Burst Test

D7022 Terminology Relating to Apparel[3]

2.2 *AATCC Methods:*[4]

TM8 Colorfastness to Crocking: Crockmeter Method

TM15 Colorfastness to Perspiration

TM16.3 Colorfastness to Light

TM23 Colorfastness to Burnt Gas Fumes

TM61 Colorfastness to Laundering: Accelerated

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

TM116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method

TM124 Smoothness Appearance of Fabrics After Repeated Home Laundering

TM132 Colorfastness to Drycleaning

TM135 Dimensional Changes of Fabrics

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]

16 CFR 1610—Standard for Flammability of Clothing 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 For all terminology related to D13.61, Apparel, see Terminology D7022.

3.1.1 The following terms are relevant to this standard: necktie, scarf, *in apparel*.

3.2 For definitions of all other textile terms, see Terminology D123.

[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.

Current edition approved Nov. 1, 2022. Published December 2022. Originally approved in 1981. Last previous edition approved in 2014 as D4035 – 14. DOI: 10.1520/D4035-22.

[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.

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

3.3 For terms relating to chemical or colorfastness testing, refer to specific AATCC methods.

4. Specification Requirements

4.1 The properties of fabrics for neckties and scarfs shall conform to the specification requirements in Table 1.

5. Significance and Use

5.1 Upon mutual agreement between the purchaser and the seller, 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 by mutual agreement between the purchaser and the seller.

5.2.1 In such cases, any references to the specification shall specify that: "This fabric meets ASTM Specification D4035 except for the following characteristic(s)."

5.3 Where no prepurchase agreement has been reached between the purchaser and the seller, 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 significance and use of particular properties and test methods are discussed in the appropriate sections of the specified test methods.

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
Bursting strength (load) (ball burst)	50 lbf (222 N)	7.1
Dimensional change:		
Pressing and finishing	2 % max	7.2.1
After five launderings	5 % max	7.2.2
After three dry cleanings	3 % max	7.2.3
Growth	3 % max	7.2.4
Colorfastness:		
Burnt gas fumes, 2 cycles:		7.3.1
Shade change, original fabric	Grade 4[A] min	
Shade change after one laundering or one dry cleaning	Grade 4[A] min	
Sodium Hypochlorite Bleach	Grade 4[A] min	7.3.7
Powdered Non-Chlorine Bleach	Grade 4[A] min	7.3.8
Laundering:[E]		7.3.2
Shade change	Grade 4[A] min	
Staining	Grade 3[B] min	
Drycleaning:		7.3.3
Shade change	Grade 4[A] min	
Crocking:[E]		7.3.4
Dry	Grade 4[C] min	
Wet	Grade 3[C] min	
Perspiration:[E]		7.3.5
Shade change	Grade 4[A] min	
Staining	Grade 3[B] min	
Light (40 AFUs) (xenon-arc)	Grade 4[A] min	7.3.6
Fabric appearance (see 7.4.1.1)	SA 3.5[D] min	7.4
Flammability	Class 1 or Class 2	7.5

[A] AATCC Gray Scale for Color Change.
[B] AATCC Gray Scale for Staining.
[C] AATCC 9-Step Chromatic Transference Scale.
[D] For durable press fabrics only.
[E] See Note 7.

6. Sampling

6.1 Tests shall be performed on the fabric as it will reach the consumer. Any "partially finished" or "post-finished" fabrics should first be processed in accordance with the fabric manufacturer's instructions.

6.2 Unless otherwise agreed upon, as when specified in an applicable material specification, take the number of specimens directed in each of the applicable test methods.

6.2.1 If there has been no prior agreement and the test method does not specify the number of specimens, use the procedures in Practice D2905 to determine the number of specimens, such that the user may expect at the 95 % probability level that the test result is no more than 5 % of the average above or below the lot average (that is, the average that would be obtained by applying this method to the entire lot) when using a reliable estimate of variability of individual observations on similar materials in the user's laboratory under conditions of single-operator precision.

7. Test Methods (see Note 1)

7.1 *Bursting Strength*—Determine the bursting strength, in the standard atmosphere for testing textiles, as directed in Test Method D3786 or Test Method D3787.

NOTE 2—There is no overall correlation between the results obtained with the CRT machine equipped with a bursting attachment and the diaphragm bursting tester. Consequently, these two bursting testers cannot be used interchangeably. In case of controversy, the CRT machine equipped with a bursting attachment method shall prevail.

NOTE 3—The precision of the ball burst method using the CRT machine equipped with a bursting attachment and the precision of the diaphragm bursting tester method are being established by Subcommittee D13.59. The methods are accordingly not recommended for acceptance testing unless preceded by an interlaboratory check test in the laboratory of the purchaser and the laboratory of the seller using randomized replicate specimens of the material to be evaluated.

7.2 *Dimensional Change:*

7.2.1 *Pressing and Finishing During Manufacturing*[6]—Mark specimen(s) as directed in AATCC TM135. Press and finish specimen(s) as agreed upon between the purchaser and the seller with respect to time cycles, temperature, steam, vacuum, and mechanical pressure of the press head. Measure the specimen(s) and calculate the dimensional change as directed in AATCC TM135.

7.2.1.1 If no agreement has been made between the purchaser and the seller, press the specimen(s) using a flat-bed steam press according to Test Method D2724.

7.2.2 *Laundering*—Determine the maximum dimensional change after five launderings as directed in the applicable procedure in AATCC Method 135-1978 or as agreed upon between the buyer and the seller (Note 4 and Note 5).

[6] The development of a standard method has been referred to Subcommittee D13.59 on Fabric Test Methods, General.