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.

Designation: D5378 – 12 (Reapproved 2024)

Standard Performance Specification for Woven and Knitted Shower Curtains for Institutional and Household Use[1]

This standard is issued under the fixed designation D5378; 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 the evaluation of specific performance characteristics of importance in woven and knitted shower curtains for use in institutional and household environments.

1.2 This specification may be used by mutual agreement between purchaser and supplier to establish purchasing specification requirements.

1.3 The requirements in Table 1 apply to the length and width directions for those properties where fabric direction is pertinent.

1.4 This specification is not applicable for coated, laminated or vinyl product.

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

D2905 Practice for Statements on Number of Specimens for Textiles (Withdrawn 2008)[3]

D3786/D3786M Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method

D5034 Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

D6797 Test Method for Bursting Strength of Fabrics Constant-Rate-of-Extension (CRE) Ball Burst Test

D7023 Terminology Relating to Home Furnishings

2.2 *AATCC Standards:*[4]

TM8 Colorfastness to Crocking: Crockmeter Method

TM16.2 Colorfastness to Light: Carbon-Arc

TM16.3 Colorfastness to Light: Xenon-Arc

TM35 Water Resistance: Rain Test

TM61 Colorfastness to Laundering: Accelerated

TM135 Dimensional Changes of Fabrics after Home Laundering

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

TM116 Colorfastness to Crocking: Rotary Vertical Crockmeter Method

TM179 Skew Change in Fabrics After Home Laundering

EP1 Gray Scale for Color Change

EP2 Gray Scale for Staining

EP8 Chromatic Transference Scale, 9-Step

NOTE 1—Reference to documents in this performance specification give only the pertinent part of the designation of ASTM, AATCC or other test methods or standards. The current edition of each test method shall prevail.

3. Terminology

3.1 *Definitions:*

3.1.1 For all terminology related to Home Furnishings see Terminology D7023.

3.1.2 The following terms are relevant to this standard: knitted fabric, shower curtain, woven fabric.

3.1.3 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 D13.63 on Home Furnishings.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at www.astm.org/contact. 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 27709-2215, http://www.aatcc.org.

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TABLE 1 Specification Requirements

NOTE 1—Grade in a, b, and c, is based on a numerical scale of 5 for negligible or no color change or color transfer to 1 for severe color change or color transfer.

Characteristic	Requirement	Section
Breaking Force (Load) (CRT)		7.1.1
Dry	178 N (40 lbf), minimum	
Wet	89 N (20 lbf), minimum	
Bursting Force (Knit Fabrics)	178 N (40 lbf), minimum	7.1.2
Dimensional Change (L× W)	±3.0 % maximum	7.1.3
Skew	4.0 % maximum	7.1.4
Colorfastness:		
Laundering		7.1.5.1
Shade change	Grade 4[A] minimum	
Stain	Grade 3[B,C] minimum	
Crocking		7.1.5.2
Dry	Grade 4[B,C] minimum	
Wet	Grade 4[B,C] minimum	
Light (20 AFU)	Grade 4[A] minimum	7.1.5.3
Water Resistance		7.1.6
Categories based on minimum time for 1-g weight, max		
2 ft (600 mm)	2 min rain	
3 ft (915 mm)	5 min storm	
Appearance Retention	Satisfactory	7.2.1

[A]AATCC Gray Scale for Color Change.
[B]AATCC Gray Scale for Staining.
[C]AATCC 9-Step Chromatic Transference Scale.

4. Significance and Use

4.1 Upon mutual agreement between the purchaser and the supplier, woven and knitted products 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 the purposes of fashion or aesthetics the ultimate consumer of articles made from these fabrics may find acceptable products 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.

4.2.1 In such cases, any references to the specification shall specify that: this product meets Specification D5378 except for the following characteristic(s).

4.3 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 4.2, ultimate consumer demands dictate varying performance parameters for any particular style.

4.4 The significance and uses of particular properties and test methods are discussed in the appropriate sections of the specified test methods.

5. Sampling

5.1 *Acceptance Testing Lot*—Unless there is prior agreement, consider as a lot for acceptance testing all material of a single item as a single shipment.

5.2 *Lot Samples and Laboratory Samples*—For acceptance testing, take lot samples and laboratory samples as directed in each of the applicable test methods.

5.3 *Specimens*—Take the number of specimens directed in each of the applicable test methods. Perform the tests on the product as it reaches the customer. Any "partially finished" or "post-finish" fabrics should be processed in accordance with the fabric manufacturer's instructions.

5.4 If the applicable test method does not specify the number of specimens, use the procedures in Practice D2905 to determine the number of specimens per laboratory sample unit. Use (1) a reliable estimate of the responsibility of individual observations on similar materials in the user's laboratory, (2) a 95 % probability level, and (3) an allowable difference of 5 % of the average between the test results on laboratory sampling units and the average for the laboratory sampling unit. The average of a laboratory sampling unit is the average that would be obtained by applying the test method to all of the potential specimens from the laboratory sampling unit.

6. Specification Requirements

6.1 *Fabrics*—The properties of fabrics for institutional and household shower curtains shall conform to the specification requirements in Table 1.

6.2 *Product*—The properties to be evaluated and the acceptance criteria assigned to these areas shall be set by mutual agreement between purchaser and supplier.

7. Testing for Household and Institutional Use

7.1 *Test Methods:–Fabric*—The physical and colorfastness properties of the fabric in the shower curtains products shall be evaluated as directed as follows:

7.1.1 *Breaking Force*—Determine the breaking force as directed in Test Method D5034, using a constant-rate-of-extension (CRE) tensile testing machine.

NOTE 2—If preferred, a constant-rate-of-traverse (CRT) tensile testing machine is permitted. There may be no overall correlation between the results obtained with the CRT machine and the CRE machine. Consequently, these two breaking force testers cannot be used interchangeably. In case of controversy the CRE method shall prevail.

7.1.2 *Bursting Force—(Knitted Fabrics Only)*—Determine the bursting force of knit fabrics in the standard atmosphere for textile testing, as described in Test Method D3786/D3786M or Test Method D6797 as agreed between the purchaser and supplier.

NOTE 3—There is no overall correlation between the results obtained with the CRE machine equipped with a bursting attachment and the diaphragm bursting tester. Consequently, these testers cannot be used interchangeably. In the case of controversy, the motor-driven diaphragm tester method (Test Method D3786/D3786M) shall prevail.

NOTE 4—The precision of the bursting strength testers has not been established. The methods are accordingly not recommended for acceptance testing unless preceded by an interlaboratory check in the laboratories of the purchaser and the seller, using randomized replicate specimens of the material to be evaluated.

7.1.3 *Dimensional Change*—Determine the maximum dimensional change after five launderings following permanently attached care label instructions, and as directed in AATCC TM135 for household use or AATCC TM96 for institutional use as agreed by the purchaser and the seller.

NOTE 5—AATCC TM135 specifies three laundering procedures of

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