Designation: D 4037 – 95

Standard Performance Specification for Woven, Knitted, or Flocked Bedspread Fabrics[1]

This standard is issued under the fixed designation D 4037; 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 the performance requirements for woven, knitted, or flocked fabrics to be used in the manufacturing of bedspreads.

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

2. Referenced Documents

2.1 *ASTM Standards:*

D 123 Terminology Relating to Textiles[2]

D 1336 Test Method for Distortion of Yarn in Woven Fabrics[2]

D 1424 Test Method for Tear Resistance of Woven Fabrics by Falling-Pendulum (Elmendorf) Apparatus[2]

D 1682 Test Methods for Breaking Load and Elongation of Textile Fabrics[2]

D 2262 Test Method for Tearing Strength of Woven Fabrics by the Tongue (Single Rip) Method (Constant-Rate-of-Traverse Tensile Testing Machine)[2]

D 2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics[2]

D 2905 Practice for Statements on Number of Specimens for Textiles[2]

D 3786 Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics—Diaphragm Bursting Strength Tester Method[3]

D 3787 Test Method for Bursting Strength of Knitted Goods—Constant-Rate-of-Traverse (CRT) Ball Burst Test[3]

2.2 *AATCC Methods:*[4]

8-1977 Colorfastness to Crocking: AATCC Crockmeter Method

16-1977 Colorfastness to Light

23-1975 Colorfastness to Burnt Gas Fumes

61-1975 Colorfastness to Washing, Domestic and Laundering, Commercial: Accelerated

96-1975 Dimensional Changes in Laundering of Woven and Knitted Textiles Except Wool

116-1977 Colorfastness to Crocking: Rotary Vertical Crockmeter Method

124-1978 Appearance of Durable Press Fabrics After Repeated Home Launderings

132-1976 Colorfastness to Drycleaning

135-1978 Dimensional Changes in Automatic Home Laundering of Woven or Knit Fabrics

Evaluation Procedure 1 Gray Scale for Color Change

Evaluation Procedure 2 Gray Scale for Staining

Evaluation Procedure 3 AATCC Chromatic Transference Scale

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 *Definition:*

3.1.1 *bedspread*—a type of bedcovering that is placed over the blankets and sheets for appearance and warmth.

3.2 For definitions of textile terms used in this specification, refer to the individual ASTM and AATCC test methods and to Terminology D 123.

4. Specification Requirements

4.1 The properties of woven, knitted, or flocked bedspread fabrics 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.

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 D 4037 except for the following characteristic(s)."

5.3 Where no prepurchase agreement has been reached

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[2] *Annual Book of ASTM Standards*, Vol 07.01.

[3] *Annual Book of ASTM Standards*, Vol 07.02.

[4] Available from the American Association of Textile Chemists and Colorists, P.O. Box 12215, Research Triangle Park, NC 27709.

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
	Woven	Knit	
Breaking strength (load)	25 lbf (111 N) min	. . .	7.1
Bursting strength	. . .	35 psi (241 kPa) min	7.2
Tear strength	1.5 lbf (6.7 N) min		7.3
Dimensional change:			
Laundering and dry cleaning (each direction):			7.4.1–7.4.2
Tailored type	3.5 % max	5.0 % max	
Throw type	5.0 % max	5.0 % max	
Durable press			7.5–7.5.2.1
Fabric appearance rating	DP 3.5 min	DP 3.5 min	
Retention of hand, character, and appearance	Pass	Pass	7.6
Durability of back coating	Pass	Pass	7.7
Colorfastness to:			
Laundering:			7.8.1
Shade change	Class 4 min[A]	Class 4 min[A]	
Staining	Class 3 min[B]	Class 3 min[B]	
Drycleaning:			7.8.2
Shade change	Class 4 min[A]	Class 4 min[A]	
Burnt gas fumes (two cycles)			
Shade change			7.8.3
Original	Class 4 min[A]	Class 4 min[A]	
After one laundering or one dry cleaning	Class 4 min[A]	Class 4 min[A]	
Crocking:			7.8.4
Dry	Class 4 min[C]	Class 4 min[C]	
Wet	Class 3 min[C]	Class 3 min[C]	
Light (20 AATCC standard fading units)	Step 4 min[A]	Step 4 min[A]	7.8.5

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

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

6. Sampling

6.1 Perform tests on the fabric as it will reach the user.

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 D 2905 to determine the number of specimens, such that the user may expect at the 95 % probability level that the test result is not 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

7.1 *Breaking Strength* (*load*) (woven fabrics only)—Determine the breaking strength (load), as directed in the grab test of Test Methods D 1682 using a constant-rate-of-traverse (CRT) tensile testing machine with the speed of the pulling jaw at 305 ± 13 mm (12 ± 0.5 in.)/min.

NOTE 2—If preferred, the use of a constant-rate-of-extension (CRE) tensile testing machine is permitted. The crosshead speed should be as agreed upon between the purchaser and the seller. However, in case of controversy the CRT method as described in 7.1 shall prevail.

7.2 *Bursting Strength* (knit fabrics only)—Determine the bursting strength of knit fabrics in accordance with Test Method D 3786 using an approved type of diaphragm bursting tester or as directed in D 3787 using an approved constant-rate-of-traverse (CRT) machine equipped with a bursting attachment as agreed upon between the purchaser and the seller.

NOTE 3—Care should be taken to subtract the tare diaphragm pressure from the gross pressure to obtain actual bursting strength of fabric when using the diaphragm bursting tester. Calibrate equipment according to the manufacturer's instruction before using. Since there is no overall correlation between the results obtained with the CRT machine equipped with a bursting attachment and the diaphragm bursting tester, these two bursting testers cannot be used interchangeably. In case of controversy, the diaphragm bursting tester (D 3786) shall prevail.

NOTE 4—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.

7.3 *Tear Strength* (woven fabrics only)—Determine tear strength as directed in Test Method D 1424.

NOTE 5—If preferred, use of Test Method D 2262 is permitted with existing requirements as given in this specification. However, in case of controversy, Method D 1424 shall prevail.

7.4 *Dimensional Change*:

7.4.1 *Laundering*—Determine the dimensional change after 5 launderings as directed in Test II B of AATCC Method 135 unless otherwise agreed upon between the purchaser and the seller.

NOTE 6—Launderable fabrics are expected normally to be dry-cleanable, except where all or part of the fabric is not dry-cleanable and is labeled "Do Not Dry-clean." "Dry-clean Only" goods are not to be laundered.

NOTE 7—Nondurable-press items can be hand pressed as directed in 5.12 of AATCC 96 or flat-bed pressed as directed in 10.1.4 and 10.1.5 of D 2724 after tumble drying to eliminate wrinkles before measuring.

7.4.2 *Drycleaning*—Determine the dimensional change after three dry cleanings as directed in 10.1.1 to 10.1.5 of Test Methods D 2724 (Note 6).

7.5 *Fabric Appearance*:

7.5.1 Determine the appearance of durable-press fabric after five launderings and dryings as directed in Test II B of AATCC Method 124 unless otherwise agreed upon between the purchaser and the seller.

7.5.2 For nondurable-press fabrics, launder as in 7.4.1 and determine fabric smoothness after pressing as directed in 5.12 of AATCC 96 or flat-bed pressing as directed in 10.1.4 and 10.1.4.5 of Test Method D 2724.

7.5.2.1 The fabric smoothness (durable-press rating) of such fabrics shall have decreased no more than 0.5 durable press rating from that of the fabric before it was laundered.

7.6 *Retention of Hand, Character, and Appearance*—Fabric tested as directed in 7.4.1 and 7.4.2 shall not change more in hand, character, or appearance than in the limitation set by prior agreement between the purchaser and the seller.

7.7 *Durability of Back Coating*—A fabric shall exhibit no evidence of cracking or peeling of back coating when subjected to tests in accordance with 7.4.1 and 7.4.2.

7.8 *Colorfastness*:

7.8.1 *Laundering*—Determine the colorfastness to laundering as directed in Test II A of AATCC Method 61 unless otherwise agreed upon between the purchaser and the seller (Note 6).

7.8.1.1 In this test use Multifiber Test Fabric No. 10[5] and evaluate only cotton, polyester, and the textile fiber(s) composition of the fabric.

7.8.2 *Drycleaning*—Determine the colorfastness of drycleaning as directed in AATCC Method 132 (Note 6).

7.8.3 *Burnt Gas Fumes*—Determine the colorfastness to burnt gas fumes after 2 cycles on the original fabric as directed in AATCC Method 23. Repeat the test for 2 cycles on another specimen after 1 laundering or 1 drycleaning.

NOTE 8—Laundering conditions shall be the same as those in 7.4.1 and dry-cleaning conditions shall be the same as those in 7.4.2.

7.8.4 *Crocking*—Determine the colorfastness to wet and dry crocking as directed in AATCC Method 8 for solid shades and AATCC Method 116 for prints or as agreed upon between the purchaser and the seller.

7.8.5 *Light*—Determine colorfastness to light as directed in AATCC Method 16.

NOTE 9—There are distinct differences in spectral distribution between the various types of machines listed in AATCC Method 16, with no overall correlations between them. Consequently, these machines cannot be used interchangeably. In case of controversy, results obtained with the Water-Cooled Xenon-Arc machine listed in Option E shall prevail.

8. Keywords

8.1 bedspread; durability; durable press

[5] Available from Testfabrics, Inc., P. O. Box 118, Middlesex, NJ 08846.