



Designation: D4721 – 89 (Reapproved 2000)

Standard Practice for Evaluation of the Performance of Machine Washable and Drycleanable Bedcoverings and Accessories¹

This standard is issued under the fixed designation D4721; 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 practice may be used to evaluate specific characteristics of importance in the performance of bedcoverings and accessories (machine washable or drycleanable, woven and knit) including bedspreads, comforters, quilts, pillowshams, dust ruffles, and blankets, hereinafter referred to collectively as bedcoverings.

1.2 This practice is not to be used to evaluate bedcoverings that are refurbished by handwashing.

1.3 This practice shall not be construed to be a standard of performance for bedcoverings.

1.4 This practice shall not be used to evaluate sheets.

1.5 This practice may be used by mutual agreement between purchaser and supplier to set purchasing specifications.

1.6 *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

D123 Terminology Relating to Textiles²

D1683 Test Method for Failure in Sewn Seams of Woven Apparel Fabrics²

D1776 Practice for Conditioning and Testing Textiles²

D3136 Terminology Relating to Care Labeling for Apparel, Textile, Home Furnishing, and Leather Products³

D3773 Test Methods for Length of Woven Fabric³

D3940 NO TITLE³

D3993 NO TITLE³

D4037 Performance Specification for Woven, Knitted, or Flocked Bedspread Fabrics

¹ This practice is under the jurisdiction of ASTM Committee D-13 on Textiles and is the direct responsibility of Subcommittee D13.63 on Home Furnishings.

Current edition approved June 30, 1989. Published August 1989. Originally published as D4721 – 87. Last previous edition D4721 – 87. DOI: 10.1520/D4721-89R00.

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

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

2.2 *AATCC Methods:*⁴

AATCC Evaluation Procedure 1

AATCC 88B Appearance of Seams in Durable Press Items After Repeated Home Laundering

AATCC 96 Dimensional Changes in Laundering of Woven and Knitted Fabrics Except Wool

AATCC 135 Dimensional Changes in Automatic Home Laundering of Woven and Knit Fabrics

AATCC 143 Appearance of Apparel and Other Textile End Products After Repeated Home Launderings

AATCC 158 Dimensional Changes on Drycleaning in Perchloroethylene: Machine Method

3. Terminology

3.1 *Definitions:*

3.1.1 *bedcovering, n*—a textile product used on a bed over the sheets for warmth or decoration.

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

3.1.3 *blanket, n*—for bedding, an unquilted fabric covering designed primarily to provide thermal insulation.

3.1.3.1 *Discussion*—Blankets may be made by any textile process from various types of fibers and may or may not have a raised fiber surface.

3.1.4 *comforter, n*—a bedcovering assembly, consisting of an insulating filler secured between two layers of fabric, used primarily to reduce heat loss.

3.1.5 *drop, n*—that part of a bedcovering that hangs perpendicular to the floor.

3.1.5.1 *Discussion*—For bedspreads, drop is measured from the top of the mattress to the bottom of the spread. For dust ruffles, drop is measured from the top of the box spring to the bottom of the ruffle.

3.1.6 *dust ruffle, n*—a fabric which (1) lies flat over the box spring under the mattress on a bed and (2) has a pleated, tucked, or gathered drop to the floor.

3.1.7 *founce, n*—a ruffled drop on a bedcovering.

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

3.1.8 *quilt, n*—a bedcovering assembly used primarily for warmth, consisting of an insulating filler secured between two layers of fabric, but generally lighter in weight and thinner than a comforter.

3.1.9 *sham, n*—a fabric covering for a bed pillow, usually of decorative fabric that matches the bedcovering.

3.1.10 For definitions of other textile terms used in this practice, refer to Terminology **D123** and Terminology **D3136**.

4. Significance and Use

4.1 This practice may be used to evaluate pertinent performance characteristics of machine washable or drycleanable bedcoverings.

4.2 The characteristics to be evaluated and the acceptance criteria assigned to these areas shall be set by mutual agreement between purchaser and supplier.

4.3 The significance and use of specific properties are discussed in the appropriate test methods and performance standards.

5. Sampling, Selection, and Number of Specimens

5.1 *Division into Lots*—For acceptance testing, divide the product into lots as agreed upon by the purchaser and the supplier.

5.2 *Lot Sample*—As a lot sample for acceptance testing, take at random the number of shipping cartons directed in an applicable material specification or other agreement between the purchaser and the supplier. Consider shipping cartons of bedcoverings or accessories to be the primary sampling units.

NOTE 1—A realistic specification or other agreement between the purchaser and the supplier requires taking into account the variability between shipping cartons, between items within a carton, and between specimens within an item so as to provide a sampling plan which has a meaningful producer's risk, consumer's risk, acceptable quality level, and limiting quality level.

5.3 *Laboratory Sample*—As a laboratory sample for acceptance testing, take two items from each shipping carton in the lot sample.

5.4 *Test Specimens*—Take test specimens from each item in the laboratory sample as directed in individual test methods. Perform each test on the product as it will reach the customer.

CHARACTERISTICS AND TEST METHODS

6. Characteristics

6.1 The areas to be evaluated and the acceptance criteria assigned to these areas shall be set by mutual agreement between purchaser and supplier.

7. Fabric Performance Characteristics

7.1 The fabric in the item shall be evaluated as directed in Performance Specification **D3993** for blanket fabrics, and Performance Specification **D4037** for bedspread fabrics.

8. Bedcoverings Performance Characteristics Prior to Refurbishing

8.1 Evaluate joining seam performance (strength) as directed in Test Method **D1683** for woven fabrics or Test Method

D3940 for knit fabrics. Evaluate appearance of all seams as directed in AATCC Method 88B.

8.2 Mark and record measurements as directed in Section 10 of this practice to establish size consistency, side to side, and part to part.

8.3 Examine bedcoverings for shade difference from part to part, as directed in **AATCC Evaluation Procedure 1**.

8.4 Examine bedcoverings for all obvious defects.

9. Refurbished Bedcoverings

9.1 Refurbish bedcoverings following the instructions on the care label. Prepare and measure the bedcovering as directed in Section 11. Record measurements.

9.2 For institutional use, commercially launder as directed in AATCC Method 96, using washing and drying procedures as agreed upon between the purchaser and supplier.

9.2.1 Repeat the process two more times or as agreed upon by purchaser and supplier.

9.3 For home use, wash items in an automatic home washing machine, as directed in AATCC Method 135, beginning with Section 5, except use any domestically available laundry detergent as agreed upon by purchaser and supplier. Use laundering temperatures as directed in AATCC Method 135, Table 1, or as agreed between the purchaser and the supplier, or as specified on the care label.

9.3.1 When chlorine bleach is to be used, introduce a chlorine-type household bleach containing 5.25 % sodium hypochlorite (5 % available chlorine) into the washer in the manner directed by the bleach manufacturer's instructions. When testing with non-chlorine is indicated, introduce it into the washer in the amount and manner directed by the bleach manufacturer.

NOTE 2—Many bedcovering products, such as comforters, bedspreads, and blankets, either will not fit into a domestic type washing machine or dryer, or will be so crowded that they will be damaged by the agitator, or will not permit air flow in the dryer. Such large items should be tested in a large front loading machine, such as those available in many laundromats. The care instructions should recommend such a machine, rather than only "machine wash", which implies domestic-type equipment.

9.3.2 Dry items following permanently attached care label or as directed in AATCC Method 135.

9.3.3 Evaluate the items for durable press where applicable as in AATCC Method 143.

9.3.4 For ironing where applicable, follow the procedure in section 6.3.1 of AATCC Method 135.

9.3.5 Repeat laundering, drying, and ironing four times, or as agreed upon by the purchaser and supplier.

9.4 If the item is to be drycleaned, refurbish as directed in AATCC Method 158.

9.4.1 Repeat two or more times as agreed upon by purchaser and supplier.

10. Bedcoverings Performance Characteristics After Refurbishing

10.1 Remeasure the items as directed in Section 11 and record measurements. Calculate percent dimensional change using the following equation:

$$\text{Percent Change} = \frac{F - O}{O} \times 100$$