



HOME FASHION
PRODUCTS ASSOCIATION

AMERICAN NATIONAL STANDARD
FOR
RESIDENTIAL TERRY BATH TOWELS

SPONSOR
HOME FASHION PRODUCTS ASSOCIATION

APPROVED BY HFGA SEPTEMBER 2011

AMERICAN NATIONAL STANDARD FOR
RESIDENTIAL TOWELS

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FOREWORD (This Foreword is not a part of HFPA 2)

This Voluntary Standard is a result of the collective efforts of members of the Home Fashion Products Association, Inc. who manufacture and market this product. Their mission over a two year period was to identify the important product attributes and set reasonable levels of quality for Residential Towels. The group collected and reviewed test protocols used throughout the industry during numerous meetings and web conferences, and compiled this comprehensive document.

The resultant standard is meant to assure that all representations and claims made on the product, on the packaging, and in advertising are truthful, and in accordance with commonly accepted industry standards and the law. Performance tests and, where necessary, material and dimensional requirements have been established to ensure safety and stability to which the public is entitled. HFPA recognizes that errors will be found, items will become obsolete, and new products, methods and materials will be developed. With this in mind, the Association plans to update, correct and revise these Standards on a regular basis.

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1. SCOPE

This Standard establishes requirements for residential terry towels including performance, yarn types, dimensional tolerances, chemical characteristics and labeling. Tests described in this Standard are performed under laboratory conditions by internationally recognized testing labs.

2. DEFINITIONS

2.1 **Dobby** A woven decorative area that interrupts the pile and/or finishes the top, bottom, or both ends of a towel.

2.2 **Egyptian Cotton** All cotton grown in Egypt is "Egyptian" cotton. However, the qualities of cotton that come from Egypt vary as do cottons from any other country. Egypt has designated certain regions or "lots" based on the fundamental fiber quality (strength, length of staple and intrinsic fineness) of the cotton. Egypt's cotton grades generally fit into 2 categories: extra long staple and long staple. The extra long staple cottons come from the following Giza lots: Giza 87, Giza 45, Giza 88, Giza 86, Giza 76, Giza 70 and Giza 77. The long staple cottons come from the following Giza lots: Giza 86, Giza 89, Giza 85, Giza 83 and Giza 80. Extra Long Staple (ELS) Egyptian cotton compares to U.S. Pima cotton and is the premium quality that is commonly referred to generically as "Egyptian cotton". Use of ELS Egyptian cotton results in fabric with less linting, more durability, more luster and a softer feel.

2.3 **Fabric Weight** Weight of towel fabric expressed in pounds per dozen, grams per piece, or grams per square meter.

2.4 **Fiber Content** The type and amount of fiber(s) used in making a textile product. See the Textile Fiber Products Identification Act for additional information.

2.5 **Loop** Loose pile warp that forms a loop and is held in place by the ground warp and weft.

2.6 **Pile** A surface of yarns that stand upright from a weave; can be cut or looped; "pile height" is used to describe the length of the loops that stand up from the weave.

2.7 **Pima Cotton** Pima cotton is a generic name for extra-long staple (ELS) cotton grown in the U.S., Australia, Peru and in very limited production in a few other locations around the world. In the U.S., cotton is considered to be ELS or Pima if it is 1 3/8 inches or longer.

2.8 **Supima Cotton** The name "Supima®" is a licensed trademark owned by Supima and its members. It is used to promote textile and apparel products made

of 100% American Pima cotton, but is strictly controlled by the grower organization. The name "Supima" is an abbreviation for Superior Pima.

2.9 **Terry** Loops which form the pile of a fabric.

2.10 **Terry to Base Ratio** Length of pile loop yarn in one linear inch of ground yarn.

2.11 **Warp** Refers to yarns running in the length direction during the weaving process.

2.12 **Weft** Refers to yarns running in the width during the weaving process. Also known as fill.

2.13 For more detailed information on terms and products referred to in this standard, users should consult ASTM D123-07 Terminology Relating to Textiles.

3. GENERAL REQUIREMENTS

3.1 **Labeling and Packaging** shall comply with all applicable regulatory standards including those of the Federal Trade Commission, and the Textile Fiber Products Identification Act (Identification Act 15 U.S.C. § 70).

3.2 Due to possible toxicity, Azo Dyes shall not be permitted to be used in the manufacturing of towels to this standard.

3.3 Dimensional tolerance for length and width claim size before laundering shall be $\pm 4\%$ when measured in accordance with ASTM D3990- Fabric Defects and Workmanship.

3.4 **Compliance with this Standard** To comply with this standard, products shall meet all of the requirements in Sections 3 and 4. Other product claims when selected from Section 5, shall meet the respective requirements.

3.5 Reference Standards

- 3.5.1 American Association of Textile Chemists and Colorists Test Methods
 - AATCC 8-07 Crocking; AATCC Crockmeter Method
 - AATCC 16-04 Colorfastness to Light
 - AATCC 20A-07 Fiber Analysis: Quantitative
 - AATCC 61-2A-07 Laundering: Accelerated
 - AATCC 81-06 pH from Textiles
 - AATCC 89-08 Mercerization in Cotton
 - AATCC 112-08 Formaldehyde Release from Fabrics
 - AATCC 116-05 Crocking: Rotary Vertical Crockmeter Method
 - AATCC 124-06 Appearance of Fabrics after Repeated Home Laundering
 - AATCC 135-04 Dimensional Changes of Fabrics after Home Laundering
 - AATCC 172-07 Colorfastness to Non-chlorine Bleach

3.5.2 ASTM Standards

ASTM D123-07 Standard Terminology Relating to Textiles

ASTM D1059-01 Yarn Size

ASTM D1424-07 Test Method for Tear Resistance of Woven Fabrics by Falling Pendulum

ASTM D1683-07 Standard Test Method for Failure in Sewn Seams of Woven Apparel Fabrics

ASTM D3775-08 Standard Test Method for Fabric Count of Woven Fabric

ASTM D3776-09 Standard Test Method for Fabric Weight

ASTM D3990-08 Fabric Defects and Workmanship

ASTM D4772-97 Standard Test Method for Absorbancy

ASTM D5034-08 Test Method for Breaking Strength and Elongation of Textile Fabrics

4. PERFORMANCE REQUIREMENTS

4.1 Fabric Qualities / Construction

4.1.1 **Fiber Content** Test in accordance with AATCC 20.

| Requirements | |
|-----------------|----------------------------------|
| Multiple Fibers | ±3% Tolerance As Required By FTC |
| Single Fiber | 0% Tolerance |

4.1.2 **Fabric Defects** Test in accordance with CPSD-HL-01057-MTHD / Visual or ASTM D3990.

| Requirements |
|---|
| No Major Defects, No Sharp Edges, Even Construction, Even Print/Design If Applicable. |

4.1.3 **Fabric Weight** Test in accordance with ASTM D 3776.

| Requirements |
|---|
| Fabric Weight Tolerance within +/- 5% of stated |

4.1.4 **Workmanship** Test in accordance with ASTM D 3990.

| Requirements |
|---------------------|
| No original defects |

4.2 Traits To Ensure Consistency Of Manufacturing

4.2.1 **Yarn Size** Test in accordance with MTC-104 ASTM D 1059.

| Requirements |
|-----------------------------------|
| Tolerance within +/- 5% of stated |

4.2.2 **Terry to Base Ratio** Calculated based on the terry portion of piled towels.

| Requirements |
|-----------------------------------|
| Tolerance within +/- 5% of stated |

4.2.3 **Loops per Square Inch** Calculated based on the terry portion of piled towels.

| Requirements |
|-----------------------------------|
| Tolerance within +/- 5% of stated |

4.2.4 **Fabric Thread Count** Test in accordance with ASTM D3775-08

| Requirements |
|-----------------------------------|
| Tolerance within +/- 5% of stated |

4.3 **Dimensional Stability of Finished Towels** Evaluates changes in the length and width of a fabric specimen subjected to specified conditions listed in the sew-in label. Test in accordance with AATCC 135.

| Requirements |
|----------------------------------|
| ±5.0% Maximum tolerance (width) |
| ±8.0% Maximum tolerance (length) |
| ±3.5% Differential shrinkage |

4.4 Physical Performance

4.4.1 **Absorbency** Test in accordance with ASTM D4772 (5 Launderings)

| Requirements (Minimum) |
|------------------------|
| 50% |

4.4.2 Fabric Strength Tests

4.4.2.1 **Tensile Strength** The amount of weight required to pull apart a fabric. Test in accordance with ASTM 5034.

| Requirements (Lbs. Minimum) |
|-----------------------------|
| Both Warp and Weft: 30 |

4.4.2.2 **Tear Strength** The amount of weight required to perpetuate a pretorn fabric. Test in accordance with ASTM 1424.

| Requirements (Lbs. Minimum) |
|-----------------------------|
| Both Warp and Fill: 1.5 |

4.5 Colorfastness

4.5.1 **Crock Test** A measure of how much color will rub off a fabric onto another fabric or surface. Test in accordance with AATCC 8 for solid fabrics and AATCC 116 for prints.

| | Requirements (Minimum Class) | |
|--------------|------------------------------|-------------|
| | Light and Medium Shades | Dark Shades |
| Dry Crocking | 4.0 | 3.0 |
| Wet Crocking | 3.0 | 2.0 |

4.5.2 **Light Fastness** Simulates the amount of color loss seen when a fabric is exposed to light. Test in accordance with AATCC 16 option 3.

| Requirements (Minimum Class) | |
|------------------------------|-----|
| 20 Hours | 3.0 |

4.6 **Laundrying Tests** (without optical brightener)

4.6.1 **Shade Change** Test in accordance with AATCC 61-2A.

| Requirements (Minimum Class) | |
|-------------------------------------|-----|
| Shade Change | 4.0 |
| Staining | 3.0 |
| Bleeding (self staining) | 3.0 |

4.6.2 **Colorfastness to Non-Chlorine Bleach** Test in accordance with AATCC 172.

| Requirements (Minimum Class) |
|-------------------------------------|
| 4.0 |

4.7 **Formaldehyde** Test in accordance with AATCC 112

| Requirements (maximum) |
|-------------------------------|
| 50 ppm |

4.8 **pH** Test per AATCC 81

| Requirements |
|---------------------|
| 5.5 to 8.5 |

5. PRODUCT CLAIMS

5.2 Fiber

5.2.1 Egyptian

| Requirements |
|--------------|
|--------------|

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|--|
| Shall be labeled in accordance with with the Textile Fiber Products Identification Act 15 U.S.C. § 70 and shall be 100% Egyptian cotton in the loops, or stated as the blend with percentages. |
|--|

5.2.2 Pima

| Requirements |
|--------------|
|--------------|

| |
|--|
| Shall be labeled in accordance with with the Textile Products Identification Act 15 U.S.C. § 70 and shall be 100% Pima cotton in the loops, or stated as the blend with percentages. |
|--|

5.2.3 Supima®

| Requirements |
|--------------|
|--------------|

| |
|---|
| Shall be labeled in accordance with with the Textile Fiber Products Identification Act 15 U.S.C. § 70 and produced under license Supima. The licensing requirement stipulates that the loop shall be made of 100% Supima cotton to be branded Supima. |
|---|

5.2.4 Organic

| Requirements |
|--------------|
|--------------|

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|--|
| The manufacturer shall provide affidavits or certification showing compliance with American Organic Standards or Global Organic Textile Standards. |
|--|

5.2.5 Mercerized Test per AATCC 89

| Requirements |
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|--------------|

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|---------------------------------|
| Shall comply with AATCC 89-2008 |
|---------------------------------|

APPENDIX

Pilling is an undesirable performance trait of fabrics which the producers should attempt to minimize. However, due to the subjectivity of quantifying pilling on looped towel fabrics, there is presently no approved test method. Most manufacturers evaluate their towels using one of two methods intended for flat surfaced fabrics. Those tests are AATCC 135-04 Dimensional Changes of Fabrics after Home Laundering Test, and ASTM D 3512-02 Pilling Resistance, Random Tumble Pilling Tester with a maximum result of 3 (moderate pilling).

Linting is another undesirable attribute, which like pilling, is minimized on towels by the manufacturers, but presently lacks an official consistent test method. Informal evaluations are conducted per various retailer's requirements.

Resistance to Chlorine Bleach is not addressed in this standard, because it is not recommended to be used on residential towels, unless specified on the care label as being bleach safe.