



HOME FASHION
PRODUCTS ASSOCIATION

VOLUNTARY STANDARD

FOR

RESIDENTIAL BED SHEETS AND PILLOWCASES

HFPA 1

SPONSOR:

HOME FASHION PRODUCTS ASSOCIATION

Approved by HFPA March 2010

VOLUNTARY STANDARD FOR
RESIDENTIAL BED SHEETS AND PILLOWCASES

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FOREWORD (This Foreword is not a part of HFPA 1)

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 Bedsheets. Through numerous meetings and web conferences, the group collected and reviewed test protocols used throughout the industry, and compiled this one, 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. HFPA intends to attain accreditation as a standards developer through the American National Standards Institute, and promulgate HFPA 1 as an American National Standard in the future.

Member companies and their representatives, along with HFPA staff, who participated in the development of HFPA 1 are listed below:

Rick DiPaola, CHF Industries
Kim Snigger, CHF Industries
Jack Mahon, Croscill Home Fashions
David North, Ex-Cell Home Fashions, Inc.
Bob Flynn, S. Lichtenberg & Co.
Kathy Roger, Revman International
Jim Symmes, Revman International
Mike Hassell, Springs Global, USA
Tina Cadet, HFPA
Katie Goshgarian, HFPA
Mike Tierney, HFPA

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1. SCOPE

This Standard establishes requirements for woven residential bed sheets including fabric performance, thread count measurement, environmental characteristics of product and packaging, finished product dimensional requirements, fabric types, and labeling. Tests described in this Standard are performed under laboratory conditions by internationally recognized testing labs.

2. DEFINITIONS

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

2.2 **Thread Count** Expressed as the sum of the ends and picks per inch, counts each thread as a single unit regardless of the number of plies of the yarn.

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

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

2.5 **Woven Fabrics** Produced by interlacing two sets of threads (warp & weft) at right angles to each other. There are four basic weave structures: Plain, Twill, Sateen, Basket. Refer to ASTM D123-07.

3. GENERAL REQUIREMENTS

3.1 **Packaging and Labeling** shall comply with all applicable regulatory standards including those of the Federal Trade Commission, Environmental Protection Agency, Coalition of Northeastern Governors, Toxic Packaging Clearing House, Consumer Product Safety Commission, and United States Customs. Residential Bed Sheets shall be produced and labeled in compliance with the Textile Products Identification Act 15 U.S.C. § 70.

3.2 **Compliance with this Standard.** To comply with this standard, products shall meet all of the requirements in Sections 3.1, 4, 6. Other product claims when selected from Section 5, shall meet the respective requirements.

3.3 Reference Standards

- 3.3.1 American Association of Textile Chemists and Colorists Test Methods
 - AATCC 8-07 Crocking; AATCC Crockmeter Method
 - AATCC 20A-07 Fiber Analysis: Quantitative
 - AATCC 61-2A-2007 Laundering: Accelerated
 - AATCC 89-2008 Mercerization in Cotton

AATCC 116-2005 Crocking: Rotary Vertical Crockmeter Method
 AATCC 124 -2006 Appearance of Fabrics after Repeated Home Laundering
 AATCC 135-2004 Dimensional Changes of Fabrics after Home Laundering
 AATCC 172-2007 Colorfastness to Non-chlorine Bleach
 AATCC 188-2003 Colorfastness to Chlorine Bleach

3.3.2 ASTM Standards

ASTM D123-07 Standard Terminology Relating to Textiles
 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 D4970-07 Standard Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics
 ASTM D5034-08 Test Method for Breaking Strength and Elongation of Textile Fabrics

4. PERFORMANCE REQUIREMENTS FOR WOVEN FABRICS

4.1 **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

4.2 **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	3.5

4.3 Laundering Tests

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

Requirements (Minimum Class)	
Shade Change	4.0
Staining	3.0
Bleeding	3.0

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

Requirements (Minimum Class)	
4.0	

4.3.3 **Dimensional Stability** 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	
Polyester Rich Blends	+/-3.0% Maximum tolerance
Cotton Rich / 100% Cotton	+/-5.0% Maximum tolerance

4.3.4 **Durable Press** A measure of a fabrics susceptibility to wrinkling after multiple washes. Test in accordance with AATCC 124.

Requirements (Minimum Class)	
Blends and Wrinkle -Free	3.0
100% Cotton	2.0

4.4 Fabric Strength Tests

4.4.1 **Seam Slippage** A measure of how readily yarns slip past one another resulting in the opening of fabric along a seam. Test in accordance with ASTM 1683.

Requirements	
¼ inch at 15 lbf.	

4.4.2 **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	

4.4.3 **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	

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4.4.4 **Pilling Resistance (Martindale Method)** Simulates how a fabric will perform when exposed to repetitive abrasion that causes fibers breaking off and form pill balls. Test in accordance with ASTM 4970.

Requirements (Minimum Class/Cycles)	
3.0 / 100	

4.5 **Thread Count** The number of yarns in a square inch. Test in accordance with ASTM 3775-03.

Requirements	
Up to and including 200 Count	Tolerance \pm 5%
Over 200 Count	Tolerance \pm 3% Not to exceed 20 picks

4.6 **Fiber Content** Test in accordance with AATCC 20A.

Requirements	
Blends	Tolerance \pm 3%
Single Fiber	Tolerance \pm 0%

5. OTHER PRODUCT CLAIMS (SEE SECTION 3.2)

5.1 **Weave** Test per ASTM D 3775.

Requirements	
Plain (including derivatives of this thread type)	Verified by visual assessment.
Sateen (including derivatives of this thread type)	Verified by visual assessment.
Twill (including derivatives of this thread type)	Verified by visual assessment.

5.2 **Fiber**

5.2.1 **Egyptian**

Requirements
Shall be labeled in accordance with with the Textile Products Identification Act 15 U.S.C. § 70 and produced under license of the Cotton Egypt Association. . May be blended with up to 49% of a non-cotton material when labeled per FTC requirements.

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5.2.2 Supima

Requirements
Shall be labeled in accordance with with the Textile Products Identification Act 15 U.S.C. § 70 and produced under license Supima. The licensing requirement stipulates that an article or garment be made of 100% Supima cotton.

5.2.3 Organic

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

5.3 Mercerized Test per AATCC 89-2008

Requirements
Shall comply with AATCC 89-2008

5.4 Durable Press Test per AATCC 124. Also known as Easy Care, Wrinkle Proof, No-Iron, etc.

Requirements	
100% Cotton	Class 2.0 Minimum
Blends	Class 3.0 Minimum

5.5 Colorfastness to Chlorine Bleach Test in accordance with AATCC 188. Requires compliance with Trade Regulation Title 16 CFR Part 423.

Requirements (Minimum Class)
4.0

6. DIMENSIONAL REQUIREMENTS FOR FINISHED PRODUCTS

6.1 Sizing Standards For Mattresses

Tolerance of minus 1 inch plus 2 inches Measured from seam to seam at the centerlines of the width and length			
	Mattress Dimension	Flat Sheet	Fitted Sheet
Twin	38 x 74½	66 x 96	39 x 76
Twin Extra Long	38 x 79½	66 x 102	39 x 80
Full	53 x 74½	81x96	54x76
Queen	60 x 79½	90x102	60x80
King	76 x 79½	108x102	78x80
California King	72 x 83½	108x102	72x84

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Fitted Sheet Pocket Depth (Minimum Inches)			
HFWA Class A	HFWA Class B	HFWA Class C	HFWA Class D
9	12	15	18

6.2 Sizing Standards For Pillowcases

Dimensioned in inches. Tolerance of minus 1/2 plus 1 inch	
Standard	20 x 30
Standard/Queen	20 x 32
Queen	20 x 34
European Enclosure Queen (See appendix information)	21 x 30, plus 6 inch fold back flap
King	20 x 40
European Enclosure King	21 x 36, plus 6 inch fold back flap

APPENDIX A

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

KNIT FABRICS

Requirements for knit fabrics differ from woven fabrics are not included in this initial edition of the standard, but may be addressed in the future.

COMBED COTTON YARN

Although not verified by testing in this standard, cotton fabrics are commonly labelled as "combed". Combing is a process that separates the long, choice desirable fibers from the shorter stock and arranges them in parallel order. This results in a yarn with improved uniformity and strength, allowing spinning of finer counts, and producing a smoother, more lustrous and cleaner yarn.

CONFORMANCE CRITERIA

Certification that products offered meet the requirements of this Standard and conform to individual manufacturer's drawings, specifications, standards and quality assurance practices is available and in some circumstances are required. Buyer requirements determine the need for proof of conformance such as first article inspection, test laboratory reports, or listings. Purchasers requiring assertions of conformance may utilize statements of conformance by individual manufacturers or test reports acceptable to the buyer.

PRESERVATION, PACKAGING AND PACKING

Unless other arrangements between buyer and seller are made, preservation, packaging and packing shall be sufficient to protect containers and their contents under normal shipping and handling conditions from the source of supply to the destination point.

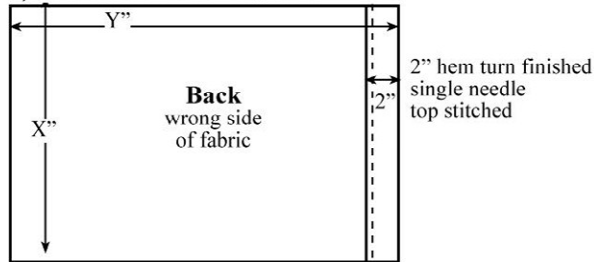
MARKING

Unless other arrangements between buyer and seller are made, marking shall be in accordance with the individual manufacturer's standard practice.

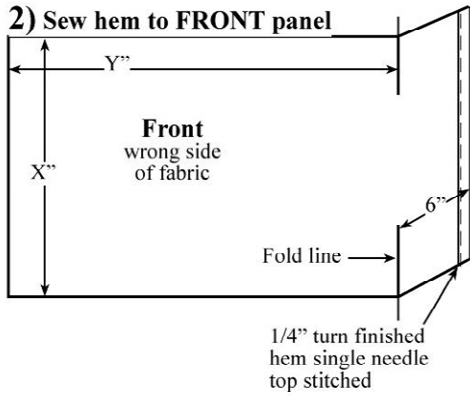
EUROPEAN ENCLOSURE PILLOWCASE DIMENSIONS

Finish Dimensions
X" x Y"
See spec sheets
for actual dimensions

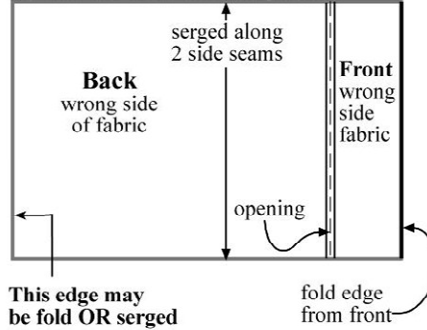
1) Sew hem to BACK panel



2) Sew hem to FRONT panel



3) Sew front to BACK panel



4) Flip right side out

