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Smoothness of Seams in Fabrics after Repeated Home Laundering

Developed in 1962 by AATCC Committee RA61; reaffirmed 1969, 1973; editorially revised 1974, 1983, 1985, 1986, 1991, 1997, 2004, 2005, 2008, 2012; editorially revised and reaffirmed 1978, 1984, 2001; revised 1970, 1975, 1981, 1989 (with title change), 1992, 1996, 2003, 2006, 2010, 2011, 2014. Technically equivalent to ISO 7770.

1. Purpose and Scope

1.1 This test method is designed to evaluate the smoothness appearance of seams in fabrics after repeated home laundering.

1.2 Any washable fabric may be evaluated for seam smoothness using this method.

1.3 Fabrics of any construction, such as woven, knit and nonwoven, may be evaluated according to this method.

1.4 Techniques for seaming are not outlined, since the purpose is to evaluate fabrics as they will be supplied from manufacturing or as ready for use. Furthermore, seaming techniques would be controlled by fabric properties.

2. Principle

2.1 Seamed fabric specimens are subjected to standard home laundering practices. A choice is provided of hand or machine washing, alternative machine wash cycles and temperatures and alternative drying procedures. Evaluation is performed using a standard lighting and viewing area by rating the appearance of specimens in comparison with appropriate reference standards.

3. Terminology

3.1 **ballast**, n.—*in procedures for processing or testing of textiles*, material that is used to bring the total weight or volume of the textiles to an amount specified in the procedure.

3.2 **durable press**, adj.—having the ability to retain substantially the initial shape, flat seams, pressed-in creases and unwrinkled appearance during use and after laundering or drycleaning.

3.3 **laundering**, n.—*of textile materials*, a process intended to remove soils and/or stains by treatment (washing) with an aqueous detergent solution and normally including rinsing, extracting and drying.

3.4 **laundering creases**, n.—sharp

fold or lines running in any direction in a washed or dried specimen.

NOTE: Laundering creases are an unintended result of restricted movement of specimens in the washer or the dryer.

3.5 **seam smoothness**, n.—*in fabrics*, the visual impression of planarity of a seamed specimen quantified by comparison with a set of reference standards.

4. Safety Precautions

NOTE: These safety precautions are for information purposes only. The precautions are ancillary to the testing procedures and are not intended to be all inclusive. It is the user's responsibility to use safe and proper techniques in handling materials in this test method. Manufacturers MUST be consulted for specific details such as material safety data sheets and other manufacturer's recommendations. All OSHA standards and rules must also be consulted and followed.

4.1 Good laboratory practices should be followed. Wear safety glasses in all laboratory areas.

4.2 The 1993 AATCC Standard Reference Detergent and the 2003 AATCC Standard Reference Liquid Detergent may cause irritation. Care should be taken to prevent exposure to skin and eyes.

4.3 All chemicals should be handled with care.

4.4 Manufacturer's safety recommendations should be followed when operating laboratory testing equipment.

5. Uses and Limitations

5.1 This test method is designed to be used only for evaluating the appearance of washable seamed fabrics after repeated home laundering.

5.2 The test procedure is designed to reflect the capabilities of home laundry equipment which is currently used by consumers. In general, it is preferable to conduct the test under relatively severe laundering conditions.

5.3 Prints and patterns may mask the mussiness present in seamed fabrics. The rating process is, however, based on the visual appearance of specimens including such effects.

5.4 The small specimen sizes used for fabric tests occasionally will cause wrinkles or creases (dryer creases) to develop which are not considered to be characteristic of fabric performance in use. Precautions are given in the text of the method to reduce the occurrence of dryer

creases.

5.5 The interlaboratory reproducibility of the results of this test method depends upon mutual agreement by users of the method on the washing and drying conditions as outlined in 8.1.

6. Apparatus and Materials (see 12.1)

6.1 Automatic washing machine (see 12.2).

6.2 Automatic tumble dryer (see 12.2).

6.3 Drip dry and line dry facilities.

6.4 A 9.5 L (10.0 qt) pail.

6.5 1993 AATCC Standard Reference Detergent or 2003 AATCC Standard Reference Liquid Detergent (see 12.3 and 12.8).

6.6 Ballast of $92 \times 92 \pm 3$ cm ($36 \times 36 \pm 1$ in.) hemmed pieces of bleached cotton sheeting (Wash load ballast type 1) or 50/50 polyester/cotton plain weave (Wash load ballast type 3) (see Table I).

6.7 Lighting and evaluation area in an otherwise darkened room using the overhead lighting arrangement shown in Fig. 1 (see 12.4). It has been the experience of many observers that light reflected from the side walls near the viewing board can interfere with the rating results. It is recommended that the side walls be painted matte black (85° gloss less than 5 units) or that blackout curtains be mounted on both sides of the viewing board to eliminate the reflective interference.

6.8 Standard AATCC Photographic Seam Smoothness Replicas prepared for rating single- and double-needle seams (see Fig. 2 and 12.3). The reproduction shown in Fig. 2 should not be used for rating.

6.9 Steam or dry iron with appropriate fabric temperature settings.

6.10 Detergent (for hand wash).

6.11 Scale with at least 5 kg or 10 lb capacity.

7. Test Specimens

7.1 Three representative 38×38 cm (15×15 in.) fabric specimens cut parallel to the fabric length and width are prepared. Where possible, each specimen should contain different groups of lengthwise and widthwise yarns. The specimens should be marked to indicate the lengthwise direction. If fraying is expected in laundering, see 12.5.

7.1.1 The seam specimens are prepared as in 7.1 so that existing seams run through the middle of each specimen after it is cut in the fabric length direction. If the fabric is wrinkled, it may be smoothed by appropriate ironing prior to