



# Standard Test Method for Appearance and Integrity of Highloft Batting After Refurbishing<sup>1</sup>

This standard is issued under the fixed designation D 4770; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers procedures for determining the tactile appearance and integrity of a highloft nonwoven batting after machine washing or drycleaning when tested in a finished product or a panel assembly simulating the construction of the finished product.

1.2 This test method is not intended for use on wool/wool blend and cotton/cotton blend batting and needle-punched structures.

1.3 This test method provides the values in both SI units and inch-pound units. “Inch-pound units” is the technically correct name for the customary units used in the United States. “SI units” is the technically correct name for the system of metric units known as the International System of Units. The values stated in either system of units shall be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system must be used independently of the other, without combining in any way.

1.4 *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:

D 123 Terminology Relating to Textiles<sup>2</sup>

D 2724 Test Methods for Bonded, Fused, and Laminated Apparel Fabrics<sup>2</sup>

## 3. Terminology

3.1 *Definitions*—For definitions of terms not cited here, refer to Terminology D 123.

3.1.1 *batting, n*—a textile filling material consisting of a continuous web of fibers formed by carding, garnetting, air laying, or other means.

3.1.2 *batting integrity, n*—the ability of a textile filling material to resist distortion or change when subjected to

multiple home launderings or drycleanings.

3.1.3 *distortion, n*—in textile battings, defects such as holes, lumps, or thin areas caused by movement of fibers.

3.1.4 *fiberfill, n*—manufactured fibers especially engineered as to linear density, cut-length, and crimp for use as a textile filling material.

3.1.5 *microfiber batting, n*—a textile filling material containing fibers, such as polyester or olefin, that have a diameter of less than [10  $\mu\text{m}$ ].

3.1.6 *needle-punched batting, n*—a textile filling material that is stabilized by mechanically entangling the fibers.

3.1.7 *resin bonded batting, n*—a textile filling material that is stabilized by spraying it with an acrylic, polyvinyl acetate, or other suitable resin emulsion after which the batting is dried and cured.

3.1.8 *thermal bonded batting, n*—a textile filling material that contains low-melting point fibers or polymers that, when heated, fuse the batting materials together.

3.1.8.1 *Discussion*—Thermal bonded batting may also be resin bonded.

3.1.9 *unbonded batting, n*—a textile filling material that is neither needle-punched, resin bonded, or thermal bonded (see also needle-punched batting, resin bonded batting, thermal bonded batting).

## 4. Summary of Test Method

4.1 Specimens in an end use product or in a test panel assembly are laundered or drycleaned in a prescribed cycle. The treated specimens are evaluated for integrity by comparing with photographic rating standards<sup>3</sup> and for changes in tactile appearance.

## 5. Significance and Use

5.1 This test method is used to determine the integrity of the batting or to identify the need for an alternative fiberfill batting or construction technique to meet performance requirements. Maintaining batting integrity is important to the insulating properties and appearance retention over the life of the item.

## 6. Apparatus and Materials

6.1 *Drycleaning Machine*—A single unit, coin-operated or

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<sup>2</sup> *Annual Book of ASTM Standards*, Vol 07.01.

<sup>3</sup> A set of photographic standards illustrating changes in appearance and integrity of batting is available from ASTM Headquarters. Request ADJD4770.