



Designation: D6337 – 98 (Reapproved 2019)

Standard Practice for Physical Characterization of Woven Paint Applicator Fabrics¹

This standard is issued under the fixed designation D6337; 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 covers the dimensions, terminology, and characteristics generally considered of importance to those dealing with woven paint applicator fabrics and describes methods for determining these parameters. This practice is not meant to be a definitive analytical method to reformulate woven fabrics.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.3 *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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*²

D123 Terminology Relating to Textiles

D1776 Practice for Conditioning and Testing Textiles

D1777 Test Method for Thickness of Textile Materials

D3774 Test Method for Width of Textile Fabric

D3775 Test Method for End (Warp) and Pick (Filling) Count of Woven Fabrics

D3776 Test Methods for Mass Per Unit Area (Weight) of Fabric

¹ This practice is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.61 on Paint Application Tools.

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² For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3. Terminology

3.1 *Definitions:*

3.1.1 Several terms in this practice are defined in accordance with Terminology D123.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *backcoating, n*—a resin coating that is usually applied to the back of a fabric and heat cured to enhance its stability.

3.2.2 *backing, n*—a set of warp yarns or ends of defined composition that help create the base of a fabric that runs the length of the fabric (see Fig. 1).

3.2.3 *case of fabric, n*—a box of cloth, ready for shipping, usually consisting of slit reels.

3.2.4 *dyelot, n*—a specific quantity that is processed together and can be comparatively ranked within or among other dyelots.

3.2.5 *end, n*—one warp yarn (see Fig. 1).

3.2.6 *fiber, n*—an individual strand or filament of finite or continuous length that may be of a natural or synthetic origin.

3.2.7 *filling, n*—an individual yarn of defined composition that interlaces with warp ends at right angles in a woven fabric to help form the base of a pile fabric (see Fig. 1).

3.2.8 *laboratory sample, n*—a sample from each case of fabric for acceptance testing.

3.2.9 *lot sample, n*—a sample for acceptance testing consisting of a random number of dyelots as directed in agreement between purchaser and supplier.

3.2.10 *pick, n*—one filling yarn (see Fig. 1).

3.2.11 *pick glass, n*—an instrument with a magnifying lens and a set viewing field of one square inch used to identify construction (see Fig. 2).

3.2.12 *pile, n*—an additional set of warp yarns or ends of defined composition that are introduced into a pile fabric to make cut or uncut loops on the surface that are approximately perpendicular to the plane of the backing and filling (see Fig. 1).

3.2.13 *pile fabric, n*—a three-dimensional cloth with interlacing at right angles of three systems of yarn as warp, fill, and pile.

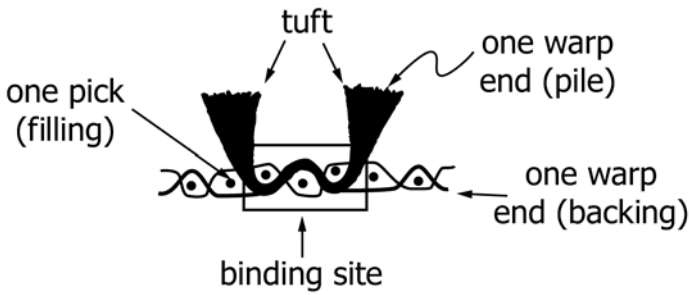


FIG. 1 Components of Typical Pile Fabric

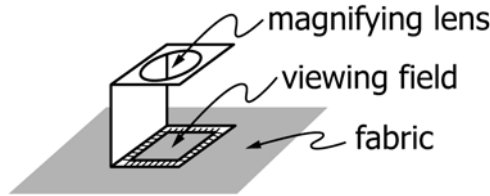


FIG. 2 Pick Glass

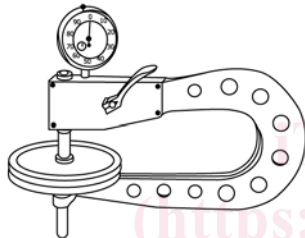


FIG. 3 Pile Height Micrometer



FIG. 4 Weave Constructions

3.2.13.1 *Discussion*—Pile fabrics have a fur-like face that can consist of cut or uncut loops.

3.2.14 *pile fabric composition, n*—the total make-up of the fabric, being either natural or synthetic, or a combination.

3.2.15 *pile height micrometer, n*—a thickness testing instrument, referenced in Test Method **D1777**.

3.2.15.1 *Discussion*—It consists of 4 in. (102 mm) diameter presser foot controlled by a lever, a gage with readings to the nearest 0.001 in. (0.025 mm) and a horseshoe-shaped handle that will measure 6 in. (152.4 mm) into the body of the fabric (see **Fig. 3**).

3.2.16 *pile tuft density, n*—the quantity of pile per unit area as stated in pile tufts per square inch.

3.2.17 *reel, n*—a specified length of slit goods rolled together as one unit.

3.2.18 *shearable pile, n*—the pile tufts above the backing that can be removed with shear clippers.

3.2.19 *slitting, n*—a means of cutting the full width of fabric into longitudinal strips.

3.2.20 *slit width, n*—the width dimension of a fabric strip after slitting.

3.2.21 *test specimen, n*—a specimen cut from a reel of fabric.

3.2.21.1 *Discussion*—Each specimen shall be 6 in. (152.4 mm) in length, with one side of each specimen parallel to the warp ends.

3.2.22 *total fabric density, n*—fabric weight in ounces per square yard of finished fabric.

3.2.23 *tuft, n*—the entire loop that forms the face of the fabric and is attached to the backing fabric at a binding site (see **Fig. 1**).

3.2.24 *weave construction, n*—one repeat of a pattern, including per inch, ends per inch, and the way the pile weaves into the base of the cloth, for example, *W-weave*, *V-weave*.

3.2.24.1 *W-weave, n*—a weave construction where at least 3 picks are needed to form a tuft with the resulting tuft resembling the letter “W” (see **Fig. 4a**).

3.2.24.2 *V-weave, n*—a weave construction where only one pick is needed to form a tuft. The resulting tuft resembles the letter “V” (see **Fig. 4b**).

3.2.25 *woven fabric, n*—a cloth with interlacing at right angles of two systems of yarn known as warp and fill.

3.2.26 *yarn, n*—the coherent arrangement of fibers of varying or similar length, whose relative positions are maintained by a definite lateral twist to produce strength.

4. Significance and Use

4.1 It is important to recognize that all woven paint applicator fabrics are pile fabrics and can be a combination of several different yarns, in a range of densities, chemical compositions, and pile heights, which may influence painting performance.

5. Apparatus

5.1 *Pile-Height Micrometer*³

5.2 *Graduated Linear Scale*, that measures to 1/32 in. increments (1 mm).

5.3 *Pick Glass*.

5.4 *Balance*, capable of weighing to 0.001 oz (0.10 g).

6. Determination of Physical Characteristics

6.1 *Total Fabric Height*—Determine the total fabric height by measuring the material thickness using a pile height micrometer (see Test Method **D1777**). Report the dimensions to the nearest 0.001 in. (0.02 mm).

³The sole source of supply of the pile height micrometer known to the committee at this time is the Andrews Equipment Co., 4619 Torresdale Ave., Philadelphia, PA 19124. If you are aware of alternative suppliers, please provide this information to ASTM International Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,¹ which you may attend.