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Standard Terminology Relating to Fabrics and Fabric Test Methods¹

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1. Scope

1.1 This terminology covers definitions of technical terms used in the industry related to textile fabrics. Terms that are generally understood or adequately defined in other readily available sources are not included. Other terminology standards that have terms related to textile fabrics are shown in 2.1

1.2 *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

- D737 Test Method for Air Permeability of Textile Fabrics
- D1230 Test Method for Flammability of Apparel Textiles
- D1336 Test Method for Distortion of Yarn in Woven Fabrics
- D1388 Test Method for Stiffness of Fabrics
- D1424 Test Method for Tearing Strength of Fabrics by Falling-Pendulum (Elmendorf-Type) Apparatus
- D1775 Test Method for Tension and Elongation of Wide Elastic Fabrics (Withdrawn 2000)³
- D1776/D1776M Practice for Conditioning and Testing Textiles
- D1777 Test Method for Thickness of Textile Materials
- D2261 Test Method for Tearing Strength of Fabrics by the Tongue (Single Rip) Procedure (Constant-Rate-of-Extension Tensile Testing Machine)
- D2594/D2594M Test Method for Stretch Properties of Knitted Fabrics Having Low Power
- D2724 Test Method for Bond Strength of Bonded, Fused,

and Laminated Apparel Fabrics

- D2906 Practice for Statements on Precision and Bias for Textiles (Withdrawn 2008)³
- D3107 Test Methods for Stretch Properties of Fabrics Woven from Stretch Yarns
- D3511/D3511M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Brush Pilling Tester
- D3512/D3512M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Random Tumble Pilling Tester
- D3514/D3514M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Elastomeric Pad
- D3773/D3773M Test Methods for Length of Woven Fabric
- D3774 Test Method for Width of Textile Fabric
- D3775 Test Method for End (Warp) and Pick (Filling) Count of Woven Fabrics
- D3776/D3776M Test Methods for Mass Per Unit Area (Weight) of Fabric
- D3786/D3786M Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method
- D3787 Test Method for Bursting Strength of Textiles—Constant-Rate-of-Traverse (CRT) Ball Burst Test
- D3789 Practice for Labeling Cans of Consumer Spray Paint (Withdrawn 1997)³
- D3882 Test Method for Bow and Skew in Woven and Knitted Fabrics
- D3883 Test Method for Yarn Crimp and Yarn Take-up in Woven Fabrics
- D3884 Guide for Abrasion Resistance of Textile Fabrics (Rotary Platform Abrader Method)
- D3885 Test Method for Abrasion Resistance of Textile Fabrics (Flexing and Abrasion Method)
- D3886 Test Method for Abrasion Resistance of Textile Fabrics (Inflated Diaphragm Apparatus)
- D3887 Specification for Tolerance for Knitted Fabrics (Withdrawn 2017)³
- D3939/D3939M Test Method for Snagging Resistance of Fabrics (Mace)
- D3990 Terminology Relating to Fabric Defects
- D4032 Test Method for Stiffness of Fabric by the Circular Bend Procedure

¹ This terminology is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.59 on Fabric Physical Test Methods A.

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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 The last approved version of this historical standard is referenced on www.astm.org.

D4033 Test Method for Resistance to Yarn Slippage at the Sewn Seam in Upholstery Fabrics (Dynamic Fatigue Method) (Withdrawn 2001)³

D4034/D4034M Test Method for Resistance to Yarn Slippage at the Sewn Seam in Woven Upholstery Fabrics

D4157 Test Method for Abrasion Resistance of Textile Fabrics (Oscillatory Cylinder Method)

D4158 Guide for Abrasion Resistance of Textile Fabrics (Uniform Abrasion)

D4390 Practice for Evaluation of the Performance of Terry Bathroom Products for Household Use (Withdrawn 1994)³

D4772 Test Method for Surface Water Absorption of Terry Fabrics (Water Flow)

D4350 Test Method for Corrosivity Index of Plastics and Fillers

D4685/D4685M Test Method for Pile Fabric Abrasion

D4848 Terminology Related to Force, Deformation and Related Properties of Textiles

D4850 Terminology Relating to Fabrics and Fabric Test Methods

D4851 Test Methods for Coated and Laminated Fabrics for Architectural Use

D4964 Test Method for Tension and Elongation of Elastic Fabrics (Constant-Rate-of-Extension Type Tensile Testing Machine)

D4966 Test Method for Abrasion Resistance of Textile Fabrics (Martindale Abrasion Tester Method)

D4970/D4970M Test Method for Pilling Resistance and Other Related Surface Changes of Textile Fabrics: Martindale Tester

D5034 Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)

D5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)

D5103 Test Method for Length and Length Distribution of Manufactured Staple Fibers (Single-Fiber Test)

D5278/D5278M Test Method for Elongation of Narrow Elastic Fabrics (Static-Load Testing)

D5362 Test Method for Snagging Resistance of Fabrics (Bean Bag)

D5378 Performance Specification for Woven and Knitted Shower Curtains for Institutional and Household Use

D5426 Practices for Visual Inspection and Grading of Fabrics Used for Inflatable Restraints

D5430 Test Methods for Visually Inspecting and Grading Fabrics

D5446 Practice for Determining Physical Properties of Fabrics, Yarns, and Sewing Thread Used in Inflatable Restraints

D5587 Test Method for Tearing Strength of Fabrics by Trapezoid Procedure

D5684 Terminology Relating to Pile Floor Coverings

D5793 Test Method for Binding Sites per Unit Length or Width of Pile Yarn Floor Coverings

D6207 Test Method for Dimensional Stability of Fabrics to Changes in Humidity and Temperature

D6614/D6614M Test Method for Stretch Properties of Textile Fabrics – CRE Method

D6674 Guide for Proficiency Test Program for Fabrics

D6770 Test Method for Abrasion Resistance of Textile Webbing (Hex Bar Method)

D6797 Test Method for Bursting Strength of Fabrics Constant-Rate-of-Extension (CRE) Ball Burst Test

3. Terminology

3.1 Definitions:

abrasion, *n*—the wearing away of any part of a material by rubbing against another surface. **D3884, D3885, D3886, D4157, D4158, D4685/D4685M, D4966**

abrasion cycle, *n*—one complete movement across the surface of a material.

DISCUSSION—The complete movement for an abrasion cycle is dependent on the action of the abrasion machine and the test method used. It may consist of one back-and-forth unidirectional movement or one circular movement, or a combination of both. **D3885**

abrasion cycle, *n*—*for the Martindale Abrasion Tester*, 16 rubs required to complete a geometric shape, known as a Lissajous. **D4966**

abrasion cycle, *n*—*in abrasion testing*, one or more movements of the abradant across a material surface, or the material surface across the abradant, that permits a return to its starting position.

DISCUSSION—The abrasion cycle is dependent on the programmed motions of the abrasion machine and the test standard used. It may consist of one back-and-forth unidirectional movement such as for the flexing and abrasion test method; a circular movement such as for the rotary platform test method, or a combination of both such as for the inflated diaphragm test method. For the oscillatory cylinder abrasion method, an abrasion cycle consists of one double-rub. **See double-rub.**

[D13.60] D4157, D6770

absorption, *n*—a process in which one material (the absorbent) takes in or absorbs another (the absorbate); as the absorption of moisture by fibers. **[D13.59] D4772**

accuracy, *n*—*of a test method*, the degree of agreement between the true value of the property being tested (or accepted standard value) and the average of many observations made according to the test method, preferably by many observers. **[D13.60] D2906, D6674**

air permeability, *n*—the rate of air flow passing perpendicular through a known area under a prescribed air pressure differential between the two surfaces of a material.

DISCUSSION—Air permeability of fabric at a stated pressure differential between two surfaces of the fabric is generally expressed in SI units as cm³/s/cm² and in inch-pound units as ft³/min/ft² calculated in operating conditions. (See **permeability, porosity**.) **D737**

air-supported roof, *n*—a fabric roof-system that is properly secured and primarily supported and held in place by air pressure. **D4851**

architectural-use, *n*—*in the building trade*, a descriptive term for fabrics used in fabric roof-systems or similar industrial applications. (See also **fabric roof-system**.) **D4851**