



Standard Guide for Evaluating Nonwoven Fabrics¹

This standard is issued under the fixed designation D 1117; 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 guide covers procedures for testing nonwoven fabrics. The test procedures appear in the following sections:

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Breaking Force and Elongation	9
Bursting Strength	10
Conditioning	7
Dimensional Change	20
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Resin Binder Distribution	22
Seam Breaking Strength	13
Trapezoid Tear	14
Tongue Tear (Single Rip)	15
Elmendorf Tear	16
Thickness	19

NOTE 1—The terms “machine” and “cross machine” must be substituted for “warp” and “filling,” respectively, throughout these test methods wherever pertinent.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only and may be approximate.

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 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 Textile Materials²
- D 737 Test Method for Air Permeability of Textile Fabrics²
- D 1683 Test Method for Failure in Sewn Seams of Woven Fabrics²
- D 1776 Practice for Conditioning Textiles for Testing²
- D 2724 Test Method for Bonded and Laminated Apparel Fabrics²

¹ This guide is under the jurisdiction of ASTM Committee D-13 on Textiles and are the direct responsibility of Subcommittee D13.64 on Nonwoven Fabrics.

Current edition approved Sept. 10, 1999. Published January 2000. Originally published as D 1117 – 50T. Discontinued November 1995 and reinstated as D 1117. Last previous edition D 1117 – 98.

² Annual Book of ASTM Standards, Vol 07.01.

D 3776 Test Methods for Mass per Unit Area (Weight) of Woven Fabric³

D 3786 Test Method for Hydraulic Bursting Strength of Knitted Goods and Nonwoven Fabrics: Diaphragm Bursting Strength Tester Method³

D 3884 Test Method for Abrasion Resistance of Textile Fabrics (Rotary Platform, Double-Head Method)⁴

D 3885 Test Method for Abrasion Resistance of Textile Fabrics (Flexing and Abrasion Method)³

D 3886 Test Method for Abrasion Resistance of Textile Fabrics (Inflated Diaphragm Method)³

D 4158 Test Method for Abrasion Resistance of Textile Fabrics (Uniform Abrasion Method)³

D 5034 Test Method for Breaking Force and Elongation of Textile Fabrics (Grab Test)³

D 5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Test)³

D 5729 Test Method for Thickness of Nonwoven Fabrics⁴

D 5732 Test Method for Stiffness of Nonwoven Fabrics Using the Cantilever Test³

D 5733 Test Method for Tearing Strength of Nonwoven Fabrics by the Trapezoid Procedure³

D 5734 Test Method for Tearing Strength of Nonwoven Fabrics by the Falling-Pendulum (Elmendorf) Apparatus³

D 5735 Test Method for Tearing Strength of Nonwoven Fabrics by the Tongue (Single Rip) Procedure (CRE Testing)³

D 5736 Test Method for Thickness of Highloft Nonwoven Fabrics³

D 5802 Test Method for Sorption of Bilobulous Paper Products (Sorptive Rate and Capacity Using Gravimetric Principles)⁴

D 5908 Test Method for Resin Binder Distribution and Binder Penetration Analysis of Polyester Nonwoven Fabrics³

F 778 Test Methods for Gas Flow Resistance Testing of Filtration Media⁵

3. Terminology

3.1 Definitions:

3.1.1 *nonwoven fabric, n*—a textile structure produced by bonding or interlocking of fibers, or both, accomplished by

³ Annual Book of ASTM Standards, Vol 07.02.

⁴ Annual Book of ASTM Standards, Vol 15.09.

⁵ Annual Book of ASTM Standards, Vol 14.02.