Designation: D5034 – 09 (Reapproved 2013)

Standard Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test)[1]

This standard is issued under the fixed designation D5034; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This test method covers the grab and modified grab test procedures for determining the breaking strength and elongation of most textile fabrics. Provisions are made for wet testing.

1.1.1 The grab test procedure is applicable to woven, nonwoven, and felted fabrics, while the modified grab test procedure is used primarily for woven fabrics.

1.2 This test method is not recommended for glass fabrics, or for knitted fabrics and other textile fabrics which have high stretch (more than 11 %).

NOTE 1—For the determination of the breaking force and elongation of textile fabrics using the raveled strip test procedure and the cut strip test procedure, refer to Test Method D5035.

1.3 This test method provides the values in both inch-pound units and SI 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 acceptable metric units or in other 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:*[2]

D76 Specification for Tensile Testing Machines for Textiles
D123 Terminology Relating to Textiles
D629 Test Methods for Quantitative Analysis of Textiles
D1059 Test Method for Yarn Number Based on Short-Length Specimens (Withdrawn 2010)[3]
D1776 Practice for Conditioning and Testing Textiles
D5035 Test Method for Breaking Force and Elongation of Textile Fabrics (Strip Method)
D4848 Terminology Related to Force, Deformation and Related Properties of Textiles
D4849 Terminology Related to Yarns and Fibers
D4850 Terminology Relating to Fabrics and Fabric Test Methods

3. Terminology

3.1 For definition of textile terms used in this test method: breaking force, breaking load, elongation, extension, tensile test, refer to Terminology D4848.

3.2 For definitions of textile terms used in this test method: constant-rate-of-extension (CRE tensile testing machine, constant-rate-of-load (CRL) tensile testing machine, constant-rate-of-traverse (CRT) tensile testing machine, refer to Terminology D4849.

3.3 For definitions of textile terms used in this test method: grab test – in fabric testing, and modified grab test – in fabric testing refer to Terminology D4850.

3.4 For all other textile terms used in this test method, refer to Terminology D123.

4. Summary of Test Method

4.1 A 100-mm (4.0-in.) wide specimen is mounted centrally in clamps of a tensile testing machine and a force applied until

[1] This test method is under the jurisdiction of ASTM Committee D13 on Textiles and is the direct responsibility of Subcommittee D13.60 on Fabric Test Methods, Specific.

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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.

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