



Designation: D3107 – 07 (Reapproved 2019)

Standard Test Methods for Stretch Properties of Fabrics Woven from Stretch Yarns¹

This standard is issued under the fixed designation D3107; 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 U.S. Department of Defense.

1. Scope

1.1 These test methods cover the determination of the amount of fabric stretch, fabric growth, and fabric recovery of fabrics woven in whole or in part from stretch yarns after a specified tension and extension.

1.2 These test methods are intended for use with woven fabrics exhibiting high stretch (greater than 12 %) and good recovery properties from low tension (up to 360 g/cm or 2 lb/in. of fabric width). When agreed upon, these test methods can be used for fabrics woven in whole or in part from non-stretch yarns that exhibit limits within the stretch characteristics shown above.

1.3 These test methods allow the use of two tension options commonly used in the textile industry; 1.35 kg (3 lb) and 1.8 kg (4 lb). Several calculations are included for fabric stretch, fabric growth and fabric recovery, and can be used individually when required by individual specifications.

1.4 These test methods should not be used to measure breaking elongation of woven fabrics which is covered in Test Method [D5035](#).

1.5 The values stated in either SI units or inch-pound units are to be regarded separately as the standard. Within the text, the inch-pound units are shown in parentheses. The values stated in each system are not exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in nonconformance with the specification.

1.6 *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.*

1.7 *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](#)

[D2904 Practice for Interlaboratory Testing of a Textile Test Method that Produces Normally Distributed Data](#) (Withdrawn 2008)³

[D2906 Practice for Statements on Precision and Bias for Textiles](#) (Withdrawn 2008)³

[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](#)

[D5035 Test Method for Breaking Force and Elongation of Textile Fabrics \(Strip Method\)](#)

3. Terminology

3.1 For all terminology related to Fabric, refer to Terminology [D4850](#).

3.2 For all terminology related to Yarns and Fiber, refer to Terminology [D4849](#).

3.3 For all terminology related to Force, Deformation and Related Properties of Textiles, refer to Terminology [D4848](#).

3.3.1 The following terms are relevant to this standard: bench marks, fabric stretch, fabric growth, stretch yarn, tension.

3.4 For all other terminology related to textiles, refer to Terminology [D123](#).

¹ These test methods are under the jurisdiction of ASTM Committee [D13](#) on Textiles and are the direct responsibility of Subcommittee [D13.59](#) on Fabric Test Methods, General. Current edition approved July 1, 2019. Published July 2019. Originally approved in 1975. Last previous edition approved in 2015 as D3107 – 07(2015). DOI: 10.1520/D3107-07R19.

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.