



Designation: D6797 – 15

Standard Test Method for Bursting Strength of Fabrics Constant-Rate-of-Extension (CRE) Ball Burst Test¹

This standard is issued under the fixed designation D6797; 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 test method describes the measurement for bursting strength of woven and knitted textiles taken from rolls of fabric or fabric taken from garments.

NOTE 1—For the measurement of bursting strength with a hydraulic or pneumatic machine, refer to Test Method [D3786](#). For the measurement of the bursting strength by means of a ball burst mechanism, refer to Test Method [D3787](#).

NOTE 2—Constant Rate of Traverse (CRT) machines and Constant Rate of Extension (CRE) machines have been shown to provide different results. When using a CRT device, refer to Test Method [D3787](#).

1.2 The values stated in either SI units or U.S. customary units are to be regarded as standard, but must be used independently of each other. The U.S. customary units 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:](#)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 - [D2904 Practice for Interlaboratory Testing of a Textile Test Method that Produces Normally Distributed Data \(Withdrawn 2008\)](#)³
 - [D2906 Practice for Statements on Precision and Bias for Textiles \(Withdrawn 2008\)](#)³
 - [D3786 Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method](#)

¹ This test method is under the jurisdiction of ASTM Committee [D13](#) on Textiles and is the direct responsibility of Subcommittee [D13.59](#) on Fabric Test Methods, General.

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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.

- [D3787 Test Method for Bursting Strength of Textiles—Constant-Rate-of-Traverse \(CRT\) Ball Burst Test](#)
- [D4850 Terminology Relating to Fabrics and Fabric Test Methods](#)

3. Terminology

3.1 For all terminology related to [D13.59](#), Fabric Test Methods, General, see Terminology [D4850](#).

3.1.1 The following terms are relevant to this standard: bursting strength, constant-rate-of-traverse (CRT) tensile testing machine, fabric.

3.2 For definitions of all other textile terms see Terminology [D123](#).

4. Summary of Test Method

4.1 Set up the tensile tester for performing the ball burst test in accordance with the manufacture's instructions. A specimen of the fabric is securely clamped to the CRE machine without tension to the ball burst attachment. A force is exerted against the specimen by a polished, hardened steel ball until rupture occurs.

5. Significance and Use

5.1 This method is used to determine the force required to rupture textile fabric by forcing a steel ball through the fabric with a constant-rate-of-extension tensile tester.

5.2 This is a new method and therefore the history of data is very small, however the agreement of within-laboratory data suggest this method may be considered for acceptance testing of commercial shipments with caution.

5.2.1 If there are differences of practical significance between reported test results for two laboratories (or more), comparative test should be performed to determine if there is a statistical bias between them, using competent statistical assistance. As a minimum, samples used for such comparative test should be as homogeneous as possible, drawn from the same lot of material as the samples that resulted in disparate results during initial testing, and randomly assigned in equal numbers to each laboratory. Other fabrics with established test values may also be used for these comparative tests. The test results from the laboratories involved should be compared using a statistical test for unpaired data, at a probability level chosen