Designation: D2207 – 00(Reapproved 2010)

Standard Test Method for Bursting Strength of Leather by the Ball Method[1]

This standard is issued under the fixed designation D2207; 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 This test method covers the determination of the bursting strength of leather by the ball method. It may be used to test a large variety of leathers and leather products. It is particularly applicable to light- and medium-weight leathers, such as shoe uppers and garments. This test method does not apply to wet blue.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

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]

D1517 Terminology Relating to Leather

D1610 Practice for Conditioning Leather and Leather Products for Testing

D1813 Test Method for Measuring Thickness of Leather Test Specimens

D2209 Test Method for Tensile Strength of Leather

3. Terminology

3.1 For definitions of leather terms used in this standard refer to Terminology D1517.

4. Summary of Test Method

4.1 The leather specimen is mounted in the ball burst fixture which is attached to a testing machine, as described in Test Method D2209. The machine is operated at a jaw separation of 4 ± 1 in./min. The maximum load registered is recorded. The bursting strength in lb/in. of thickness is calculated by dividing the bursting load by the thickness of the specimen.

5. Significance and Use

5.1 This test method is designed to measure the bursting strength of leather by measuring the force required to force a spherical ended plunger through a piece of leather. The bursting load and extension will be generally proportional to the diameter of the plunger. This test method is suitable for development, control and service evaluation of the leather. There is good correlation between bursting strength and tensile strength. This test method may not apply when the conditions of the test employed differ widely from those specified in the test method.

6. Apparatus

6.1 *Testing Machine,* as described in Test Method D2209.

NOTE 1—The machine shall have a cross-head speed of 4 ± 1 in./min (1.6 ± 0.4 mm/s).

6.2 *Thickness Gage*—A dead-mass type of thickness gage as described in Test Method D1813.

6.3 *Burst Tester,* [3] as shown in Fig. 1. The diameter of the ball or plunger shall be ¼ in. (0.250 in. (6.4 mm)).

6.4 *Parts Required to Modify Burst Tester,* as illustrated in Fig. 2, or equivalent.

6.5 *Die, Knife, or Shears,* for cutting the test specimen.

6.6 *Dial Gage,* mounted on the burst tester as shown in Fig. 1 to measure the height of the extension of the leather specimen.

NOTE 2—This gage shall be calibrated to read directly to the nearest 0.001 in. (0.025 mm). It shall be equipped with a flat anvil and presser foot.

6.7 *Autographic Recorder* to record the extension to the nearest 0.1 in. (2.5 mm).

[1] This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.07 onPhysical Properties This test method was developed in cooperation with the American Leather Chemists Assn. (Standard Method E14 – 1965).

Current edition approved Oct. 1, 2010. Published November 2010. Originally approved in 1964. Last previous edition approved in 2005 as D2207 – 00 (2005). DOI: 10.1520/D2207-00R10.

[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] A modified Scott Model W Burst Tester has been found satisfactory for this purpose. Available from Precision Scientific, 3737 W. Cortland, Chicago, IL 60647. Request Ball Burst Fixture Catalog, No. 26651.