



Designation: D2211 – 00 (Reapproved 2005)

Standard Test Method for Elongation of Leather¹

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1. Scope

1.1 This test method covers the measurement of the elongation or stretch characteristics of leather produced by a tensile load. This test method is intended for use on all types of leather and with all of the breaking load tests. This test method does not apply to wet blue.

1.2 The values given in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

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

D1610 Practice for Conditioning Leather and Leather Products for Testing

D2209 Test Method for Tensile Strength of Leather

3. Terminology

3.1 *Definitions:*

3.1.1 *elongation, or stretch*—the increase in length of a span of specimen under tension.

4. Significance and Use

4.1 The elongation measurement may be made at any designated load and is expressed as a percentage of the original distance between the jaws or between bench marks of the unstretched specimen. The speed of the machine is important. Speeds under or more than 10 ± 2 in./min (4.2 ± 0.8 mm/s) will give variables in the results, thus affecting the reproducibility of the method. The direction relative to the backbone

and the width of the test specimen determines the magnitude of the elongation. This test method is excellent for development, control, specification acceptance, and service evaluation of leather. This test method may not apply when the conditions of the test employed differ widely from those specified in the test method.

5. Apparatus

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

5.2 *Dividers*, having legs at least 4 in. (102 mm) long and an adjustable screw arrangement for fixing the distance between them.

5.3 *Steel Scale*, graduated to read in 0.02 in. (0.5 mm).

6. Test Specimen

6.1 The specimen shall be dumbbell in shape when the test is made with the tension test. It shall be cut from the test unit of leather by means of a die as shown in Fig. 1 of Test Method **D2209**. The direction of the long axis relative to the backbone shall be noted.

6.2 The specimen for narrow strap, welting, lace, and round belting leathers shall be a piece of leather uniform in width and 6 in. (152 mm) long.

6.3 The specimen for the grab method of determining breaking load shall be 6 in. (152 mm) long and 3 in. (76 mm) wide.

7. Conditioning

7.1 All specimens shall be conditioned as prescribed in Practice **D1610**. Conditioning other than as prescribed shall be noted in the results.

8. Procedure

8.1 Mount the specimen symmetrically with the jaws separated a distance of 4 in. (102 mm).

8.2 Operate the machine so that the movable grip travels at a speed of 10 ± 2 in./min (4.2 ± 0.8 mm/s).

8.3 Follow the distance between the jaws or the difference between bench marks with the dividers until the load at which the elongation is desired has been reached. Take all measurements between the inner edges of the jaws or between the inner edges of the bench marks. Measure the distance between the points of the legs of the dividers to the nearest 0.02 in. (0.5

¹ This test method is under the jurisdiction of ASTM Committee **D31** on Leather and is the direct responsibility of Subcommittee **D31.07** on Physical Properties—General. This test method was developed in cooperation with the American Leather Chemists Assn.

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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.