



## Standard Test Method for Measuring Thickness of Leather Test Specimens<sup>1</sup>

This standard is issued under the fixed designation D 1813; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

### 1. Scope

1.1 This test method covers the measurement of the thickness of leather test specimens in which the dimensions of the specimens are used directly in determining the results of tests for physical properties. This test method does not apply to wet blue.

1.2 *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. Significance and Use

2.1 This test method shall be used where precise dimensions are necessary for calculation of properties expressed in physical units. It is not intended to replace practical thickness measurements based on commercial portable tools, nor is it implied that thickness measurements made by the two procedures will agree exactly.

### 3. Apparatus

3.1 *Gage*, equipped with a dial micrometer, a flat anvil, and a presser foot loaded by a dead mass.<sup>2</sup>

3.2 *Dial*, graduated to read to the nearest 0.01 mm, with small second dial graduated to read to the nearest 1 mm or to the nearest 0.001 in. and 0.1 in. respectively.

3.3 *Anvil*, flat, with a diameter of  $0.395 \pm 0.02$  in. ( $10 \pm 0.5$  mm) and projecting 0.1 in. (2.5 mm) from the surface of a flat

circular platform about 2 in. (50 mm) in diameter.

3.4 *Presser Foot*, having a flat surface  $0.395 \pm 0.02$  in. ( $10 \pm 0.5$  mm) in diameter, and can be lifted by a lever at least 13 mm or 0.5 in. It shall be dead-mass loaded to exert a total load of  $13.86 \pm 0.35$  oz ( $393 \pm 10$  g) on the specimen. The load is equivalent to  $500 \text{ g/cm}^2$ . The contacting surface of the presser foot and the surface of the anvil shall be parallel within 0.0001 in. (0.0025 mm).

### 4. Test Specimen

4.1 The test specimen shall be a piece of leather that has been conditioned and cut to the dimensions required for the particular physical test.

### 5. Procedure

5.1 Place the specimen on the anvil, and lower the presser foot gently (do not drop) until it rests on the specimen. Take the reading 5 s after the full load is reached. Read the thickness to the nearest 0.01 mm or 0.001 in.

5.2 Take the number of thickness measurements at the desired locations as specified in the particular physical test method being used.

### 6. Report

6.1 The report shall include the following:

6.1.1 Thickness of each specimen, reported as the average of the thickness measurements taken, and

6.1.2 Thickness of the sample, if pertinent, reported as the average thickness of all the specimens measured.

### 7. Precision

7.1 The coefficient of variation of measurements of thickness of consecutive specimens by this method is less than 5.0%.

### 8. Keywords

8.1 leather; thickness

<sup>1</sup> 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 (Standard Method E 4–1983).

Current edition approved Sept. 10, 2000. Published October 2000. Originally published as D 1813–60. Last previous edition D 1813–70 (2000).

<sup>2</sup> The sole source of supply of the dead-mass type gage known to the committee at this time is Frank E. Randall Co., Inc., 246 Ash Street, Watham, MA 02154. If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,<sup>1</sup> which you may attend.

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