



Designation: D2212 – 00 (Reapproved 2021)

# Standard Test Method for Slit Tear Resistance of Leather<sup>1</sup>

This standard is issued under the fixed designation D2212; 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.

*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 slit tear resistance of light leathers such as shoe uppers, gloves, and upholstery. 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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:*<sup>2</sup>

[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 *Definitions:*

<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. This test method was developed in cooperation with the American Leather Chemists Assn. (Standard Method E59 – 1965).

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<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

3.1.1 *slit tear resistance*—the load required to tear the cross-sectional thickness of the leather at a slit cut through the leather by a die or a sharp knife.

## 4. Significance and Use

4.1 This test method is designed to measure the load required to tear leather at a slit cut perpendicular to its surface. Tanners and leather buyers have found that it gives an indication of the resistance of the cross-sectional thickness of leather to tearing. It is of particular value in estimating the durability of leather to withstand tearing stresses encountered in the manufacture of shoes, garments, and upholstered products. The thickness of the specimen and direction of slit relative to the backbone will affect the uniformity of the test results. 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 *Thickness Gauge*—A dead-weight type of thickness gauge as described in Test Method [D1813](#).

5.3 *Specimen Holders*—Two specimen holders, which are fastened into the jaws of the testing machine and which support the specimen during testing (see [Fig. 1](#)). The specimen holders shall be adjusted in the machine so that they are touching each other.

5.4 *Die*—A die 1 in. (25.4 mm) wide by 2 in. (51 mm) long that cuts a specimen while simultaneously cutting a slot in the specimen (see [Fig. 2](#)).

## 6. Test Specimens

6.1 The specimen shall be 1 by 2 in. (25.4 by 51 mm), cut with the long dimension either parallel or perpendicular to the backbone (see [Figs. 1 and 2](#)).

6.2 The specimen cut with the slit tear die shall have a slot  $\frac{7}{16}$  in. (0.4375 in. (11 mm)) long by  $\frac{3}{16}$  in. (0.1875 in. (4.8 mm)) wide tapered with a  $\frac{3}{16}$ -in. radius to a slit at each end of specimen as shown in [Fig. 2](#).

