Designation: D7255 – 14

Standard Test Method for Abrasion Resistance of Leather (Rotary Platform, Abraser Method)[1]

This standard is issued under the fixed designation D7255; 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 covers the determination of the abrasion resistance of leather using the rotary platform abraser.

NOTE 1—This test method is similar but not equivalent to ISO 17076-1, and results should not be directly compared between the two methods.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this 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 to 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

D2813 Practice for Sampling Leather for Physical and Chemical Tests

G195 Guide for Conducting Wear Tests Using a Rotary Platform Abraser

2.2 *Other Standards:*[3]

ISO 17076-1 Leather-Determination of abrasion resistance Part 1-Taber method

3. Terminology

3.1 *Definitions:*

3.1.1 *abraser*—a wear testing instrument, also referred to as a rotary platform tester or abrader.

3.1.2 *abrasion*—the wearing away of any part of a material by rubbing against another surface.

3.1.3 *abrasion cycle*—in *abrasion testing*, one or more movements of the abradant across a material surface, or the material surface across the abradant, that permits a return to its starting position. In the case of the rotary platform test method, it consists of one complete rotation of the specimen.

3.1.4 *durability*—the ability to withstand deterioration or wear out in use, including the effects of abrasion.

3.1.5 *resurface*—the preparation of an abrasive wheel on a resurfacing disk or diamond tool wheel refacer, prior to use in testing.

3.2 For definitions of other leather terms used in this test method, refer to Terminology D1517.

4. Summary of Test Method

4.1 A specimen is abraded using rotary rubbing action under controlled conditions of pressure and abrasive action. The test specimen, mounted on a turntable platform, turns on a vertical axis, against the sliding rotation of two abrading wheels. One abrading wheel rubs the specimen outward toward the periphery and the other, inward toward the center. The resulting abrasion marks form a pattern of crossed arcs over an area of approximately 30 cm^2. Resistance to abrasion is evaluated by visual inspection of damage to the specimen or change in weight, as described in Section 14.

5. Significance and Use

5.1 The resistance of leather to abrasion, as measured on a testing machine in the laboratory, is generally only one of several factors contributing to wear performance or durability as experienced in the actual use of the material. While "abrasion resistance" (often stated in terms of the number of abrasion cycles) and "durability" are frequently related, the relationship varies with different end uses and different factors may be necessary in any calculation of predicted durability from specific abrasion data. This test method provides a comparative ranking of material performance, which can be used as an indication of relative end-use performance.

5.2 The resistance of leather to abrasion may be affected by factors including test conditions, type of abradant, pressure

[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.

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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] Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, http://www.ansi.org.

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