



Standard Test Method for Static Water Absorption of Leather¹

This standard is issued under the fixed designation D 6015; 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 amount of water absorbed by leather at $23 \pm 2^\circ\text{C}$ by immersion under static conditions. It may be used on all types of leather. 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. Referenced Documents

2.1 ASTM Standards:

D 1517 Terminology Relating to Leather²

D 1610 Practice for Conditioning Leather²

3. Terminology

3.1 For definitions of leather terms used in this test method refer to Terminology D 1517.

4. Summary of Test Method

4.1 In this test method the amount of water absorbed by a leather specimen is measured at room temperature with all surfaces exposed to water.

5. Significance and Use

5.1 This test method is used to determine compliance with specifications for water absorption of upper leather. The significance of the test method is limited by the static conditions employed, and the results do not reflect the water absorption under dynamic conditions of flexing.

6. Apparatus

6.1 *Beaker*, 1000 mL.

6.2 *Balance*, sensitive to 0.01 g.

6.3 *Blotting Paper*.

7. Test Specimen

7.1 The test specimen shall be a square of leather approxi-

mately 4 by 4 in. (102 by 102 mm).

7.2 Unless otherwise specified in the detail specification, one specimen from each test unit of sample shall be tested.

7.3 Prior to testing, the specimen shall be conditioned according to Practice D 1610.

8. Procedure

8.1 Weigh the specimen to the nearest 0.01 g and record the mass as W_1 .

8.2 One to three specimens shall be completely immersed in a 1000 mL beaker of distilled water at $23^\circ\text{C} \pm 2^\circ\text{C}$. This should be done in such a manner that the surface of the specimens do not touch each other.

8.3 After 1 h ± 1 min immersion, the specimens shall be removed from the beaker and the surface water from each removed by lightly blotting the specimen with blotting paper prior to weighing.

8.4 The specimen shall then be weighed immediately and the mass recorded as W_2 .

9. Calculation

9.1 The amount of water absorbed by each specimen shall be calculated as follows:

$$\text{Water absorbed, \%} = [(W_2 - W_1)/W_1] \times 100 \quad (1)$$

where:

W_1 = weight of the original specimen, grams, and

W_2 = weight of the specimen after water immersion, grams.

10. Report

10.1 The amount of water absorbed by the specimen shall be reported to the nearest 0.01 %.

11. Precision and Bias

11.1 This test method is adopted from the procedures of the Federal Government where it has long been in use. It was approved for publication before the inclusion of precision and bias statements was mandated. The original interlaboratory test data is no longer available. The user is cautioned to verify by use of reference materials, if available, that the precision and bias of this test method is adequate for contemplated use.

12. Keywords

12.1 leather; static; water absorption

¹ This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.03 on Footwear.

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² *Annual Book of ASTM Standards*, Vol 15.04.