



Designation: D6116 – 18 (Reapproved 2023)

Standard Test Method for Blocking¹

This standard is issued under the fixed designation D6116; 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.

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 resistance of leather to blocking under specific conditions of temperature, humidity, and pressure. This test method does not apply to wet blue.

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, 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 *AATCC Standard*.²
AATCC TM15 Colorfastness to Perspiration

3. Apparatus

3.1 *Forced Circulating Hot Air Oven*, capable of maintaining $80\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$.

3.2 *American Medical Museum Jar (with Lid)*, having inner dimensions of 16 cm high, 10 cm long, and 8 cm wide. There shall be three indentations at the top of each 8 cm side. Other glass containers similar in size may be used, provided they give the same result.

3.3 *Petri Dish*, 100 mm by 15 mm, with cover.

3.4 *Weight*, 2000 g.

3.5 *Perspirometer*, consisting of a number of glass plates which can be kept in suitable compression loading frame. Any other apparatus may be used, provided it gives the same results; for example, the AATCC perspirometer tester as described in AATCC TM15, which is commercially available.

4. Test Specimen

4.1 Test four specimens per sample with dimensions of 2.5 cm by 10 cm. Two samples shall be parallel to the backbone, and two samples perpendicular to the backbone. If material is limited, one specimen per direction is suitable.

5. Procedure

5.1 The specimen shall be perforated 2 mm from one end and hung on a standard size paper clip that has been opened to its full length. No more than five specimens shall be hung on one clip. The clip holding the specimen shall be set into the indentations of the jar. No more than three clips shall be placed in a jar. The jar shall be filled with distilled/deionized water at $23\text{ }^{\circ}\text{C} \pm 2\text{ }^{\circ}\text{C}$ to a level no higher than 1.25 cm from the bottom of the hanging specimen. The lid shall then be placed on the jar and the specimen allowed to condition for 4 h.

5.2 After conditioning, the 2.5 cm by 10 cm specimen shall be removed from the jar and immediately folded finish to finish to form a 2.5 by 5 cm rectangle. If the leather is unable to be folded upon itself (too thick or stiff), it may be cut to 2.5 by 5 cm sections and placed finish to finish. Follow Method 1 or Method 2 from this section forward.³

5.3 *Method 1 (Petri Dish Method)*:

5.3.1 The folded specimen shall then be placed in an inverted (rim up) petri dish cover. The bottom plate of the dish shall then be placed concentrically within the inverted cover plate so as to cover the specimen evenly.

5.3.2 A 2000 g weight shall be placed on top of the inverted bottom plate. The whole assembly shall then be placed in an oven at $80\text{ }^{\circ}\text{C} \pm 3\text{ }^{\circ}\text{C}$ for 2 h and then removed. The weight and cover plate shall be removed from the assembly and the specimen allowed to cool for 30 min.

³ DoD has only adopted Method 1.

¹ This test method is under the jurisdiction of ASTM Committee D31 on Leather and is the direct responsibility of Subcommittee D31.05 on Upholstery.

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² Available from American Association of Textile Chemists and Colorists (AATCC), P.O. Box 12215, Research Triangle Park, NC 27709-2215, <http://www.aatcc.org>.

5.3.3 The cooled and folded specimen shall be examined by slowly pulling the fold apart by hand. The specimen shall be examined for ease of separation, grain damage, and finish peeling.

5.4 Method 2 (Perspirometer Method):

5.4.1 The finish to finish folded samples (5.2) can alternatively be placed between two glass plates; place the plates in the apparatus (3.5). Plates made of, for example, poly(methyl methacrylate) are not suitable because in time they may become distorted. The construction of the test apparatus shall ensure that the pressure is constant during the whole test.

5.4.1.1 Any other apparatus may be used, provided it gives the same results; for example, the AATCC perspirometer tester as described in AATCC TM15, which is commercially available.

5.4.2 One can also place two samples (5.2) on the same plate, but care should be taken to increase the weight to 4000 g.



FIG. 1 Perspirometer

5.4.3 It is possible to test several specimens stacked up on one another simultaneously, but care shall be taken to place each centrally between two plates so that pressure is exerted evenly over the specimen surfaces.

5.4.4 Load with an approximately 2000 g load weight. The pressure plate is locked, the weights removed, and the unit lying on its side is placed in the oven so that the plates and specimens are vertical.

5.4.5 The whole assembly shall then be placed in an oven at 80 °C ± 3 °C for 2 h and then removed. The pressure shall be gently released from the assembly and the specimen allowed to cool for 30 min.

5.4.6 The cooled specimen shall be examined by slowly pulling the fold apart by hand. The specimen shall be examined for ease of separation, grain damage, and finish peeling.

6. Report

6.1 Report which method was used.

6.2 Report resistance of specimen to blocking by the following scale:

- 1—Pass. No blocking.
- 2—Fail. Finish peeling.

7. Precision and Bias

7.1 This test method is adopted from the procedures of the federal government, where it has been in use and where it was approved for publication before the inclusion of precision and bias statements was mandated. The original interlaboratory test data are 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.

8. Keywords

8.1 blocking; finish; leather; sticking

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