Designation: D6182 – 00 (Reapproved 2015)

Standard Test Method for Flexibility and Adhesion of Finish on Leather[1]

This standard is issued under the fixed designation D6182; 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 is intended for use on finished leather to evaluate resistance to cracking, delamination, and discoloration of the finish when subjected to repeated flexing. 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 and health practices and 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

2.2 *DIN Standard:*[3]

DIN 53351 Dauerfaltverhalten

3. Terminology

3.1 *Definitions*—Terms used in this test method are defined in accordance with Terminology D1517.

4. Summary of Test Method

4.1 Leather is conditioned according to one of two prescribed procedures, flexed in a Bally Flexometer,[4] and an endpoint is determined by rating the degree of damage after a fixed number of flexes.

5. Significance and Use

5.1 This test method is intended for use on any type of finished leather.

5.2 This test method will give an indication of the flexibility, adhesion, and strength of the finish on leather.

6. Apparatus

6.1 *Bally Flexometer,* conforming to DIN 53351, and operating at a rate of 100 cycles/min.

6.2 Die for cutting leather specimens to 45 × 70 mm.

7. Reagents and Materials

7.1 *Distilled or Deionized Water.*

8. Sampling, Test Specimens, and Test Units

8.1 Sample leather according to Practice D2813.

8.2 Cut two test pieces 45 × 70 mm from each sample using a die. One piece cut parallel and the other perpendicular to the backbone.

9. Conditioning

9.1 *Dry Leather Test*—Prepare the test pieces according to Practice D1610.

9.2 *Wet Leather Test*—Submerge the test pieces in distilled or deionized water for 20 ± 1 min. Blot excess water off using blotting paper or a paper towel.

9.3 *Other Test*—Conditioning, other than as prescribed, shall be documented in the results.

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[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] DIN 53351 *Dauerfaltverhalten* is published by DIN Deutsches Institut für Notmung and is available from ANSI, 11 W. 42nd St., 13th Floor, New York, NY 10036, and from Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112.

[4] Equipment conforming to DIN 53351 is available from Bally Trading Ltd. Prüfgeräteverkauf, CH-5012 Schönenwerd, Switzerland. Other manufacturers are Giuliani S.N.C., Via Cervino, 10 Torino, Italy, and Pellizzato Bruno, 31033 Salvarosa di Castelfranco Venito (Treviso), Borgo Mandolato 13, Italy.

10. Procedure

10.1 Bring the upper clamp of the Bally Flexometer to its uppermost position.

10.2 Fold the test piece in half along its major axis with the finished side toward the middle.

10.3 Insert the folded test piece in the top clamp, and tighten the clamp.

10.4 Fold the test piece around the top clamp and down.

10.5 Lightly pinch the leather at the top clamp to remove slack and to position the downward fold vertically in the bottom clamp. Tighten the bottom clamp. A properly mounted test piece will not have any tension between the top and bottom clamps.

10.6 Set the counter to zero and the cutoff to the desired number of cycles.

10.7 Examine the test piece using a magnifying glass with 6 ± 1× magnification.

11. Interpretation of Results

11.1 *Endpoint Determined after Fixed Number of Flexes*—Rank the damage according to Table 1.

TABLE 1 Rank of Damage

Rank	Description of Damage
1	No damage
2	Discoloration or thin cracks in top finish coat only
3	Cracks into base coats
4	Cracks large enough to see leather substrate below
5	Finish cracks and peels back or flakes off

12. Report

12.1 For an endpoint determined by 11.1, report the conditions used in Section 9, the number of cycles, and the rank in Table 1 of each test piece in the sample.

13. Precision and Bias

13.1 No information is presented about either the precision or bias of this test method for measuring flexibility and adhesion of finish on leather, since the test result is nonquantitative.

14. Keywords

14.1 Bally flexometer; finish adhesion; finish flexibility; finish strength; leather