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AMERICAN SOCIETY FOR TESTING AND MATERIALS
1916 Race St. Philadelphia, Pa 19103

Standard Test Method for Powdering of Floor Polish Films[1]

This standard is issued under the fixed designation D 2048; 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 a bench procedure for the determination of the degree of powdering of floor polishes under ambient conditions as well as conditions of low relative humidity.

1.2 *This standard does not purport to address all of the safety problems, 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 Document

2.1 *ASTM Standard:*

D 3153 Test Method for Recoatability of Water-Emulsion Floor Polishes[2]

3. Terminology

3.1 *Definition:*

3.1.1 *powdering*—partial or total disintegration of the polish film resulting in a fine, light colored material.

4. Significance and Use

4.1 This is a comparative test method. If this method does not indicate powdering, it is still possible that the product in actual use may powder.

5. Apparatus

5.1 *Textile Crockmeter*,[3] weighted with a 1-kg weight. The weight is placed directly over the abrasion dowel and attached with two-faced tape.

5.2 *Abrading Felt*—670 Kelly No. 720 billiard cloth cut into 50 by 50-mm (2 by 2-in.) squares.[4]

5.3 *Substrate*—Official Vinyl Composition Tile (OVCT)[5] shall be used in this test.

5.4 *Volumetric Pipet*, 2-mL.

5.5 *Cheesecloth Applicator*, washed to remove sizing; cut into 50-mm (2-in.) strips of four-ply cloth; folded twice.

5.6 *Relative Humidity and Temperature Indicator.*

5.7 *Glove Box*—An enclosure that houses the crockmeter keeping it in a constant humidity and temperature environment; features rubber glove inserts so that the tests may be run keeping the environment of the crockmeter constant.

5.8 *Desiccant*—Silica gel or calcium chloride.

5.9 *Salts for Constant Humidity Conditions*—$LiCl \cdot H_2O$, $CaCl_2 \cdot 6H_2O$, or $Mg(NO_3)_2 \cdot 6H_2O$.

NOTE 1—Saturated aqueous solutions of the following salts in contact with an excess of a definite solid phase of salt at the indicated temperatures and in an enclosed space will maintain the required constant humidities:
$LiCl \cdot H_2O$ at 25°C (77°F) yields 11.1 % relative humidity.
$CaCl_2 \cdot 6H_2O$ at 10°C (50°F) yields 38.0 % relative humidity.
$Mg(NO_3)_2 \cdot 6H_2O$ at 23.9°C (75°F) yields 42.9 % relative humidity.

5.10 *Fan*, small, electric.

5.11 *Metal Clip*, to hold the abrading felt on the crockmeter surface during testing.

6. Preparation of Test Sample

6.1 Clean the tile surface in accordance with Test Method D 3153, paragraph 9.1.2, to ensure removal of any coating present.

6.2 Pipet 2 mL of polish onto the center of the test panel. Place the cheesecloth into the polish and allow it to absorb the emulsion. Distribute the emulsion evenly over the surface; then draw the cheesecloth downward in smooth separate strokes, with no more pressure than is exerted by the weight of the hand, until the entire panel has been coated. If 304 by 304-mm (12 by 12-in.) tiles are used, pipet 3.6 mL of polish out the center of each tile.

6.3 Apply a second coat of polish 1 h after the first. Apply this coat in the same manner as the first coat.

6.4 One hour after the second coat of polish has dried, place one of the test tiles in the glove box in which the relative humidity is 10 to 15 %. The low humidity is obtained and controlled using silica gel or calcium chloride as the desiccant or by using a saturated salt solution with a small fan to circulate the air inside the box. Also place inside the glove box the crockmeter weighted with a 1-kg weight and the green felt test pads. Age the tiles and equipment for 24 h at 10 to 15 % relative humidity at 23.9 ± 1.1°C (75 ± 2°F).

6.5 Prepare additional test tiles in the same manner and dry for 24 h at 25 ± 1.1°C (77 ± 2°F) and 55 ± 3 % relative humidity.

NOTE 2—Prepared samples may also be tested at 10 ± 1.1°C (50 ± 2°F) and 38 ± 3 % relative humidity.

7. Procedure

7.1 Test the prepared samples at 23.9 ± 1.1°C (75 ± 2°F) and 10 to 15 % relative humidity and at 25 ± 1.1°C (77 ±

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[1] This test method is under the jurisdiction of ASTM Committee D-21 on Polishes and is the responsibility of Subcommittee D21.04 on Performance Tests.
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[2] *Annual Book of ASTM Standards*, Vol 15.04.

[3] Textile Crockmeter available from Atlas Electric Devices Co., Chicago, IL. Model CM-5 (motorized) is preferred for consistency of results.

[4] Abrading felt is available from any of the following sources: Bacon Felt Co., Inc., 103 Old Colony Ave., E. Tauton, MA, 02718; Commonwealth Felt Co., 211 Congress, Boston, MA; and Atlas Electric Devices Co., Chicago, IL.

[5] OVCT is Official Vinyl Composition Tile of the Chemical Specialties Manufacturers Association, Inc., 1913 Eye St., N.W., Washington, DC 20006.