



Standard Test Method for Soil Resistance of Floor Polishes¹

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1. Scope

1.1 This test method covers the determination of soil resistance of floor polishes on test tile only. A carpet covered roller is used to simulate the action of foot traffic. A synthetic soil is employed in conjunction with the roller.

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 1436 Test Methods for Application of Emulsion Floor Polishes to Substrates for Testing Purposes²

D 3153 Test Method for Recoatability of Water-Emulsion Floor Polishes²

E 97 Test Method for Directional Reflectance Factor, 45-deg 0-deg, of Opaque Specimens by Broad-Band Filter Reflectometry³

3. Significance and Use

3.1 This test method measures the ability of a floor polish to resist soiling by a standard soil that approximates dirt carried in from the outside.

4. Apparatus

4.1 *Official Vinyl Composition Tile (OVCT)*⁴—white, 304.8 by 304.8 mm (12 by 12 in.).

4.2 *Washability Apparatus*—The Gardner straight line washability machine.

4.3 *Roller*.⁴

4.4 *Carpeting*.⁵

4.5 *Soil*.⁶

4.6 *Reflectometer*, equipped with a search unit for measuring diffused reflectance and a green filter.

4.7 *Pipet*, 2 mL.

5. Procedure

5.1 Clean the test tile in accordance with Test Method D 3153, paragraph 9.1.2. Rinse well and allow to dry. Apply 2 mL of polish by following Method B of Test Methods D 1436. After 3 h, apply a second coat, also 2 mL. Age the tiles for 48 h at room temperature.

5.2 Sprinkle carefully, as evenly as possible, exactly 2 g of soil across that portion of the tile over which the roller will track. Run the machine for 300 cycles (600 passes). During the cycling, it may be necessary to occasionally brush the soil back onto the track as it will be scattered by the motion of the roller. At the end of the test, wipe the surface with tissue to remove any loose soil. Wipe firmly, but do not bear down.

NOTE 1—Before new carpeting on the roller is used for the first time, it should be “broken in” by running over a blank tile with approximately 4 g of soil for 500 or more cycles.

6. Evaluation of Results

6.1 Measure 45-deg, 0-deg directional (diffuse) luminous (green filter) reflectance with instrument of type specified in Test Method E 97. Set the clean tile, with two coats of polish, at 100 with the green filter. After the test, take five readings and average.

7. Calculation and Report

7.1 Calculate the quantitative degree of soiling as follows:

$$P = 100 - A \quad (1)$$

where:

P = percentage of soiling, and

A = average of five readings.

7.2 Results may also be reported in a comparative manner by both examining the soiled test polish and rating it *versus* a standard polish. In this case no glossmeter or reflectometer is required.

⁶ The sole source of supply of the apparatus known to the committee at this time is Rohm and Haas, Norristown and McKean Roads, Springhouse, PA 19477. If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend.

¹ This test method is under the jurisdiction of ASTM Committee D21 on Polishes and is the direct responsibility of Subcommittee D21.04 on Performance Tests.

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

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ The sole source of supply of the apparatus known to the committee at this time is Chemical Specialties Manufacturers Assn., 1913 Eye St., N.W., Washington, DC 20006. If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee, which you may attend.

⁵ Obtain tight weave short pile carpet from local store.

8. Precision and Bias

8.1 When performed as described, the test method will differentiate between polishes that resist dirt pick-up well and those that do not. The test is more accurate when performed with a control sample whose soil resistance is known. Replicate tests show good reproducibility.

8.2 Since there is no accepted reference material for deter-

mining the soil resistance of polish films, bias has not been determined.

9. Keywords

9.1 carpet; dirt; luminous; OVCT; polishes; reflectance; reflectometer; reflectometry; soiling; soil resistance; washability

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