Designation: D1793 – 17

Standard Test Method for Water Spotting of Emulsion Floor Polishes[1]

This standard is issued under the fixed designation D1793; 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 water spotting resistance of water emulsion floor polishes. The test method approximates the actual conditions of water spotting encountered in service.

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.*

1.3 *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 *ASTM Standards:*[2]

D1436 Test Methods for Application of Emulsion Floor Polishes to Substrates for Testing Purposes

3. Terminology

3.1 *Definitions:*

3.1.1 *water spotting*—any change in appearance of surface resulting solely from the action of cool water.

4. Significance and Use

4.1 This test method measures the ability of a floor polish to resist spotting by water. This test method may be used to measure the extent of damage by a large amount of water or in a separate method to measure the amount of damage by a small amount of water that has evaporated to dryness. Reference polishes should be used for comparison.

NOTE 1—The test method may induce slight whitening, color change, noticeable change in appearance, including removal of the film, which is caused by contact with water.

5. Apparatus

5.1 *Substrate*—The substrate to be used is vinyl composition tile (OVCT).[3]

5.2 *Distilled Water.*

5.3 *Pipet,* volumetric, 1-mL.

6. Preparation of Test Panel

6.1 Apply the emulsion floor polish on the black official vinyl composition tile panel in accordance with Method C (Manual Dip Method) of Test Methods D1436. After application, place the panel in a near vertical position and at the end of 10 min, wipe off the bead at the bottom of the panel and allow the panel to dry in a vertical position for 2 h at standard conditions of 50 ± 4 % relative humidity and 23.9 ± 1.1°C (75 ± 2°F). Apply a second coat in the same manner but reverse the panel so that the top is at the bottom. Drain in a near vertical position for 10 min, wipe off the bead, and continue drying in a vertical position at standard conditions for 24 h.

NOTE 2—The drying time, counted from the time of application of the second coat, may be varied from 24 h, but it should be remembered that some floor polishes which have suitable water spotting resistance during their normal service life do not achieve this resistance until 24 to 48 h after application.

7. Procedure

7.1 *Dynamic Test*—Standard conditions of 50 ± 4 % relative humidity and 23.9 ± 1.1°C (75 ± 2°F) should prevail in the test area. Place the panel in a horizontal position making sure that the top is level. Place 1 mL of distilled water near the center of the panel, and allow it to stand undisturbed for 1 h.

[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] 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] OVCT tile may be obtained through Armstrong Flooring from various home improvement stores. The following Armstrong tile substrates have been found to perform adequately for this test method: Armstrong Excelon Feature Tile: Black (56790), http://www.armstrong.com/commflooringna/product_details_toolbox_magnify.jsp?item_id=47394.

Use cheesecloth,[4] or a soft cotton cloth previously wet with distilled water and well wrung out so that it is just damp and wipe up the water from the panel. Rub a small piece of dry cloth very lightly over the area to remove the last of the dampness from the panel test area. Allow to stand undisturbed for 1 h and observe (Note 3).

7.2 *Static Test*—Standard conditions of 50 ± 4 % relative humidity and 23.9 ± 1.1°C (75 ± 2°F) should prevail in the test area. Place one drop of distilled water on the panel near the center. Allow the drop of water to evaporate to dryness (Note 4). Do not disturb this test area in any way with either a wet or dry cloth. Allow to stand 1 h after area is apparently dry and observe.

[4] The sole source of supply of the apparatus known to the committee at this time is Kendall Mills, Walpole, MA. 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.

NOTE 3—Hand buffing of the test area of the film is permitted prior to observation.

NOTE 4—The normal period of evaporation is from 1 to 3 h depending on such factors as the area wet by the drop of water, solubility characteristics of the film, etc.

8. Precision and Bias

8.1 This test method consistently differentiates the polish with poor water-spot resistance from polishes with good water-spot resistance with an acceptable differentiation of polishes that are very close together. It has been found to correlate well with floor experience.

8.2 Since there is no accepted reference material suitable for determining the bias for the procedure for measuring the water spotting of emulsion floor polishes, bias has not been determined.

9. Keywords

9.1 dynamic; emulsion; OVCT; polishes; static; water-spotting