



Designation: ~~D3153–87 (Reapproved 2008)~~ D3153 – 87 (Reapproved 2015)

Standard Test Method for Recoatibility of Water-Emulsion Floor Polishes¹

This standard is issued under the fixed designation D3153; 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 the effects of the application of a water-emulsion floor polish over a dried coating of the same polish. The method is designed for laboratory bench panel testing. A method is also provided for large area testing. A rating system is provided to indicate the acceptability of the polish based on recoatability performance.

NOTE 1—Recoatibility of a water-emulsion floor polish is a general-performance property, and the determination of it is dependent upon the observation of several other properties of the polish under the specific conditions expressed in this test method. This test method for recoatability is not designed for the evaluation of other properties, except as these properties relate to the recoatability of the specific polish being evaluated under the conditions of this test.

1.2 Gloss as observed herein extends only to freedom from loss of apparent visual gloss upon recoating, in the execution of this test method, and should this loss occur, it indicates a distortion of the property of gloss, by recoating.

1.3 A degree of recoatability failure may be reflected from a degree of leveling failure. The failure to level should be observed only if it is to be a part of the observation of recoatability.

1.4 *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

D2825 [Terminology Relating to Polishes and Related Materials](#)

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *beading*—the apparent failure of the liquid polish to wet out the surface as evidenced by the gathering of the polish into puddle-like beads.

3.1.2 *drag*—the resistance observed when the wet applicator is moved over the wet coating, when the polish is being spread.

3.1.3 *foaming*—the development and persistence of bubbles in the wet polish during application.

3.1.4 *ghosting*—the dissimilar appearance, in transparency or gloss, of a portion of the coating.

3.1.5 *streaking*—the apparent mark (or marks) that remains in the dried film showing the path followed by the applicator during the spreading of the liquid polish.

3.1.6 *whitening*—the development of a white color on or within a coating during the drying process, which reduces the functioning of a polish to beautify and (possibly) protect floors.

4. Summary of Test Method

4.1 The test method involves the application of floor polish using, but not restricted to, cheesecloth or lamb's wool applicator for spreading a measured amount of polish, over previously applied coatings of the polish. The test method includes a fast recoat cycle at 30 min which can also be used following manufacturer's directions and an extended recoat cycle of seven days. All tests are run on commercial floor tile.

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. Current edition approved March 1, 2008; Nov. 1, 2015. Published April 2008; November 2015. Originally approved in 1972. Last previous edition approved in 2002 as D3153 – 87 (2002); (2008). DOI: 10.1520/D3153-87R08; 10.1520/D3153-87R15.

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.

5. Significance and Use

5.1 The essential practical usage of water-emulsion floor polishes as renewable coatings to protect and beautify floors, depends upon satisfactory recoatability. This test method is useful both in product development and final product testing, as a means of evaluating recoatability.

6. Interferences

6.1 The presence of the factory finish, mold-release agents, or other foreign materials on the test surface, prior to the first application of the polish that is to be tested in accordance with this method, will cause irregular results. Abrading the surface of the test panel or area (for example, by cleaning with an abrasive pad) prior to the first application of the polish, will yield abnormal results. The cleaning formula listed in Footnote 3 should be used to remove the above mentioned coatings.

7. Apparatus

7.1 *Floor Tile Panels*,³black vinyl (homogeneous), 304.8 by 304.8 mm (12 by 12 in.).

7.2 *Floor Tile Area*,³black vinyl (homogeneous), 1.2 by 0.9 m (4 by 3 ft).

7.3 *Cheesecloth*, clean, completely free of sizing.⁴

7.4 *Pipet*, 5-mL, graduated in 0.2 mL.

7.5 *Graduate*, 50 mL.

7.6 *Applicator*, lamb's wool.⁵

7.6.1 Optional applicators include chenille pads and cotton and synthetic mops.

NOTE 2—Black vinyl composition floor tile panels or black vinyl composition floor tile area of the same dimensions as stated for the black vinyl (homogeneous) tile may be used. See Sections 9 and 11 of this method for information regarding the selection of test surfaces and reporting of results.

8. Conditioning

8.1 Average ambient conditions shall be equal for all polishes and surfaces used, and shall be free of drafts, and shall be between 15 and 30°C (59 and 86°F) with the relative humidity not in excess of 70 % or below 40 %.

9. Procedure

9.1 *Bench Panel Test*:

9.1.1 *Selection of Panels*—Select either five black vinyl (homogeneous) floor tile panels or five black vinyl composition floor tile panels, for each polish under test, basing selection on like-new condition. Do not intermix these two types of test surfaces in any one test sequence.

9.1.2 *Preparation of Test Panels*—Prepare five panels for each polish under test by cleaning with undiluted comparison cleaning solution described in Footnote 6.⁶ Soak the panels face to face for 20 min. Using a soft brush or clean cheesecloth, scrub thoroughly to remove all coatings, soil, etc. Rinse thoroughly with clear water and let dry completely.

9.1.3 *Application of Polish*—Prepare a swab 50.8 mm (2 in.) square and twelve plies thick, using clean cheesecloth, free of sizing. Immerse the swab in the test polish and squeeze out the excess. Pipet 2.6 ml (Note 3) of the test polish on to the surface of a test panel, which should be lying level on a horizontal surface, and spread the polish uniformly, using the swab previously prepared. Repeat for the other four panels. Observe the coatings on all five panels after they have dried for 30 min. or following manufacturers directions, under average ambient conditions. Note the similarity. If the appearance of the coating on all panels is not uniformly equal, discard these panels, and prepare a new group of coated panels using the above procedure.

NOTE 3—2.5 mL of polish are used for 12 by 12-in. (304.8 by 304.8-mm) panels. 1.4 mL of polish are used for 9 by 9-in. (228.6 by 228.6-mm) panels. Test can be performed using polish manufacturer's recommended rate of application.

9.1.4 *Application of Second Coat*—Thirty minutes after application of the first coat of polish, or following manufacturer's dry time recommendations, take two of the five panels and apply on each a second coat using the procedure detailed in 9.1.3 for applying and spreading the polish. Record the temperature and relative humidity. Observe and record any foaming of the polish and drag of the applicator during application and spreading. Observe and record any beading of the polish or required additional stroking with applicator to wet out the surface. Allow to dry 2 h, and observe and record any removal of the first coat, any

³ The floor tiles must be new or of like-new quality. New tile can be purchased through the Chemical Specialties Manufacturer's Association, 1001 Connecticut Ave., N.W., Washington, DC 20036.

⁴ Gauze pads, available from most pharmacies, are suitable.

⁵ Lamb's wool applicators sold commercially, having an area about 508 by 254 mm (2 by 10 in.) of lamb's wool mounted on a support of the same size and attached to a handle of suitable length, are recommended.

⁶ Composition of cleaning solution: MEA 1 %, trisodium phosphate dodecahydrate 10 %, propylene glycol monomethyl ether 6 %, octylphenoxy polyethoxy- ethanol (nonionic surfactant, 9 to 10 moles of ethylene oxide) 2 %, and distilled water 81 %. Compounding—Dissolve the TSP in the water. Add remaining ingredients and mix thoroughly till clear.