



Standard Test Method for Wet Adhesion of Latex Paints to a Gloss Alkyd Enamel Substrate¹

This standard is issued under the fixed designation D 6900; 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 method covers a procedure for measuring by scrubbing the adhesion of latex paints to glossy alkyd enamel substrates after exposure to wet conditions.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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:

D 523 Test Method for Specular Gloss²

D 714 Test Method for Evaluating Degree of Blistering of Paints²

D 2486 Test Methods for Scrub Resistance of Wall Paints²

D 3924 Specification for Standard Environment for Conditioning and Testing Paint, Varnish, Lacquers, and Related Materials²

3. Terminology

3.1 Definitions of Terms Specific to This Standard:

3.1.1 *wet adhesion, n*—the ability of a coating to resist removal by scrubbing from the surface beneath it after exposure to wet conditions and abrasion.

4. Summary of Test Method

4.1 Test paints, with optional control paint, are drawn down using a 7-mil clearance Dow applicator ($\sim 11 \text{ m}^2/\text{L}$) across a cured alkyd gloss enamel previously drawn down on a black or white plastic panel.

4.2 The drawdown films are allowed to dry under standardized conditions. Then, eighteen cuts are made to form a 6 by 10 cut block, creating sixty 6.4 mm (0.25 in) squares, in the center of each film with a razor blade.

4.3 The panels are then soaked for 30 min in ambient tap water. The panel is mounted in a washability tester and 20 mL of water are applied. The panel is then scrubbed for up to 500 cycles or until all of the squares within each block are completely removed.

5. Significance and Use

5.1 After application to either interior or exterior surfaces, latex paints may be subjected to conditions of high humidity, condensation, or precipitation. This may sometimes lead to a loss of adhesion to the substrate over which they have been applied. This method is a quantitative measure of the adhesion of latex paints to glossy substrates under such conditions.

6. Apparatus

6.1 Constant temperature/humidity room in accordance with Specification D 3924 [$23 \pm 2^\circ\text{C}$ ($73.5 \pm 3.5^\circ\text{F}$) and $50 \pm 5\%$ relative humidity].

6.2 *Drawdown Plate.*

6.3 *Straight Line Washability Tester and Accessories*, per Test Methods D 2486.

6.4 *Nylon Bristle Brush and Accessories* (nominal weight 455 g), having nylon brush bristles in 5/4 pattern extending 19 mm ($3/4$ in.) from block (as per Test Methods D 2486).

6.5 *Dow Film Applicator*, having 7-mil (0.18-mm) clearance by 5.2-in. (132-mm) width. applicator blade.

6.6 *Single-edge Razor Blade*, in safety holder.

6.7 *Metal Straight Edge*, (or appropriate guide).

7. Reagents and Materials

7.1 A ready-mix deep-tint alkyd gloss enamel with a 60° gloss of at least 65 as measured in accordance with Test Method D 523 (or alkyd as agreed upon by the purchaser and supplier).

7.2 Plastic test panels as used in Test Methods D 2486.³

8. Procedure

8.1 *Preparation of the Alkyd Substrate Panels*—Attach the plastic panel to the drawdown plate and drawdown the alkyd

¹ This test method is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials and Applications and is the direct responsibility of Subcommittee D01.42 on Architectural Coatings.

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² *Annual Book of ASTM Standards*, Vol 06.01.

³ This test method was qualified by a round robin using Leneta P-121-10N dull black plastic panels $6\frac{1}{2}$ by 17 in. by 10 mils (165 by 432 by 0.25 mm) in size, obtainable from the Leneta Co., 15 Whitney Rd, Mahwah, NJ 07430.