



Designation: D7514 – 14 (Reapproved 2022)

Standard Test Method for Evaluating Ink Stainblocking of Architectural Paint Systems by Visual Assessment¹

This standard is issued under the fixed designation D7514; 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 standard provides a method for evaluating the ability of an architectural paint system to block ink stains from markers and writing instruments from bleeding through a primer into a topcoat.

1.2 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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

D823 Practices for Producing Films of Uniform Thickness of Paint, Coatings and Related Products on Test Panels

D1640 Test Methods for Drying, Curing, or Film Formation of Organic Coatings

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

3. Terminology

3.1 *Definitions:*

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 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.

3.1.1 *stainblocking, n*—the ability of a paint or coating to prevent stains from bleeding through into the top finish.

4. Summary of Test Method

4.1 A substrate, typically a painted surface or an uncoated building material, is stained using a series of ink writing implements.

4.2 The stained substrate is coated with the test paints and allowed to dry for a specified interval.

4.3 The test paints are top-coated with a wall paint and the test paint/topcoat system is evaluated for stainblocking effectiveness.

5. Significance and Use

5.1 This standard may be used by paint companies and raw material suppliers to assess effectiveness of interior architectural primers for blocking stains from bleeding through to a topcoat.

5.2 In practice, different ink-stained substrates may give various results for stainblocking performance for a primer and topcoat system. As such, this test method may be used for a number of different ink-stained surfaces.

6. Apparatus

6.1 *Film applicator*, such as a drawdown bar, capable of applying 0.075 mm to 0.100 mm (3 mil to 4 mil) wet film thickness with a minimum film width as needed to cover the test area defined in 9.2.

6.2 *Ruler* or suitable straight edge instrument.

7. Reagents and Materials

7.1 *Substrate desired for testing*. The substrate must be able to accept a variety of ink marks and must have a uniform flat surface to enable paint films to be applied with a drawdown bar applicator. A sealed drawdown chart coated with a base paint is commonly used.

7.2 Staining media selected from among the following materials:

7.2.1 Permanent marker.

7.2.2 Washable marker.

7.2.3 Dry erase marker.

7.2.4 Ink pen.

7.2.5 Highlighter.

7.2.6 Other suitable writing implements as agreed upon between purchaser and seller.

NOTE 1—Parties involved in comparing ink stainblocking results between laboratories must ensure the selected writing implements are from a common supply. This is important as inks may produce different staining effects depending on their age, storage conditions, or manufactured lot. Additionally, it may be useful when replacing ink pens or markers with a new supply to conduct a comparison of old and new to validate if new ink stainblocking results will correlate to historical findings.

8. Hazards

8.1 The user of this standard should refer to appropriate MSDS for hazards associated with handling of paint samples or other laboratory items used as specified in this standard.

9. Procedure

9.1 Substrate Preparation:

9.1.1 If the primer/topcoat system is to be evaluated directly over an existing substrate that will accept ink stains, proceed directly to the ink-staining procedure in 9.1.3.

9.1.2 If no specific substrate is identified for the evaluation, a test substrate shall be prepared by coating a drawdown chart with a suitable basecoat as follows.

9.1.2.1 Select a paint to use as a basecoat. Any commercially available white flat wall paint may be used for this purpose.

NOTE 2—Because different basecoat paints will vary in how they accept the ink stains, performance can only be compared for tests using the same substrate system.

9.1.2.2 Apply the selected basecoat paint to an all-white sealed drawdown chart to achieve a wet-film thickness of approximately 0.075 mm (3.0 mils). The application shall be conducted in accordance with any appropriate practice described in Practices D823.

9.1.2.3 The basecoat paint must cover enough of the width of the drawdown chart to enable smooth passage of the drawdown bar for subsequent coats of test paint. The progression of paint applications for this standard beginning with the basecoat application is represented in Fig. 1.

9.1.2.4 Allow basecoat paint to dry overnight. Environmental conditions during drying of the basecoat paint are not critical to the end test result, however, the basecoat paint should be Dry-Through as described in Test Methods D1640 before continuing.

9.1.3 Using a straight edge as a guide, make a series of solid stain lines perpendicular to the direction of the drawdown with various ink markers and pens as specified in 7.2. It is generally

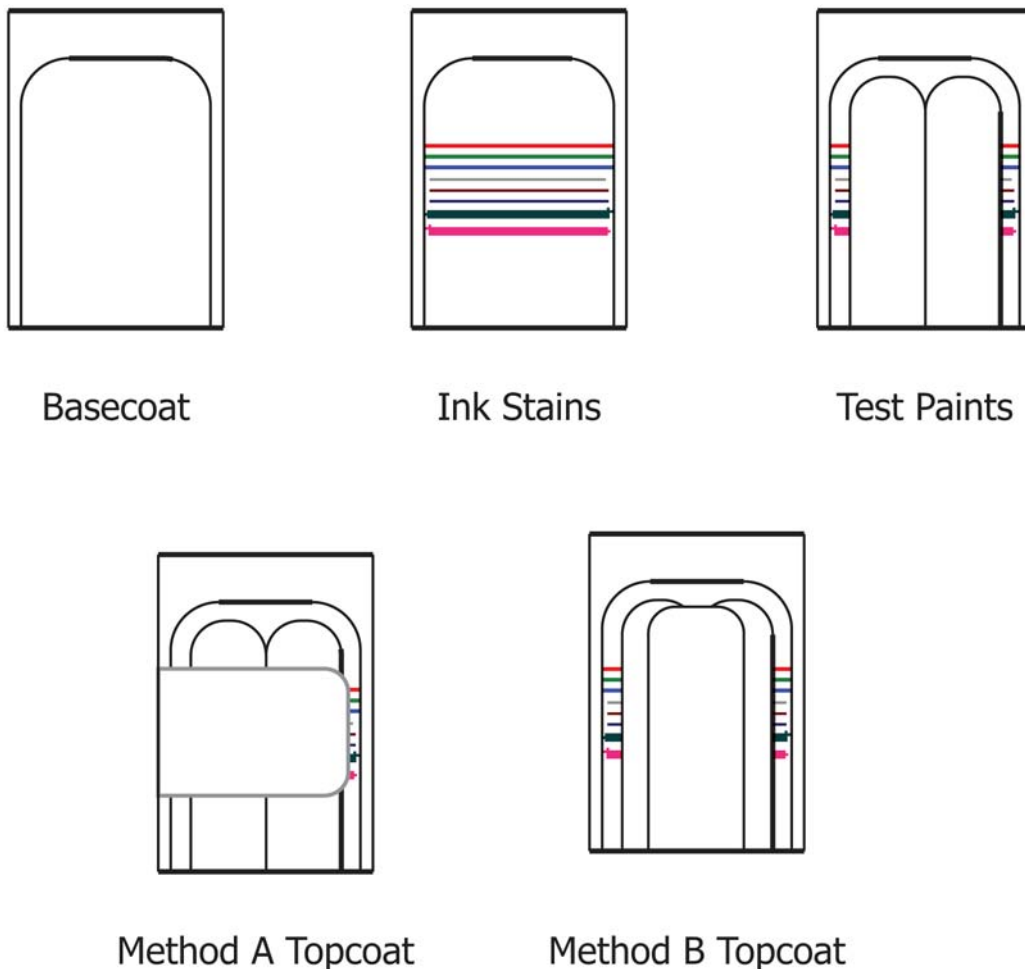


FIG. 1 Progression of Paint Applications