



Designation: D7786 – 13

Standard Test Method for Determining Enamel Holdout ¹

This standard is issued under the fixed designation D7786; 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 reappraisal. A superscript epsilon (ϵ) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 This standard provides a method for determining the holdout characteristics of a primer and topcoat coating application. A standard topcoat is used to determine the absorption characteristics of a primer. Enamel holdout can be measured as a difference in observed gloss of the topcoat over a primer, relative to the gloss of the same topcoat over a non-porous smooth surface.

1.2 The standard is written in the context that the user will be evaluating the enamel holdout characteristics of a primer. Alternatively, the standard may be used as a method to evaluate the enamel holdout characteristics of primer/topcoat system where the primer is constant and different topcoats are used as test paints.

1.3 This standard may also be used for evaluation of paints other than primers as the first coat. In this alteration the user can test the enamel holdout characteristics of a self primed topcoat, or use of any other type of paint as the primer followed by the use of a standard topcoat.

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

1.5 *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

D523 Test Method for Specular Gloss

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

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.

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

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:*

3.1.1 *enamel holdout, n*—the ability of a primer/topcoat system to retain gloss of the topcoat relative to gloss of the topcoat over a non-porous smooth surface.

3.1.2 *primer, n*—an undercoat of paint applied to prepare a surface for final painting.

3.1.3 *topcoat, n*—a coating, intended as the final coat of a finished system, which has the desired appearance and resistance properties as specified by the end user.

4. Summary of Test Method

4.1 A substrate, preferably a non-porous smooth drawdown card, is coated using a test primer and allowed to dry. The primer-coated substrate is then coated with the standard topcoat and allowed to dry (primed topcoat).

4.2 A non-porous smooth substrate is coated using only the standard topcoat and allowed to dry (unprimed topcoat).

4.3 Gloss measurements are taken over the primed topcoat and also over the unprimed topcoat. The difference in the gloss reading between the primed topcoat system and unprimed topcoat system is an indication of enamel holdout. Smaller differences indicate better enamel holdout.

5. Significance and Use

5.1 This standard may be used by paint companies and raw material suppliers to assess the interactions of primers and topcoats with respect to their ability to provide good enamel holdout. Primer/topcoat systems with the best enamel holdout will result in desirable gloss in the first coat of topcoat application.

6. Apparatus

6.1 *Film Applicator*, preferably a drawdown bar, capable of applying wet-film thickness of approximately 0.075 mm (3.0 mils).