Designation: D5326 – 94a (Reapproved 2013)

Standard Test Method for Color Development in Tinted Latex Paints[1]

This standard is issued under the fixed designation D5326; 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 a procedure for measuring color development in tinted latex paints, for the purpose of determining the efficiency of colorants, the tintability of base paints and the potential for poor color uniformity of applied paint films.

1.2 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D16 Terminology for Paint, Related Coatings, Materials, and Applications

D2244 Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates

D3924 Specification for Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials

D3925 Practice for Sampling Liquid Paints and Related Pigmented Coatings

E284 Terminology of Appearance

E1164 Practice for Obtaining Spectrometric Data for Object-Color Evaluation

E1331 Test Method for Reflectance Factor and Color by Spectrophotometry Using Hemispherical Geometry

E1345 Practice for Reducing the Effect of Variability of Color Measurement by Use of Multiple Measurements

E1347 Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry

E1349 Test Method for Reflectance Factor and Color by Spectrophotometry Using Bidirectional (45°:0° or 0°:45°) Geometry

3. Terminology

3.1 *Definitions:*

3.1.1 *color development, n*—the extent to which the colorant has achieved its full tinting potential, as evidenced by the color change or lack thereof, when the tinted paint is subjected to very strong shear stress.

3.1.2 *tintability, n*—the capability of a white or tint base paint to accept various colorants, as evidenced by the color development in the mixture.

3.1.2.1 *Discussion*—Sometimes called "color acceptance."

3.2 See Terminology D16, E284, and the *Paint/Coatings Dictionary*[3] for definitions of other terms used in this test method.

4. Summary of Test Method

4.1 The test paint is applied by drawing it down on a striped black and white sealed chart, at a film thickness sufficient to obtain full hiding.

4.2 A portion of the drawdown is subjected to strong shearing forces in a prescribed brushing procedure.

4.3 The CIELAB color difference between the drawdown and sheared areas after drying, is reported as a measure of deficiency in the color development of the test paint.

5. Significance and Use

5.1 A colorant sometimes fails to disperse completely in a base paint due to poor compatibility, which can be the fault of the colorant, the paint, or both. This will result in poor color development, which is readily manifested by the common procedure of applying the paint with a doctor blade and subjecting the drawdown to high shear stress by finger-rubbing a small area of the partially dry film. This tends to disperse

[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] Available from Federation of Societies for Coatings Technology (FSCT), 492 Norristown Rd., Blue Bell, PA 19422-2350, http://www.coatingstech.org.