



Standard Test Method for Instrumental Evaluation of Staining of Vinyl Flooring by Adhesives¹

This standard is issued under the fixed designation D5215; 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 describes procedures and instrumentation for accurately measuring the degree of staining that may occur in vinyl flooring as a result of its contact with adhesives. Measured color differences between vinyl flooring specimens contacting the adhesive and not contacting the adhesive are expressed in the CIELAB Color-Scale System.

1.2 This test method provides for visual evaluation of staining which may occur when vinyl flooring contacts adhesives.

1.3 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.

1.4 *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

D907 Terminology of Adhesives

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

E284 Terminology of Appearance

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

¹ This test method is under the jurisdiction of ASTM Committee D14 on Adhesives and is the direct responsibility of Subcommittee D14.70 on Construction Adhesives.

Current edition approved May 1, 2012. Published May 2012. Originally approved in 1991. Last previous edition approved in 2005 as D5215 – 93 (2005). DOI: 10.1520/D5215-93R12.

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.

G53 Practice for Operating Light-and Water-Exposure Apparatus (Fluorescent UV-Condensation Type) for Exposure of Nonmetallic Materials (Withdrawn 2000)³

3. Terminology

3.1 Definitions:

3.1.1 *chromaticity coordinates, n*—the ratio of each of the tristimulus values of a psychophysical color to the sum of the tristimulus values (see Terminology E284).

3.1.1.1 *Discussion*—Chromaticity coordinates in the CIE system of color specification are designated by x , y , and z .

3.1.2 *CIE 1976 $L^*a^*b^*$ uniform color space, CIELAB, (1, 2)⁴*, n —an approximately uniform color space, that is produced by plotting in rectangular coordinates the quantities L^* , a^* , b^* , from which the total difference between two colors may be calculated.

3.1.2.1 *Discussion*—The abbreviation CIELAB is recommended.

3.1.3 *color difference, n*—as visually perceived, the magnitude and character of the difference between two colors described by such terms as redder, bluer, lighter, darker, grayer, or cleaner (see Terminology E284).

3.1.4 *color difference, n*—as computed, the magnitude and direction of the difference between two psychophysical color stimuli and their components computed from tristimulus values, or by chromaticity coordinates and luminance factor, by means of a specified set of color-difference equations (see Terminology E284).

3.1.5 *CIELAB color difference equation, n (1, 2)*—the total difference ΔE^*_{ab} between two colors, each given in terms of L^* , a^* , b^* , calculated as follows:

$$\Delta E^*_{ab} = (\Delta L^{*2} + \Delta a^{*2} + \Delta b^{*2})^{1/2} \quad (1)$$

3.1.5.1 *Discussion*—The magnitude, ΔE^*_{ab} , gives no indication of the character of the difference since it does not indicate the relative quantity and direction of the hue,

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ The boldface numbers in parentheses refer to the list of references at the end of this test method.