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.

Designation: D7856 – 21

Standard Specification for Color and Appearance Retention of Solid and Variegated Color Plastic Siding Products using CIELab Color Space[1]

This standard is issued under the fixed designation D7856; 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 specification establishes requirements and test methods for the color and appearance retention of solid and variegated colored plastic siding products.

1.2 Color retention testing provides a method for estimating the acceptability of color change in a plastic siding product over an extended period of service.

NOTE 1—The exposure locations and durations specified in this standard have been shown to provide a good estimation of the color change in vinyl and polypropylene siding products over an extended period of service (see 2.2). It is expected that materials designed for the exposure conditions typical of exterior siding will respond similarly, but the applicability of this standard to other types of plastic siding has not been empirically established.

1.3 This specification is a successor to Specifications D6864 and D7251, which cover solid colors and variegated colors, respectively. This specification combines coverage for both, and has the same scope as those standards.

1.4 Specifications D6864 and D7251 use Hunter Lab color space for measurement of colors and evaluation of color change. These standards require classification of colors into regions based on the L, a, and b coordinates of the color, and evaluation of color changes is done using an ellipsoid value equation having unique coefficients for each color region. This specification uses CIE 1976 L* a* b* color space for measurement and evaluation of color change. Using this method, the need for separate color regions and evaluation equations has been eliminated.

1.5 Provisions for sample selection and preparation, and weathering are the same in this specification as in Specifications D6864 and D7251.

1.6 Characterization of color and appearance for variegated colors is complicated by the presence of multiple colors in a random pattern. The procedure for measuring variegated colors in this specification is based on using a template to reference six spots for color measurement.

1.7 This standard specifies outdoor weathering in three specific climate zones for a single 24-month exposure, and the color retention performance requirements under these conditions are established to be indicative of acceptable performance over an extended period of service. However, nothing in this standard precludes the use of different or additional climate zones, or different exposure durations, so long as those conditions are clearly specified in any reports.

1.8 *Units*—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.

1.9 *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.*

NOTE 2—There is no known ISO equivalent to this standard.

1.10 *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]

D660 Test Method for Evaluating Degree of Checking of Exterior Paints

D661 Test Method for Evaluating Degree of Cracking of Exterior Paints

D662 Test Method for Evaluating Degree of Erosion of Exterior Paints

D714 Test Method for Evaluating Degree of Blistering of Paints

[1] This test method is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.24 on Plastic Building Products.

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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.

*A Summary of Changes section appears at the end of this standard

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