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: D6037 – 21

Standard Test Methods for Dry Abrasion Mar Resistance of High Gloss Coatings[1]

This standard is issued under the fixed designation D6037; 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 procedures for evaluating the relative mar resistance of high gloss coatings. Two test methods are included. Test Method A uses a device that rotates the test specimen on a vertical axis, against the sliding rotation of two abrading wheels. Test Method B uses a device that reciprocates a specimen in a horizontal plane over a stationary wheel that has been fitted with abrasive paper and is advanced after each double stroke. Either method can be used to evaluate the dry abrasion mar resistance of coatings applied to planar, rigid surfaces. Each test method provides good discrimination between highly mar resistant coatings.

NOTE 1—The mar resistance values obtained by these test methods have no absolute significance. They should only be used to derive relative performance rankings for test panels that have been prepared from the series of coatings that are currently being evaluated. If mar resistance values are quoted between laboratories, it is essential that a common standard be measured and that the values be compared to that standard. Even then, the values should be used with caution.

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]

D523 Test Method for Specular Gloss

D609 Practice for Preparation of Cold-Rolled Steel Panels for Testing Paint, Varnish, Conversion Coatings, and Related Coating Products

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

D1005 Test Method for Measurement of Dry-Film Thickness of Organic Coatings Using Micrometers

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

D4060 Test Method for Abrasion Resistance of Organic Coatings by the Taber Abraser

D4449 Test Method for Visual Evaluation of Gloss Differences Between Surfaces of Similar Appearance

D7091 Practice for Nondestructive Measurement of Dry Film Thickness of Nonmagnetic Coatings Applied to Ferrous Metals and Nonmagnetic, Nonconductive Coatings Applied to Non-Ferrous Metals

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 of Terms Specific to This Standard:*

3.1.1 *mar resistance, n*—the ability of a coating to resist permanent deformation or fracture, resulting from the application of a dynamic mechanical force.

4. Summary of Test Method

4.1 The coatings that are being evaluated are applied at uniform dry film thickness to planar panels of uniform surface texture. After drying or curing, or both, the panels are marred.

[1] These test methods are under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and are the direct responsibility of Subcommittee D01.23 on Physical Properties of Applied Paint Films.

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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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