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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Test Method for Acid and Mortar Resistance of Factory-Applied Clear Coatings on Extruded Aluminum Products¹

This standard is issued under the fixed designation D 3260; 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.

^{ε1} NOTE—Unit of measurement statement and keywords were added editorially in June 1996.

1. Scope

1.1 This test method covers the evaluation of the mortar and acid resistance of clear protective coating factors applied to extruded aluminum substrates.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

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:

C 207 Specification for Hydrated Lime for Masonry Purposes²

D 823 Practices for Producing Films of Uniform Thickness of Paint, Varnish, and Related Products on Test Panels³

3. Summary of Test Method

3.1 Panels that have been buffed, cleaned, neutralized, and coated with the material being evaluated are exposed to freshly prepared mortar and to a hydrochloric acid solution.

4. Significance and Use

4.1 This test method will provide differentiation between types of coatings for acid and motor resistance providing the coating is applied in a uniform continuous film with a specified film thickness.

5. Reagents

5.1 *Acid*—Ten volume percent solution of commercialgrade hydrochloric acid (31.4 to 31.8 % HCl, 20°Bé) in distilled water.

5.2 *Cleaning Solution*—An alkaline cleaner⁴ in the concentration recommended by the manufacturer, usually 6 to 8 oz/gal (45 to 60 g/L) of water. The pH of the solution should be between 11.4 and 12.2.

5.3 *Lime*—Building lime complying with Specification C 207.

5.4 *Neutralizing Solution*—Prepare from a stable free-flowing, granular material having a chromate base⁵ as recommended by the supplier, usually at a concentration of 12 to 16 oz/gal (90 to 120 g/L) of water.

5.5 *Sand*—Dry sand capable of passing through a 10-mesh wire screen.

6. Test Panels

6.1 Panels of extruded aluminum alloy No. 6063-T5 with dimensions 6 by 3 by 1/4 in. (150 by 75 by 6.3 mm) shall be used for the test.

7. Procedure

7.1 Preparation of Test Panels:

7.1.1 Buff the aluminum panels and remove the buffing compound with an organic solvent.

7.1.2 Immerse the panels in cleaning solution (5.2) for 1 h at a temperature of 200°F (93°C).

7.1.3 Rinse the panels in tap water having a pH of 6.5 to 7.5 until the surface is free of water break. Use reagent water for rinsing if the pH of the tap water is outside the specified limits. The panels shall be free from evidence of corrosion or surface attack.

7.1.4 Immerse the panels in neutralizing solution (5.4) at 75 ± 2°F (24 ± 1°C) for 30 s to neutralize any retained alkalinity and to promote adhesion of the applied coatings.

7.1.5 Rinse the panels in reagent water and allow them to dry a minimum of 1 h before coating.

7.2 Coating of Test Panels:

7.2.1 Apply the coatings being evaluated to the test panels in a uniform continuous film by automatic spray equipment in accordance with Method A of Practices D 823.

7.2.2 For the mortar test, spray two panels on one side with two or more full wet coats to produce a minimum dry film

¹ This test method is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.55 on Factory-Applied Coatings on Preformed Products.

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² *Annual Book of ASTM Standards*, Vol 04.01.

³ *Annual Book of ASTM Standards*, Vol 06.01.

⁴ Diversey No. 808 has been found satisfactory for this purpose.

⁵ Diversey No. 814 has been found satisfactory for this purpose.