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Standard Practice for Outdoor Evaluation of Wet Stack Storage Conditions on Coil-Coated Metals[1]

This standard is issued under the fixed designation D7376; 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 procedure describes the practice for determining relative performance of coil-coated metal in an outdoor wet stack testing environment.

1.2 The purpose of this test is to evaluate relative wet stack corrosion resistance and blistering. Substrates, pretreatments, primers, topcoats, and backers may be evaluated.

1.3 This test simulates coil or stacked building panel bundle storage at a job site in wet outdoor conditions. The results from panels tested during the same time period may be used to compare products as an indicator of actual field performance. Environments with higher temperature and moisture levels accelerate degradation.

1.4 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

1.5 *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]

D610 Practice for Evaluating Degree of Rusting on Painted Steel Surfaces

D714 Test Method for Evaluating Degree of Blistering of Paints

D1654 Test Method for Evaluation of Painted or Coated Specimens Subjected to Corrosive Environments

G7 Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials

3. Summary of Practice

3.1 This practice is for the evaluation of relative wet stack corrosion resistance and blistering of coil-coated metal. The test is to be conducted in an outdoor environment with coil-coated panels placed on a flat surface while allowing exposure to environmental conditions such as rain, dew, humidity, and high temperatures.

3.2 Panels are evaluated periodically for corrosion and blistering as specified in 6.7.

4. Significance and Use

4.1 This practice provides for periodic testing to compare the relative performance of specific coatings, substrates, and/or pretreatments used on coil-coated metal for resistance to wet conditions during storage.

4.2 When performed in south Florida, this practice gives accelerated corrosion and blistering results relative to other locations within the continental United States.

4.3 This practice allows comparison of different coatings, substrates, and pretreatments when they are tested at the same time. The results must be considered relative and do not indicate absolute performance.

4.4 Because the outdoor environment shows year-to-year climatological, seasonal, and geographic variation, the absolute amount of degradation based on corrosion and blistering may vary (see Practice G7).

4.5 Temperature, rain, and humidity are important factors in wet stack corrosion. Corrosion and blistering will accelerate with increased temperature. The preferred test location is south of 27°N latitude in Florida. Other locations may be used, but differences in temperature and moisture must be considered, and the amount of corrosion and blistering are expected to vary considerably with

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[1] This practice is under the jurisdiction of ASTM Committee D01 on Paint and Related Coatings, Materials, and Applications and is the direct responsibility of Subcommittee D01.53 on Coil Coated Metal.

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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.