Designation: D 6665 – 01

Standard Practice for Evaluation of Aging Resistance of Pre-stressed Prepainted Metal in a Boiling Water Test[1]

This standard is issued under the fixed designation D 6665; 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 practice can be used to evaluate the resistance of a pre-stressed prepainted metal panel to cracking and loss of adhesion, or both, after accelerated aging by boiling water. Most coil coated products are formed and bent into specific shapes to produce a final product. These operations introduce stresses, which may be relieved by cracking of the coating after aging.

1.2 *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:*

D 2794 Standard Test Method for Resistance of Organic Coatings to the Effects of Rapid Deformation (Impact)[2]

D 4145 Standard Test Method for Coating Flexibility of Prepainted Sheet[3]

E 643 Standard Test Method for Ball Punch Deformation of Metallic Sheet Material[4]

3. Apparatus

3.1 Boiling water bath big enough to hold formed test specimens.

3.2 10× magnifier (optional).

3.3 Scotch #610 adhesive tape or equivalent.

4. Reagents

4.1 Deionized or other water, as agreed upon by customer and vendor.

5. Test Specimen

5.1 Bumped, bent, drawn or otherwise deformed samples, to be agreed upon between customer and vender. These should be prepared according to Test Methods D 2794, D 4145, and E 643, unless such methods do not exist—at which time the deformed samples should be prepared in a manner agreed upon by customer and vendor.

6. Procedure

6.1 Examine the test specimens for cracking and tape pick-off (adhesion loss), and record the results.

6.2 Place the formed test specimens in the boiling water bath for one (1) min. Different times may be used if agreed upon by customer and vendor.

6.3 Remove the test specimens and allow them to air dry and cool to room temperature.

6.4 Inspect the test specimens for cracking and adhesion loss, or both, then repeat the tape adhesion test.

7. Report

7.1 Report the observations regarding cracking and adhesion loss, or both.

7.2 The degree of cracking and tape pick-off allowed should be agreed upon by customer and vendor. Report substrate, coating system, production or preparation date, cracking and tape pick-off noted before boiling water aging, and cracking and tape pick-off noted after boiling water aging.

8. Keywords

8.1 aging; bend; boiling water; coil; cracking; deformation; drawn metal; fabrication; flexibility; impact; pick-off; prepaint; stresses

[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] *Annual Book of ASTM Standards*, Vol 06.01.

[3] *Annual Book of ASTM Standards*, Vol 06.02.

[4] *Annual Book of ASTM Standards*, Vol 03.01.