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AMERICAN SOCIETY FOR TESTING AND MATERIALS
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Standard Test Method for Exterior Durability of Factory-Primed Field Finished Wood Products[1]

This standard is issued under the fixed designation D 2830; 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 provides for the determination of the relative durability of factory-primed wood and wood-based substrates with representative finish coats when exposed to the weather.

1.2 The values stated in SI 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:*

D 659 Test Method of Evaluating Degree of Chalking of Exterior Paints[2]

D 660 Test Method for Evaluating Degree of Checking of Exterior Paints[2]

D 661 Test Method for Evaluating Degree of Cracking of Exterior Paints[2]

D 662 Test Method for Evaluating Degree of Erosion of Exterior Paints[2]

D 714 Test Method for Evaluating Degree of Blistering of Paints[2]

D 772 Test Method for Evaluating Degree of Flaking (Scaling) of Exterior Paints[2]

D 1006 Practice for Conducting Exterior Exposure Tests of Paints on Wood[2]

D 3274 Test Method for Evaluating Degree of Surface Disfigurement of Paint Films by Microbial (Fungal or Algal) Growth or Soil and Dirt Accumulation[2]

D 3359 Test Methods for Measuring Adhesion by Tape Test[2]

2.2 *US. Federal jStandards:*[3]

TT-P-96b

TT-P-102

3. Summary of Test Method

3.1 This test method consists of the atmospheric exposure of at least three types of conventional exterior white house paints applied to panels of factory-primed wood or wood-base substrates that have been exposed to atmospheric weathering conditions for periods of 0, 3, and 6 months.

3.2 The finish coats are applied by brush.

3.3 An additional panel of original factory-primed substrate, without finish coat, is exposed for the duration of the test.

4. Significance and Use

4.1 This test method is useful for evaluating the weathering performance of factory-applied primers on wood or wood-based substrates overcoated with a field-applied topcoat.

4.2 This test method is useful for evaluating the weathering compatibility of commercial topcoats over factory-applied primers on wood or wood-based substrates.

5. Apparatus

5.1 A vertical (90° from horizontal) test fence constructed in accordance with requirements of Practice D 1006.

6. Materials

6.1 *Exterior Finishes*:

6.1.1 *Paint, Oil, Alkyd*, fume resistant, conforming to Federal Specification TT-P-102.

6.1.2 *Resin Latex Paint, Synthetic*, of the emulsion type designed for use on exterior wood surfaces (such as TT-P-96b).

6.1.3 *Flat Alkyd, Solvent-Thinned, Exterior*.

6.1.4 Any other type of exterior finish paint mutually agreed upon.

6.2 *Bristle Brush (Natural or Synthetic)*.

7. Procedure

7.1 The minimum length of panel is 910 mm (3 ft) with a minimum width of 150 mm (6 in.) of a particular preprimed substrate.

7.2 Mark off one third of the panel area (in a manner which will not damage the prime coat) and apply by brush to the right one third panel area a single coat of one of the white finishes at a spreading rate as recommended by the manufacturer or by

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[1] This test method is under the jurisdiction of ASTM Committee D-1 on Paint and Related Coatings, Materials, and Applicationsand is the direct responsibility of Subcommittee D01.52on Factory-Coated Wood Products.

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

[3] Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

the appropriate Federal specification. Paint the panel and dry indoors for 7 days under prevailing conditions of temperature and humidity, taking care to avoid exposure to drafts or excessive heat.

7.3 Determine the spreading rate of the finish paints by the weight difference method or other suitable methods. Record the spreading rate, film thickness, and method used.

7.4 Fasten the panel to a south exposure rack.

NOTE 1—Panel mounting should be the same as normal practice for the mounting of a particular substrate.

7.5 After 3 months (±1 week) of exposure of the panel, coat the center one third section adjacent to the section already coated with exterior finish as specified in 7.2.

NOTE 2—If possible, the application should be made in the laboratory as in 6.2. No washing or cleaning should be done to the surface to be coated.

7.6 At completion of 6 months (±1 week) of exposure to the weather, apply finish coat to the final third section of the panel as specified in 7.2.

7.7 Examine each section of the panels visually for appearance, mildew, and film failure at intervals of not more than 3 months (preferably 1 month) beginning 1 month after initial exposure.

7.8 At the end of each 6 months exposure of a topcoated section, test for intercoat adhesion between the factory-applied primer and the topcoat as follows:

7.8.1 Cut a small "X" in the film with a sharp knife or razor blade. The cuts should penetrate the substrate slightly but not distort the film unduly. Apply pressure-sensitive tape[4] so that it crosses the "X" in the direction of the acute angles. Press the tape on carefully with the flat surface of the fingernail or with a rubber eraser. Remove the tape with a quick yank, at a 90° angle to the surface.

7.9 Exposure of the topcoated preprimed substrate may be terminated 12 months after application of the finish coat to the third section. Additional exposure may be agreed upon between buyer and seller.

8. Report

8.1 Report the following properties:
8.1.1 *Chalking*—Method D 659.
8.1.2 *Checking*—Test Method D 660.
8.1.3 *Cracking*—Test Method D 661.
8.1.4 *Erosion*—Test Method D 662.
8.1.5 *Flaking*—Test Method D 772.
8.1.6 *Blistering*—Test Method D 714.
8.1.7 *Intercoat Adhesion*—Test Methods D 3359.
8.1.8 *Mildew*—Test Method D 3274.

9. Precision and Bias

9.1 Varying weather conditions from year to year and at several exposure sites preclude development of precision and bias data.

10. Keywords

10.1 adhesion; factory primed wood; primer performance; topcoat compatibility; weathering

[4] The sole source of supply of the No. 600 cellophane tape known to the committee at this time is 3M Company. If you are aware of alternative suppliers, please provide this information to ASTM Headquarters. Your comments will receive careful consideration at a meeting of the responsible technical committee,[1] which you may attend. Tape shall be stored in an airtight container and shall not be more than 6 months old.