



Standard Practice for Conducting Exterior Exposure Tests of Paints on Wood¹

This standard is issued under the fixed designation D1006/D1006M; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope*

1.1 This practice covers procedures to be followed for direct exposure of house and trim paints on new, previously unpainted wood materials to the environment. When originators of a weathering test have the actual exposure conducted by a separate agency, the specific conditions for the exposure of test and control specimens should be clearly defined and mutually agreed upon between all parties.

1.2 This standard covers specimen preparation including the application of the test paint to the wood substrate.

1.3 The values stated in either SI units or inch-pound units are to be regarded separately as standard. The values stated in each system may not be exact equivalents; therefore, each system shall be used independently of the other. Combining values from the two systems may result in non-conformance with the standard.

1.4 *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

D358 Specification for Wood to Be Used as Panels in Weathering Tests of Coatings

E41 Terminology Relating To Conditioning

G7 Practice for Atmospheric Environmental Exposure Testing of Nonmetallic Materials

G113 Terminology Relating to Natural and Artificial Weathering Tests of Nonmetallic Materials

G147 Practice for Conditioning and Handling of Nonmetallic Materials for Natural and Artificial Weathering Tests

3. Terminology

3.1 *Definitions*—The definitions given in Terminologies **E41** and **G113** are applicable to this practice.

4. Significance and Use

4.1 The procedure described in this practice is intended to aid in evaluating the performance of house and trim paints to new, previously unpainted wood.

4.2 The relative durability of paints in outdoor exposures can be very different depending on the location of the exposure because of differences in solar radiation, time of wetness, temperature, pollutants, and other factors. Therefore, it cannot be assumed that results from one exposure in a single location will be useful for determining relative durability in a different location. Exposures in several locations with different climates which represent a broad range of anticipated service conditions are recommended.

4.2.1 Because of year-to-year climatological variations, results from a single exposure test cannot be used to predict the absolute rate at which a material degrades. Several years of repeat exposures are needed to get an “average” test result for a given location.

4.2.2 Solar radiation varies considerably as function of time of year. This can cause large differences in the apparent rate of degradation in many paints. Comparing results for materials exposed for short periods (less than one year) is not recommended unless materials are exposed at the same time in the same location.

4.3 The Significance and Use section in Practice **G7** addresses many variables to be considered in exterior exposure tests.

5. Location of Test Sites and Exposure Orientation

5.1 *Test Sites*—The climatic conditions of the test sites should be representative of those of the area in which the paints are to be used. The type and rate of failure of a paint film will vary when exposed to different combinations of climatic and atmospheric conditions. For reliable results, exposure sites should be selected that are representative geographically,

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 **D01.27** on Accelerated Testing.

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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.