NOTICE: This standard has either been superseded and replaced by a new version or withdrawn.
Contact ASTM International (www.astm.org) for the latest information

Designation: D358 – 98 (Reapproved2012)$^{\varepsilon 1}$

# Standard Specification for Wood to Be Used as Panels in Weathering Tests of Coatings[1]

This standard is issued under the fixed designation D358; 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.*

$\varepsilon^1$ NOTE—Corrections to the unit conversion for 10 mm were made in July 2012.

## 1. Scope

1.1 This specification designates woods for weathering tests of exterior solvent-borne or water-borne paints and other materials of similar purpose. Such tests may include either outdoor exposure tests or accelerated laboratory tests. It is the purpose of this specification to minimize the influence of variation of wood of a given species on test results.

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

## 2. Referenced Documents

2.1 *ASTM Standards:*[2]

D3924 Specification for Environment for Conditioning and Testing Paint, Varnish, Lacquer, and Related Materials

## 3. General Considerations

3.1 A variety of different species should be used for testing finishes because of the wide variations in the anatomy and the density between wood species. These factors have tremendous influences on finish performance. Latewood band width and density are especially important to finish performance, and these parameters vary significantly between wood species. Cedar and redwood have relatively low proportions of hard summerwood distributed in narrow bands and contain extractives that discolor some paint films. Southern pine has a large proportion of hard summerwood in wide bands.

3.2 The angle between the growth rings and the surface of the specimen is very critical to finish performance. Commercial practice utilizes the following classification system. Boards in which growth forms an angle of less than 30° with the wide surface of the piece are said to be flat-sawn or flat-grained; those with the rings intersecting at angles between 30° and 60° are termed bastard-sawn; and those with angles greater than 60° are termed quarter-sawn, edge grain, or vertical grain.

3.3 Some industrial processors of wood products may utilize wood at moisture levels significantly higher than the equilibrium moistures cited in this specification. In these specific cases, appropriately higher moisture content panels may be prepared for testing of factory applied finishes.

### WESTERN RED CEDAR

## 4. Species

4.1 The material for test panels shall be western red cedar (*Thuja plicata*).

## 5. Weight per Volume

5.1 When the wood is in equilibrium with air at 60 to 65 % relative humidity and 21 ± 0.5°C (70 ± 1°F) it shall weigh 350 to 370 kg/m$^3$ (22 to 23 lb/ft$^3$) or at 50 ± 5 % relative humidity and 23 ± 2°C (73.5 ± 3.5°F), which are specified in Specification D3924 as standard conditions for testing paint and related coatings, it shall weigh 343 to 359 kg/m$^3$ (21.4 to 22.4 lb/ft$^3$).

NOTE 1—The density requirement is to eliminate wood specimens that vary greatly from the average for that species. Either set of conditions may be used to establish the density. At 60 to 65 % relative humidity wood has a moisture content of approximately 12 % while at 45 to 55 % relative humidity it contains 9 to 10 %. The former is closer to the moisture content of wood exposed to most exterior climatic conditions.

## 6. Character of Wood

6.1 The wood shall be heartwood having edge grain and shall be free of knots and other defects. The color of the wood shall be uniform across each panel with no streaks that are excessively light or dark. The number of annual growth rings per inch along the radius of the log from which the wood was obtained shall not be less than ten. The surfaces shall be

[1] This specification is under the jurisdiction of ASTM Committee D01 and is the direct responsibility D01.42 on Architectural Coatings.

Current edition approved July 1, 2012. Published August 2012. Originally approved in 1933. Last previous edition approved in 2006 as D358 – 98 (2006). DOI: 10.1520/D0358-98R12E01.

[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.

Copyright © ASTM International, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428-2959. United States