



Designation: D7433 – 19

# Standard Test Method for Measuring Surface Water Absorption of Overlaid Wood-Based Panels<sup>1</sup>

This standard is issued under the fixed designation D7433; 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 ( $\epsilon$ ) indicates an editorial change since the last revision or reapproval.

## 1. Scope

1.1 This test method covers the determination of the quantity of water absorbed in a specified time through the surface of an overlaid wood-based panel. The test method measures the rate of water gain within a controlled surface area of the overlaid panel surface when exposed to standing water. The method was adapted from the principles of Test Method D5795.

1.2 This test method is applicable to various overlaid wood-based panels including, but not limited to, plywood (such as MDO grades and HDO grades referenced in PS 1–09), oriented strand board, medium density fiberboard, particleboard, and hardboard.

1.3 This test method does not address sampling procedures, number of replications nor performance criteria since those details vary depending upon the purpose of the testing and the type of product. The method is specific to the panel surface and does not evaluate water absorption or edge swell that may occur along panel edges. The method does not consider the variables related to in-service moisture conditions and therefore does not claim to directly relate to water absorption that may occur in actual panel use situations.

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

1.5 *This test method 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 test method to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recom-*

*mendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

## 2. Referenced Documents

2.1 *ASTM Standards:*<sup>2</sup>

D5795 Test Method for Determination of Liquid Water Absorption of Coated Wood and Wood Based Products Via “Cobb Ring” Apparatus

D4442 Test Methods for Direct Moisture Content Measurement of Wood and Wood-Based Materials

2.2 *Other Standards:*<sup>3</sup>

PS 1–09 U.S. Voluntary Product Standard, Structural Plywood

## 3. Significance and Use

3.1 Water absorptiveness through the surface of an overlaid panel is a function of various characteristics of the overlay and substrate, including overlay resin content, thickness of the overlay, porosity, and permeability.

3.2 This test method is useful in comparing the water absorption characteristics of different overlaid panel products. The results from this test method are influenced by both the performance of the overlay system and the panel substrate. Therefore, the results are appropriate for comparison of the relative performance of an overlay system when tested over similar or matched panel substrates.

NOTE 1—Panel attributes that may influence water absorption include, but are not limited to, panel type, wood species, face veneer thickness and grade, preoverlay surface treatment such as sanding, particle geometry and compaction ratio.

## 4. Test Apparatus and Materials

4.1 *Rings*, formed by cut sections of metal or plastic pipe with inside diameter of approximately 108 mm (4.25 in.) which can be sealed to the overlaid panel with silicone or elastomeric sealant.

<sup>2</sup> For referenced ASTM standards, visit the ASTM website, [www.astm.org](http://www.astm.org), or contact ASTM Customer Service at [service@astm.org](mailto:service@astm.org). For *Annual Book of ASTM Standards* volume information, refer to the standard’s Document Summary page on the ASTM website.

<sup>3</sup> Available from National Institute of Standards and Technology (NIST), 100 Bureau Dr., Stop 1070, Gaithersburg, MD 20899-1070, <http://www.nist.gov/standards>

<sup>1</sup> This test method is under the jurisdiction of ASTM Committee D07 on Wood and is the direct responsibility of Subcommittee D07.03 on Panel Products.

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