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

Designation: D4444 – 13 (Reapproved 2018)

Standard Test Method for Laboratory Standardization and Calibration of Hand-Held Moisture Meters[1]

This standard is issued under the fixed designation D4444; 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 U.S. Department of Defense.

1. Scope

1.1 This test method applies to the measurement of moisture content (MC) of solid wood products, including those containing additives (that is, chemicals or adhesives) for laboratory standardization and calibration of hand-held moisture meters

1.2 This test method makes no distinction between meter measurement technologies for standardization and calibration requirements. Provision is made for test specimen size to accommodate specific meters. Appendix X1 provides an explanatory discussion and history corresponding to the mandatory sections. Fundamental measurement technologies are described in Appendix X2 when available.

1.2.1 Meters employing differing technologies may not provide equivalent readings under the same conditions. When this test method has been applied, it is assumed that the referenced meter is acceptable unless otherwise specified. Meters shall be calibrated with respect to MC by direct measurement as determined by Test Methods D4442.

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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

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

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1990 Practice for Establishing Allowable Properties for Visually-Graded Dimension Lumber from In-Grade Tests of Full-Size Specimens

D2915 Practice for Sampling and Data-Analysis for Structural Wood and Wood-Based Products

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

D4933 Guide for Moisture Conditioning of Wood and Wood-Based Materials

D5536 Practice for Sampling Forest Trees for Determination of Clear Wood Properties

D7438 Practice for Field Calibration and Application of Hand-Held Moisture Meters

2.2 *Other ASTM Sources:*

ASTM Standards on Precision and Bias for Various Applications, 1992

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *conductance meters*—Conductance meters are those that measure predominantly ionic conductance between points of applied voltage, usually direct current. Direct-current conductance meters are commonly referred to as "resistance" meters. Most commercial conductance meters are high-input impedance (about 10^{12} Ω), wide-range (10^4 to 10^{12} Ω) ohmmeters.

3.1.2 *capacitive-admittance meters*—Capacitive-admittance meters transmit electromagnetic wave energy into the wood to detect the influence of moisture in the wood on these waves as

[1] This test method is under the jurisdiction of ASTM Committee D07 on Wood and is the direct responsibility of Subcommittee D07.01 on Fundamental Test Methods and Properties.

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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.

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