Designation: D 6782 – 04

Standard Test Methods for Standardization and Calibration of In-Line Dry Lumber Moisture Meters[1]

This standard is issued under the fixed designation D 6782; 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 These test methods apply to instruments designed to detect, or measure, moisture in wood which has been dried below the fiber saturation point. The purpose of these tests is to provide a unified standard against which such systems can demonstrate their suitability for their intended use (see Appendix X1).

1.2 The standard is configured to support tests by moisture meter manufacturers as well as end-users of such systems, therefore the text follows two tracks (see Appendix X2).

1.3 Test methods specified for manufacturers are generally designed for laboratory settings and are intended to provide a standard against which a manufacturer certifies calibration and general system conformance.

1.4 Test methods for end-users are generally designed for field settings and are intended as a standardized set of procedures for determining the suitability of a specific machine for a particular use.

1.5 Applications such as lumber marking or sorting systems utilizing the output of the in-line meter are not part of this standard.

1.6 *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]

D 1990 Practice for Establishing Allowable Properties for Visually-Graded Dimension Lumber from In-Grade Tests of Full-Size Specimens

D 2395 Test Methods for Specific Gravity of Wood and Wood-Base Materials

D 2915 Practice for Evaluating Allowable Properties for Grades of Structural Lumber

D 4442 Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials

D 4444 Test Methods for Use and Calibration of Hand-Held Moisture Meters

D 4933 Guide for Moisture Conditioning of Wood and Wood-Base Materials

D 5536 Practice for Sampling Forest Trees for Determination of Clear Wood Properties

3. Terminology

3.1 *Definitions of Terms Specific to This Standard:*

3.1.1 *accept/reject meters*, *n*—meters that permit identification and/or sorting of pieces into moisture content classes. The simplest design has one set point or target level to separate "wetter" from "drier" pieces. Often the meters described in 3.1.5 may be operated as accept/reject meters.

3.1.2 *field*, *n*—an environment usually not meeting the criteria of 3.1.4. This is often a meter installation at the wood processing facility where the meter and the lumber are subject to the process environment of mill production.

3.1.3 *flow*, *n*—a term that describes the movement and orientation of the piece with respect to the sensing area.

3.1.3.1 *longitudinal-flow*—in this flow arrangement, pieces pass lengthwise through the sensing area. All or some portion of the length may be sensed.

3.1.3.2 *transverse-flow*—in this flow arrangement, the pieces pass crosswise through the sensing area. Transverse meters frequently have more than one sensing area, consequently, the meter may sense more than one area of the piece even if the entire piece is not sensed.

3.1.4 *laboratory*, *n*—an environment under which conditions of temperature and moisture content can be controlled within stated tolerances and which permit use of carefully selected and controlled specimens.

3.1.5 *meters*, *n*—in-line (or in process) moisture sensors designed to respond in one pass to the moisture content of a piece passing the sensing area.

3.1.5.1 *Discussion*—Meters are typically a system consisting of one or more fixed sensing areas (termed heads) and a processing/readout console that may be remote from the region

[1] These test methods are under the jurisdiction of ASTM Committee D07 on Wood and are 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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