



Standard Test Methods for Nondestructive Evaluation of Wood-Based Flexural Members Using Transverse Vibration¹

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INTRODUCTION

Nondestructive testing methods are used to determine the physical and mechanical properties of wood-based materials. These test methods help ensure structural performance of products manufactured from a variety of wood species and quality levels of raw materials. These test methods also assist in evaluating the influence of environmental conditions on product performance.

These test methods for transverse vibration nondestructive testing of wood-based materials adopt methods used by various testing and research organizations. These test methods will yield results comparable to traditional methods, permitting standardization of results, interchange and correlation of data, and establishment of a cumulative body of information on wood species and products of the world.

1. Scope

1.1 These test methods cover the determination of the flexural stiffness and modulus of elasticity (E) properties of wood-based materials by nondestructive testing using transverse vibration in the vertical direction.

1.2 The test methods are limited to specimens having solid, rectangular sections.

1.3 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered 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

¹ These test methods are 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.

D9 Terminology Relating to Wood and Wood-Based Products

D198 Test Methods of Static Tests of Lumber in Structural Sizes

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

D4761 Test Methods for Mechanical Properties of Lumber and Wood-Base Structural Material

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

E4 Practices for Force Verification of Testing Machines

E1267 Guide for Astm Standard Specification Quality Statements (Withdrawn 1996)³

2.2 Other Standard:

ISO 7626/1 Vibration and Shock-Experimental Determination of Mechanical Mobility—Part 1: Basic Definitions and Transducers⁴

3. Terminology

3.1 *Definitions*—See Terminology D9 and Test Methods D198.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.