



Designation: D6958 – 20

Standard Test Methods for Evaluating Side-Bonding Potential of Wood Coatings¹

This standard is issued under the fixed designation D6958; 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 reappraisal. A superscript epsilon (ε) indicates an editorial change since the last revision or reappraisal.

1. Scope

1.1 These test methods describe an evaluation procedure for the determination of undesirable side-bonding of coatings for wood flooring. They provide two mechanical properties tests for the quantitative determination of the cohesive strength of wood coatings (tensile and lap shear).

1.2 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.

1.3 *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

D9 Terminology Relating to Wood and Wood-Based Products

D2370 Test Method for Tensile Properties of Organic Coatings

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

E4 Practices for Force Verification of Testing Machines

2.2 Maple Flooring Manufacturers Association (MFMA):³

Grading Rules for MFMA Hard Maple

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.

³ Available from the Maple Flooring Manufacturers Association, Inc. (MFMA), 1425 Tri State Parkway, Suite 110, Gurnee, IL 60031, <http://www.maplefloor.org>.

2.3 National Wood Flooring Association (NWFA):⁴

Technical Publication C200 Problems, Causes, and Cures

3. Terminology

3.1 **Definitions**—For general definitions of terms related to wood, refer to Terminology D9.

3.2 Definitions of Terms Specific to This Standard:

3.2.1 **panelization**—condition caused by side-bonding, excessive installation adhesive, substrate movement, or other factors where localized gaps develop between flooring strips while adjacent boards remain in tight contact acting as a composite panel instead of individual strips.

3.2.2 **panelization failure**—condition where localized excessive gaps beyond specified limits develop between some strip flooring boards due to panelization.

3.2.3 **percent wood failure**—rupturing of wood fibers in strength tests on bonded specimens usually expressed as the percentage of total area involved which shows such failure and is the inverse of adhesive failure.

3.2.4 **side-bonding**—bonding of adjacent strips of wood flooring caused by the floor coating resulting in panelization.

3.2.4.1 **Discussion**—Side-bonding is most commonly caused when installed wood flooring boards have become adhered to each other. Finish materials, especially water-based products, that have seeped between the boards, and the glue used on the flooring tongue-and-groove joint are two common sources of side-bonding. Side-bonding wood failure can occur as side-bonded flooring boards shrink due to loss of moisture after installation.

3.2.5 **side-bonding wood failure**—failure of the wood within a strip, as in classic wood failure, when the movement of the strip within the floor is restrained from moisture-related movement by side-bonding and the resulting stress overcomes the tensile strength perpendicular to the grain of the wood strip.

3.2.6 **tensile stress (nominal)**—as used in Test Method D2370, the load per original unit area at which a specimen fails or yields in a tension (pull) test.

⁴ Available from the National Wood Flooring Association (NWFA), 111 Chesterfield Industrial Boulevard, Chesterfield, MO 63005, <http://www.nwfa.org>