



Designation: D5824 – 98 (Reapproved 2023)

Standard Test Method for Determining Resistance to Delamination of Adhesive Bonds in Overlay-Wood Core Laminates Exposed to Heat and Water¹

This standard is issued under the fixed designation D5824; 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 This test method provides a procedure to determine the quality of bond between an overlay and a wood core in an adhesively bonded laminate. The quality of bond is determined by measuring the resistance to delamination of the adhesively bonded laminate when tested under specific conditions of preparation, conditioning, and testing. Such products include, but are not limited to, window and door components, such as stiles and rails, and other overlaid panels. Typical wood-based cores are finger-jointed lumber, particleboard, oriented strand board, and hardboard. Typical overlays would be veneer, high-pressure laminate, high-density polyethylene, and fiberglass-reinforced plastic.

1.2 Adhesive bond performance as measured by resistance to delamination in this test method is suitable for use in adhesive product development, manufacturing quality control, and monitoring bonding processes.

1.3 This test method does not provide guidance for determining bond line performance for plywood products.

1.4 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.

1.5 *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.*

1.6 *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:*²

D907 Terminology of Adhesives

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

D5266 Practice for Estimating the Percentage of Wood Failure in Adhesive Bonded Joints

E6 Terminology Relating to Methods of Mechanical Testing

E41 Terminology Relating to Conditioning (Withdrawn 2019)³

E177 Practice for Use of the Terms Precision and Bias in ASTM Test Methods

E691 Practice for Conducting an Interlaboratory Study to Determine the Precision of a Test Method

3. Terminology

3.1 *Definitions:*

3.1.1 Certain terms in this test method are defined in Terminologies D907, E6, and E41.

3.1.2 *delamination, n*—the separation of layers in a laminate because of failure of the adhesive, either in the adhesive itself or at the interface between the adhesive and the adherend. (See Terminology D907.)

3.1.3 *overlay, n*—a uniform layer of material, usually in the form of a sheet, adhesively bonded to an adherend with the purpose of improving the appearance or physical properties of the laminate.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *edge, n*—in an adhesively bonded laminate, the dimension along its length [and parallel to the grain] where the overlay is bonded to the core.

¹ This test method is under the jurisdiction of ASTM Committee D14 on Adhesives and is the direct responsibility of Subcommittee D14.30 on Wood Adhesives.

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