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100 Barr Harbor Dr., West Conshohocken, PA 19428
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Standard Specification for Adhesives Used in Laminate Joints for Nonstructural Glued Lumber Products¹

This standard is issued under the fixed designation D 3110; 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.

INTRODUCTION

In 1989, Subcommittee D14.30 made the decision to split Specification D 3110 into two standards, one addressing finger joints and the other laminate joints. Specification D 5572 has been approved.

The laminate joint portion, Proposed Standard Specification for Adhesive Used for Laminate Joints in Nonstructural Lumber Products, is in the balloting process. Until the standard has been approved, Specification D 3110 will appear as in this revision, addressing only the laminate joint portion.

1. Scope

1.1 This specification establishes acceptable performance levels for glues or adhesives to be used in nonstructural glued lumber products. Such products include, but are not limited to, interior and exterior moldings, window and door stock, and glued lumber panels. Adhesives that meet the respective requirements of the certification tests are considered capable of providing an adequate bond for use under the conditions described for the class. This specification is to be used to evaluate adhesives only and is not to be used to evaluate the industrial end products (glued wood products) made with adhesives.

1.2 The following safety hazards caveat applies only to the test methods portion, Sections 6 through 12, of this specification: *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:

D 905 Test Method for Strength Properties of Adhesive Bonds in Shear by Compression Loading²

D 907 Terminology of Adhesives²

D 2016 Test Methods for Moisture Content of Wood³

D 2555 Test Methods for Establishing Clear-Wood Strength Values³

E 4 Practices for Force Verification of Testing Machines⁴

E 6 Terminology Relating to Methods of Mechanical Testing⁴

E 41 Terminology Relating to Conditioning⁵

3. Terminology

3.1 *Definitions*—For other terms used in this specification, refer to Terminologies D 907, E 6, and E 41.

3.1.1 *laminate joint*—A joint made by bonding adherends face-to-face or edge-to-edge (with the grain direction parallel) to form thicker or wider stock.

4. Classification of Adhesive Performance

4.1 For purposes of this specification, adhesives are classified on the basis of two performance levels, wet-use and dry-use.

4.1.1 *Wet-Use Nonstructural Adhesive*—One capable of producing sufficient glue-joint strength and durability to make the glued lumber product serviceable in nonstructural use under conditions in which the equilibrium moisture content (EMC) of the wood may be 16 % or greater, and where the temperature may reach levels as high as 165° F (74°C), at times, during service. Table 1 outlines the applicable tests and performance requirements for a wet-use nonstructural adhesive.

4.1.2 *Dry-Use Nonstructural Adhesive*—One capable of producing sufficient glue-joint strength and durability to make the glued lumber product serviceable in nonstructural use, under conditions in which the equilibrium moisture content (EMC) of the wood does not exceed 16 %, and where the temperature does not exceed 165°F (74°C) for as long as 6 h during shipment, or 140°F (60°C) continuously during service. Table 1 outlines the applicable tests and performance requirements for a dry-use nonstructural adhesive.

5. Classification of Glued Lumber Joints

5.1 There is one class, the laminate joint.

¹ This specification is under the jurisdiction of ASTM Committee D-14 on Adhesives and is the direct responsibility of Subcommittee D14.30 on Wood Adhesives.

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² Annual Book of ASTM Standards, Vol 15.06.

³ Annual Book of ASTM Standards, Vol 04.10.

⁴ Annual Book of ASTM Standards, Vol 03.01.

⁵ Annual Book of ASTM Standards, Vol 14.02.