



Standard Test Method for Strength Properties of Adhesives in Two-Ply Wood Construction in Shear by Tension Loading¹

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INTRODUCTION

The accuracy of the results of strength tests of adhesive bonds depends on the conditions under which the bonding process is carried out. Unless otherwise agreed upon between the manufacturer and the purchaser, the bonding conditions shall be prescribed by the manufacturer of the adhesive. In order to ensure that complete information is available to the individual conducting the tests, the manufacturer of the adhesive shall furnish numerical values and other specific information for each of the following variables:

- (1) The moisture content of the wood at the time of bonding.
- (2) Complete mixing directions for the adhesive.
- (3) Conditions for application of the adhesive including the rate of spread or thickness of film, number of coats to be applied, whether to be applied to one or both surfaces and the conditions of drying where more than one coat is required.
- (4) Assembly conditions before application of pressure, including the room temperature, length of time, and whether open or closed assembly is to be used.
- (5) Curing conditions, including the amount of pressure to be applied, the length of time under pressure, and the temperature of the assembly when under pressure. It should be stated whether this temperature is that of the bondline, or of the atmosphere at which the assembly is to be maintained.
- (6) Conditioning procedure before testing, unless a standard procedure is specified, including the length of time, temperature, and relative humidity.

A range may be prescribed for any variable by the manufacturer of the adhesive if it can be assumed by the test operator that any arbitrarily chosen value within such a range or any combination of such values for several variables will be acceptable to both the manufacturer and the purchaser of the adhesive.

1. Scope

1.1 This test method covers the determination of the comparative shear strengths of adhesives when tested on a standard specimen and under specified conditions of preparation, conditioning, and testing. This test method is intended to be applied only to adhesives used in bonding wood to wood.

1.2 The values stated in SI units are to be regarded as the standard. The values given in parentheses are for information only.

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 and health practices and determine the applicability of regulatory limitations prior to use.*

¹ This test method 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. Referenced Documents

2.1 ASTM Standards:

- D 143 Methods of Testing Small Clear Specimens of Timber²
- D 907 Terminology of Adhesives³

3. Terminology

3.1 Definitions:

3.1.1 *shear, n*—in an adhesively bonded joint, stress, strain, or failure resulting from applied forces that tends to cause adjacent planes of a body to slide parallel in opposite directions.

4. Significance and Use

- 4.1 By the nature of the way adhesives are used in two-ply

² Annual Book of ASTM Standards, Vol 04.10.

³ Annual Book of ASTM Standards, Vol 15.06.