



Standard Test Method for Strength Properties of Double Lap Shear Adhesive Joints by Tension Loading¹

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INTRODUCTION

The accuracy of the results of strength tests of adhesive bonds will depend on the conditions under which the bonding process is carried out. Unless otherwise agreed upon between the manufacturer and the purchaser, the bonding conditions should 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 should furnish numerical values and other specific information for each of the following variables:

- (1) Surface preparation
- (2) Mixing directions
- (3) Adhesive application
- (4) Assembly conditions
- (5) Curing conditions
- (6) Testing conditions

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 tensile shear strengths of adhesives for bonding metals when tested in an essentially peel-free standard specimen that develops adhesive stress distribution representative of that developed in a typical low-peel production-type structural joint. The reproducibility of the strengths achieved are directly related to conformance with specified conditions of preparation and testing.

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 D14 on Adhesives and is the direct responsibility of Subcommittee D14.80 on Metal Bonding Adhesives

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2. Referenced Documents

2.1 ASTM Standards:²

- A167 Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet, and Strip (Withdrawn 2014)³
- B36/B36M Specification for Brass Plate, Sheet, Strip, and Rolled Bar
- B152/B152M Specification for Copper Sheet, Strip, Plate, and Rolled Bar
- B209 Specification for Aluminum and Aluminum-Alloy Sheet and Plate
- B265 Specification for Titanium and Titanium Alloy Strip, Sheet, and Plate
- D618 Practice for Conditioning Plastics for Testing
- D907 Terminology of Adhesives
- E4 Practices for Force Verification of Testing Machines
- E122 Practice for Calculating Sample Size to Estimate, With

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.