



Designation: D952 – 15 (Reapproved 2021)

Standard Test Method for Bond or Cohesive Strength of Sheet Plastics and Electrical Insulating Materials¹

This standard is issued under the fixed designation D952; 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 covers the determination of the bond strength or ply adhesion strength of sheet plastic and electrical insulating materials. It is applicable to both laminated and nonlaminated thermoplastic and thermosetting materials.

1.2 Test data obtained by this test method is relevant and appropriate for use in engineering design.

1.3 The values stated in SI units are to be regarded as standard. The values given in parentheses after SI units are provided for information only and are not considered standard.

1.4 *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.*

NOTE 1—There is no known ISO equivalent to this standard.

1.5 *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

D618 Practice for Conditioning Plastics for Testing

D883 Terminology Relating to Plastics

D4000 Classification System for Specifying Plastic Materials

D5947 Test Methods for Physical Dimensions of Solid Plastics Specimens

¹ This test method is under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and is the direct responsibility of Subcommittee D09.07 on Electrical Insulating Materials.

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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.

D6988 Guide for Determination of Thickness of Plastic Film Test Specimens

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

2.2 ANSI Standard:³

B1.1 Standard for Unified Screw Threads

3. Terminology

3.1 *Definitions*—For definitions of technical terms pertaining to plastics used in this test method, see Terminology D883.

4. Significance and Use

4.1 This test, when applied to laminated plastics, is a measure of the interlaminar or intralaminar strength, whichever is smaller, in a direction normal to the plane of the laminate. When applied to nonlaminated plastics, the test is a measure of the cohesive strength of the material. The property determined is fundamental and has not yet been correlated with the results of any other method for bond strength.

4.2 The test is potentially useful as (1) a research test when studying the effects of changes in independent variables, (2) a specification test, or (3) a referee test.

4.3 Before proceeding with this test method, make reference to the specification of the material being tested. Any test specimen preparation, conditioning, dimensions or testing parameters or combination thereof covered in the relevant ASTM materials specification shall take precedence over those in this test method. If there are no relevant ASTM material specifications then the default conditions apply. Table 1 of Classification System D4000 lists the ASTM materials standards that currently exist.

5. Apparatus and Materials

5.1 *Testing Machine*—Any suitable tensile testing machine capable of crosshead movement at a constant rate of 1.3 mm/min. (0.05 in./min.) and of sufficient capacity to exceed the failure load of the material being tested.

³ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.