



Standard Test Methods for Bondable Silicone Rubber Tapes Used for Electrical Insulation¹

This standard is issued under the fixed designation D2148; 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 These test methods cover tests for bondable silicone rubber tapes which form a sealed structure either with the application of heat (and pressure if needed) or by the process of auto-adhesion (self-fusing).

1.2 The methods appear in the following sections:

Test Method	Section
Adhesion	3 – 9
Bond Strength	10 – 17
Dielectric Breakdown Voltage	18 – 25
Hardness	40
Length	32 and 33
Thickness	26 – 31
Width	35 – 39

1.3 The values stated in inch-pound units are to be regarded as standard, except for °C. The values in parentheses are mathematical conversions to SI units that 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 and health practices and determine the applicability of regulatory limitations prior to use.* For a specific hazard statement see 22.1.1.

2. Referenced Documents

2.1 ASTM Standards:²

D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
D374 Test Methods for Thickness of Solid Electrical Insulation (Withdrawn 2013)³
D1000 Test Methods for Pressure-Sensitive Adhesive-Coated Tapes Used for Electrical and Electronic Applications
D1458 Test Methods for Fully Cured Silicone Rubber-Coated Glass Fabric and Tapes for Electrical Insulation
D2240 Test Method for Rubber Property—Durometer Hardness
D6054 Practice for Conditioning Electrical Insulating Materials for Testing (Withdrawn 2012)³

2.2 *ASTM Adjuncts:*

Tack tester (one drawing)⁴

ADHESION

3. Scope

3.1 This test method covers the determination of the self-adhesion of unsupported, self-fusing silicone rubber rectangular and taper-edge (**Note 1**) tape designed for use as electrical insulation.

NOTE 1—Taper-edge tape includes such cross sections as triangular, lens, etc.

4. Significance and Use

4.1 Self-adhesion is a primary initial property since it affects layer-to-layer bonding. The integrity of the bond can significantly affect the electrical and physical performance of the insulation system. Therefore, the degree of self-adhesion is directly related to apparatus performance.

4.2 A high degree of self-adhesion is desirable for most electrical applications. In this test, a short unwinding length indicates a high degree of self-adhesion.

4.3 This test method has been found useful as a quality control test for lot acceptance.

5. Apparatus

5.1 *Inclined Mandrel Tack Test Fixture*—A suggested fixture is shown in **Fig. 1**.⁴ The mandrel shall consist of a 5/8-in.

¹ These methods are under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and are the direct responsibility of Subcommittee D09.07 on Flexible and Rigid 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.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from ASTM International Headquarters. Order Adjunct No. ADJD2148. Original adjunct produced in 1965.

*A Summary of Changes section appears at the end of this standard