



Standard Test Methods for Friction Tapes¹

This standard is issued under the fixed designation D 69; 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.

This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 These test methods cover the methods and procedures for testing friction tapes. Such tapes consist of a woven fabric sheeting that has been impregnated with an adhesive insulating compound and cut into rolls of narrow width. These tapes are commonly used for protecting and binding in place, insulation applied to joints of electrical wires and cables, and for other mechanical purposes.

NOTE 1—The material specifications formerly included in these test methods are now contained in Specification D 4514.

1.2 The test methods included in this standard are as follows:

	Sections
Adhesion	5-10
Aged Adhesion	11-16
Breaking Strength	17-21
Dielectric Breakdown Voltage	22-27
Dimensions	28-33
Discoloration of Copper	34-38
Parallelism	39-43
Tackiness	44-50

1.3 The values stated in inch-pound units are the standard except in cases where SI units are more appropriate. The values in parentheses are for information only.

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.*

2. Referenced Documents

2.1 ASTM Standards:

D 149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies²

D 412 Test Methods for Vulcanized Rubber and Thermoplastic Rubbers and Thermoelastic Elastomers—Tension³

D 618 Practice for Conditioning Plastics and Electrical

Insulating Materials for Testing⁴

D 4514 Specification for Friction Tape⁵

D 5423 Specification for Forced-Convection Laboratory Ovens for Evaluation of Electrical Insulation⁵

3. Sampling

3.1 Select sample rolls at random from each shipment in accordance with the following table:

Number of Rolls in Shipment	Number of Rolls in Sample
50 to 200	2
201 to 500	3
501 to 1000	4
1001 to 5000	5

For shipments in excess of 5000 rolls, take one additional roll for each additional 1000 rolls or fraction thereof.

3.2 A shipment shall consist of material shipped or intended for shipment to a customer and covered by one bill of lading.

3.3 Test each sample roll for conformance to all the requirements of the specification.

3.4 Remove and discard at least 24 in. (610 mm) of the outer layer of each sample roll before taking test specimens.

3.5 Unwind the test specimen from the roll at a slow, uniform rate without jerking.

4. Conditioning

4.1 Unless otherwise specified, condition the rolls for 16 h in a standard laboratory atmosphere as specified in Practice D 618.

4.2 Unless otherwise specified, condition the test specimens for 1 h in a standard laboratory atmosphere as specified in Practice D 618.

ADHESION TEST

5. Significance and Use

5.1 In most applications, a friction tape must have adequate adhesion to remain in place and function properly.

6. Apparatus

6.1 *Adhesion Tester*—An assembly similar to that shown in Fig. 1, consisting of a mandrel mounted in a level position in ball bearings. The mandrel shall be 0.25 in. (6.4 mm) in

¹ These test methods are under the jurisdiction of ASTM Committee D-9 on Electrical and Electronic Insulating Materials and are the direct responsibility of Subcommittee D09.07 on Flexible and Rigid Insulating Materials.

Current edition approved Nov. 10, 1996. Published January 1997. Originally published as D 69 – 20T. Last previous edition D 69 – 95.

² Annual Book of ASTM Standards, Vol 10.01.

³ Annual Book of ASTM Standards, Vol 09.01.

⁴ Annual Book of ASTM Standards, Vol 08.01.

⁵ Annual Book of ASTM Standards, Vol 10.02.