



Designation: D1677 – 17 (Reapproved 2024)

Standard Test Methods for Sampling and Testing Untreated Mica Paper Used for Electrical Insulation¹

This standard is issued under the fixed designation D1677; 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 procedures for sampling and testing untreated mica paper to be used as an electrical insulator or as a constituent of a composite material used for electrical insulating purposes.

1.2 The procedures² appear in the following order:

Procedures	Sections	ASTM Method References
Apparent Density	12	...
Aqueous Extract Conductivity	32 and 33	D202
Conditioning	4	D685
Dielectric Strength	16 – 19	D149
Impregnation Time	20 – 24	D202
Moisture Content	26 – 28	D644
Roll Quality	25	...
Sampling	3	...
Tensile Strength	13 – 15	D828
Thickness	6 – 10	D374/D374M
Weight	11	D646
Weight Variability	29 – 31	...

1.3 The values stated in inch-pound units are to be regarded as the 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.*

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.*

¹ These test methods are under the jurisdiction of ASTM Committee D09 on Electrical and Electronic Insulating Materials and are the direct responsibility of Subcommittee D09.01 on Electrical Insulating Products.

Current edition approved March 1, 2024. Published March 2024. Originally approved in 1959. Last previous edition approved in 2011 as D1677 – 17. DOI: 10.1520/D1677-17R24.

² The test methods for other properties will be added in accordance with standard ASTM procedures as their need becomes generally desirable.

2. Referenced Documents

- 2.1 *ASTM Standards*:³
- D149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies
 - D202 Test Methods for Sampling and Testing Untreated Paper Used for Electrical Insulation
 - D374/D374M Test Methods for Thickness of Solid Electrical Insulation
 - D644 Test Method for Moisture Content of Paper and Paperboard by Oven Drying (Withdrawn 2010)⁴
 - D646 Test Method for Mass Per Unit Area of Paper and Paperboard of Aramid Papers (Basis Weight) (Withdrawn 2022)⁴
 - D685 Practice for Conditioning Paper and Paper Products for Testing
 - D828 Test Method for Tensile Properties of Paper and Paperboard Using Constant-Rate-of-Elongation Apparatus
 - D1711 Terminology Relating to Electrical Insulation

3. Sampling

3.1 Sample in accordance with the requirements set forth in Test Methods D202.

3.2 Make the tests for physical properties on each sample insofar as the specimens are of sufficient width.

3.3 Untreated mica papers are, in general, quite fragile and friable. At all times during the operations of sampling, conditioning, specimen preparation, and testing, great care must be taken to prevent flexing and tearing, and to minimize abrasion of particles from the surfaces. The test values are significantly and adversely affected if these precautions are not taken.

³ 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.

⁴ The last approved version of this historical standard is referenced on www.astm.org.