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.

Designation: D3394 – 16 (Reapproved 2022)

Standard Test Methods for Sampling and Testing Electrical Insulating Board[1]

This standard is issued under the fixed designation D3394; 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 the sampling and testing of electrical insulating boards. These boards are porous, usually fibrous sheets used for dielectric and structural purposes in electrical apparatus.

1.2 These test methods are not intended for testing vulcanized fibre or molded laminated sheets.

1.3 These test methods are applicable to board materials having a nominal thickness of at least 0.030 in. (0.76 mm).

NOTE 1—For materials thinner than 0.030 in. (0.76 mm) see Test Methods D202.

1.4 The test methods appear in the following sections:

	Sections	ASTM Method Reference
Apparent Density	18 – 23	
Aqueous Extract Characteristics	36 – 42	D202
Ash Content	43 – 46	T 413
Compatibility with Dielectric Liquids	47 – 52	D664, D877, D924, D971, D974, D1169, D1500, D1816, D3455, D3487
Compressibility	79 – 85	
Conditioning	11	D685
Degree of Polymerization	86 – 89	D4243
Dielectric Strength in Air	53 – 59	D149
Dielectric Strength in Oil	60 – 65	D149, D2413, D3426
Dimensions of Sheets	12 – 17	
Moisture Content	31 – 35	D644
Oil Absorption	72 – 78	
Reports	10	
Sampling	6 – 9	D3636
Shrinkage	24 – 30	D644
Tensile Properties	66 – 71	D202

1.5 The values stated in inch-pound units are to be regarded as standard. The values given in parentheses are mathematical conversions to SI units that are provided for information only and are not considered standard.

1.6 *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 consult and establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.7 *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]

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 Test Methods for Thickness of Solid Electrical Insulation (Metric) D0374_D0374M

D586 Test Method for Ash and Organic Matter Content of Degradable Erosion Control Products

D644 Test Method for Moisture Content of Paper and Paperboard by Oven Drying (Withdrawn 2010)[3]

D664 Test Method for Acid Number of Petroleum Products by Potentiometric Titration

D685 Practice for Conditioning Paper and Paper Products for Testing

D877 Test Method for Dielectric Breakdown Voltage of Insulating Liquids Using Disk Electrodes

D924 Test Method for Dissipation Factor (or Power Factor) and Relative Permittivity (Dielectric Constant) of Electrical Insulating Liquids

D971 Test Method for Interfacial Tension of Insulating Liquids Against Water by the Ring Method

D974 Test Method for Acid and Base Number by Color-Indicator Titration

D1169 Test Method for Specific Resistance (Resistivity) of Electrical Insulating Liquids

[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.

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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.

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