



Designation: D115 – 17 (Reapproved 2024)

Standard Test Methods for Testing Solvent Containing Varnishes Used for Electrical Insulation¹

This standard is issued under the fixed designation D115; 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 solvent containing varnishes primarily intended to provide electrical, mechanical, and chemical protection for electrical equipment. These test methods include tests for control and performance as follows:

Procedure	Section
Build	38 – 42
Dielectric Strength	43 – 48
Drainage	26 – 32
Flash Point	18 – 20
Nonvolatile Matter	21 – 25
Oil Resistance	54 – 56
Preparation of Test Specimens	7
Specific Gravity	9 – 12
Temperature Index	49 – 50
Time of Drying	33 – 37
Varnish Compatibility	51 – 53
Viscosity	13 – 17

1.2 Where the entire test method is included in this standard, the precision and bias are not known unless given in the stated method.

1.3 The values stated in SI units are to be regarded as standard. The values given 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.* For specific hazard statements, see Section 5.

NOTE 1—There is no equivalent IEC 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

- D56 Test Method for Flash Point by Tag Closed Cup Tester
- D93 Test Methods for Flash Point by Pensky-Martens Closed Cup Tester
- 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
- D287 Test Method for API Gravity of Crude Petroleum and Petroleum Products (Hydrometer/Method)
- D295 Test Methods for Varnished Cotton Fabrics Used for Electrical Insulation (Withdrawn 2020)³
- D374/D374M Test Methods for Thickness of Solid Electrical Insulation
- D580/D580M Practice for Greige Woven Glass Tapes and Webbing
- D1475 Test Method for Density of Liquid Coatings, Inks, and Related Products
- D1932 Test Method for Thermal Endurance of Flexible Electrical Insulating Varnishes
- D2518 Specification for Woven Glass Fabrics for Electrical Insulation (Withdrawn 2013)³
- D2519 Test Method for Bond Strength of Electrical Insulating Varnishes by the Helical Coil Test
- D3145 Test Method for Thermal Endurance of Electrical Insulating Varnishes by Helical Coil Method
- D3251 Test Method for Thermal Endurance Characteristics of Electrical Insulating Varnishes Applied Over Film-Insulated Magnet Wire
- D3278 Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus
- D3487 Specification for Mineral Insulating Oil Used in Electrical Apparatus
- D5032 Practice for Maintaining Constant Relative Humidity by Means of Aqueous Glycerin Solutions

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.