



Designation: D4565 – 20

Standard Test Methods for Physical and Environmental Performance Properties of Insulations and Jackets for Telecommunications Wire and Cable¹

This standard is issued under the fixed designation D4565; 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 the physical testing of thermoplastic insulations and jackets used on telecommunications wire and cable and the testing of physical characteristics and environmental performance properties of completed products. To determine the procedure to be used on the particular insulation or jacket or on the completed wire or cable, make reference to the specification for that product.

1.2 These test methods appear in the following sections of this standard:

Test Method	Section(s)
Dimensional Measurements of Insulations, Jackets, Miscellaneous Cable Components, and of Completed Cable	4 – 9
Cross-sectional Areas	9
Diameters	6
Eccentricity	8
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Aging Test (Jackets Only)	24
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Oxygen Induction Time (Polyolefin Insulation Only)	17
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Sheath Adherence Test	31
Water Penetration Test (Filled Core Wire and Cable Only)	41
Wire and Cable Bending Test	34
Wire breaking strength	37

1.3 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, except where only SI units are given.

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 warning statement see 19.1.

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

- D471 Test Method for Rubber Property—Effect of Liquids
- D638 Test Method for Tensile Properties of Plastics
- D1238 Test Method for Melt Flow Rates of Thermoplastics by Extrusion Plastometer
- D1248 Specification for Polyethylene Plastics Extrusion Materials for Wire and Cable
- D1693 Test Method for Environmental Stress-Cracking of Ethylene Plastics
- D2633 Test Methods for Thermoplastic Insulations and Jackets for Wire and Cable
- D3032 Test Methods for Hookup Wire Insulation

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 D09.07 on Electrical 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.

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