



Standard Specification for Extruded Polytetrafluoroethylene (PTFE) Rod, Heavy Walled Tubing and Basic Shapes¹

This standard is issued under the fixed designation D1710; 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 U.S. Department of Defense.

1. Scope*

1.1 This specification covers extruded polytetrafluoroethylene (PTFE) rod, heavy-walled tubing, and basic shapes manufactured from the PTFE resin of Specification [D4894](#) and reprocessed PTFE resin (as defined in Guide [D7209](#)).

1.2 The specification covers all sizes of rod, tubing, and basic shapes with a wall thickness of 1.6 mm ($1/16$ in.) or greater. These materials must be made wholly from PTFE and produced in accordance with good commercial ram extrusion practices.

NOTE 1—This specification and ISO/DIS 13000-1 (1997) and ISO/DIS 13000-2 (1997) differ in approach, however, data obtained using either are technically equivalent.

NOTE 2—For compression molded PTFE materials, see Specification D3294. Material that can be certified to Specification D3294 may be substituted for Specification D1710, however the reverse is not true.

1.3 The values stated in SI units, as detailed in IEEE/ASTM SI 10 are to be regarded as the standard. The inch-pound units given in parentheses are provided for information only.

1.4 The following precautionary caveat pertains to the test methods portion, Section 12, only of this specification: *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:²

[D149](#) Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials

¹ This specification is under the jurisdiction of ASTM Committee D20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic 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.

[at Commercial Power Frequencies](#)
[D374 Test Methods for Thickness of Solid Electrical Insulation \(Withdrawn 2013\)](#)³
[D618 Practice for Conditioning Plastics for Testing](#)
[D792 Test Methods for Density and Specific Gravity \(Relative Density\) of Plastics by Displacement](#)
[D883 Terminology Relating to Plastics](#)
[D1600 Terminology for Abbreviated Terms Relating to Plastics](#)
[D3892 Practice for Packaging/Packing of Plastics](#)
[D4894 Specification for Polytetrafluoroethylene \(PTFE\) Granular Molding and Ram Extrusion Materials](#)
[D5740 Guide for Writing Material Standards in the Classification Format](#)
[D5947 Test Methods for Physical Dimensions of Solid Plastics Specimens](#)
[D7209 Guide for Waste Reduction, Resource Recovery, and Use of Recycled Polymeric Materials and Products \(Withdrawn 2015\)](#)³
[E94 Guide for Radiographic Examination](#)
[IEEE/ASTM SI 10 Standard for the Use of the International System of Units \(SI\): The Modern Metric System](#)⁴
2.2 *ISO Standards:*⁵
[ISO 13000-1 \(2005\) Plastics—Polytetrafluoroethylene \(PTFE\) Semi-Finished Products, Part 1: Basis for Specification](#)
[ISO 13000-2 \(2005\) Plastics—Polytetrafluoroethylene \(PTFE\) Semi-Finished Products, Part 2: Preparation of Test Specimen and Determination of Properties](#)

3. Terminology

3.1 Definitions:

3.1.1 Definitions are in accordance with Terminology [D883](#) unless otherwise specified.

³ The last approved version of this historical standard is referenced on www.astm.org.

⁴ Available from ASTM International, 100 Barr Harbor Drive, West Conshohocken, PA 19428.

⁵ Available from American National Standards Institute (ANSI), 25 W. 43rd St., 4th Floor, New York, NY 10036, <http://www.ansi.org>.

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