



Standard Specification for Extruded and Compression Molded Rod and Heavy-Walled Tubing Made from Polytetrafluoroethylene (PTFE)¹

This standard is issued under the fixed designation D6457; 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 This specification is intended to be a means of calling out plastic product used in the fabrication of end items or parts.

1.2 This specification covers requirements and test methods for the material, dimensions, and workmanship, and the properties of extruded- and compression-molded rod, and heavy-walled tube manufactured from granular unfilled PTFE resin in accordance with Specification [D4894](#).

1.3 This specification covers rod and heavy-walled tubing made wholly from polytetrafluoroethylene and produced in accordance with good commercial practice.

1.4 The properties included in this specification are those required for the compositions covered. Requirements necessary to identify particular characteristics important to specialized applications are described by using the classification system given in Section 4.

1.5 This specification allows for the use of recycled plastics as defined in Guide [D7209](#).

1.6 The values stated in inch-pound units are to be regarded as the standard in all property and dimensional tables.

1.7 *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.*

NOTE 1—Although this specification and ISO 13000-1 and ISO 13000-2 differ in approach or detail, data obtained using either are technically equivalent.

2. Referenced Documents

2.1 ASTM Standards:²

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 (D20.15.12 on Fluoropolymers).

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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.

[D374 Test Methods for Thickness of Solid Electrical Insulation](#) (Withdrawn 2013)³

[D638 Test Method for Tensile Properties of Plastics](#)

[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](#)

[D1708 Test Method for Tensile Properties of Plastics by Use of Microtensile Specimens](#)

[D3892 Practice for Packaging/Packing of Plastics](#)

[D4000 Classification System for Specifying Plastic Materials](#)

[D4591 Test Method for Determining Temperatures and Heats of Transitions of Fluoropolymers by Differential Scanning Calorimetry](#)

[D4894 Specification for Polytetrafluoroethylene \(PTFE\) Granular Molding and Ram Extrusion Materials](#)

[D7209 Guide for Waste Reduction, Resource Recovery, and Use of Recycled Polymeric Materials and Products](#)

[E94 Guide for Radiographic Examination](#)

[IEEE/ASTM SI-10 Standard for Use of the International System of Units \(SI\): The Modern Metric System](#)

2.2 ISO Standard:⁴

[ISO 13000-1 Plastics—Polytetrafluoroethylene \(PTFE\) Semi-Finished Products—Part I: Requirements and Designation](#)

[ISO 13000-2 Plastics—Polytetrafluoroethylene \(PTFE\) Semi-Finished Products—Part II: Preparation of Test Specimens and Determination of Properties](#)

3. Terminology

3.1 Definitions:

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

3.1.2 *heavy-walled tubing, n*—an annular shape with a minimum wall thickness of $\frac{1}{16}$ in.

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

⁴ 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