



Standard Specification for Polytetrafluoroethylene (PTFE) Resin Cast Film¹

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This standard has been approved for use by agencies of the Department of Defense.

1. Scope

1.1 This specification covers PTFE-fluorocarbon resin cast film in thicknesses from 0.025 to 0.127 mm (0.001 to 0.005 in.).

1.2 PTFE film and sheet are made by several different processes and the properties of the products reflect both the different starting polymers and the different processes. Properties that are affected include, but are not limited to: tensile strength and elongation at break, porosity, anisotropy, and molecular weight. Related standards are Specifications D 3293 and D 3308. It is important to examine each of the other standards to select the one appropriate for the application.

1.3 The values in SI units are to be regarded as standard. The SI units given in parentheses are for information only.

NOTE 1—There is no similar or equivalent ISO standard.

1.4 The following precautionary caveat pertains only to the test methods portion, Section 6, 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:

D 149 Test Method for Dielectric Breakdown Voltage and Dielectric Strength of Solid Electrical Insulating Materials at Commercial Power Frequencies²

D 374 Test Methods for Thickness of Solid Electrical Insulation²

D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing³

D 792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement³

¹ This specification is under the jurisdiction of ASTM Committee D-20 on Plastics and is the direct responsibility of Subcommittee D20.15 on Thermoplastic Materials.

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In this revision, the Inspection, Rejection and Rehearing, and Certification Sections were revised.

² Annual Book of ASTM Standards, Vol 10.01.

³ Annual Book of ASTM Standards, Vol 08.01.

D 1389 Test Method for Proof-Voltage Testing of Thin Solid Electrical Insulating Materials²

D 1898 Practice for Sampling of Plastics³

D 3293 Specification for PTFE Resin Molded Sheet⁴

D 3308 Specification for PTFE Resin Skived Tape⁴

D 3892 Practice for Packaging/Packing of Plastics⁴

D 4895 Specification for Polytetrafluoroethylene (PTFE) Resin Produced from Dispersion⁵

3. Classification

3.1 This specification covers one type of TFE-fluorocarbon resin cast film.

4. Physical Requirements

4.1 The film shall conform to the property values specified in Table 1.

4.2 The length and width of the film shall be as agreed upon between the purchaser and the manufacturer. The tolerance in length and width shall be + 6.35 mm, – 0 mm (+ 0.25 in., – 0 in.).

4.3 Thickness tolerances shall be as specified in Table 2 when measured at any point at a temperature range from 23 to 30°C (73.4 to 86°F).

4.4 The film shall be natural in color and may vary from cloudy to milky transparent, depending upon thickness.

4.5 The material shall be essentially free of surface blisters, wrinkles, cracks, and other surface defects, unless otherwise agreed upon between purchaser and manufacturer.

4.6 As may be agreed upon between purchaser and manufacturer, one or both sides of the material shall be given a surface treatment to enable the surface to take adhesives or printing inks.

5. Sampling

5.1 Unless otherwise agreed upon between the purchaser and the manufacturer, the materials shall be sampled in accordance with the sampling procedure prescribed in Practice D 1898. Adequate statistical sampling shall be considered an acceptable alternative. A lot shall consist of all material of the same thickness delivered at the same time.

⁴ Annual Book of ASTM Standards, Vol 08.02.

⁵ Annual Book of ASTM Standards, Vol 08.03.