Designation: D6867 – 19

Standard Specification for Perfluoroalkoxy (PFA)-Fluoropolymer Tubing[1]

This standard is issued under the fixed designation D6867; 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 covers tubing produced from PFA Fluoropolymer resins which are cited in Specification D3307. This document specifies tubing dimensional tolerances, tensile properties and related electrical properties as noted in the appropriate tables when tested in accordance with the methods cited in this specification. This specification is for virgin material only and does not address recycled material, as it is not appropriate for PFA tubing.

NOTE 1—Abbreviations are in accordance with Terminology D1600.

NOTE 2—There is no known ISO equivalent to this standard.

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

1.3 The following safety hazards caveat pertains only to the test methods portion, Section 7, 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, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.4 *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]

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

D1675 Test Methods for Polytetrafluoroethylene Tubing

D3307 Specification for Perfluoroalkoxy (PFA) Resin Molding and Extrusion Materials

D4894 Specification for Polytetrafluoroethylene (PTFE) Granular Molding and Ram Extrusion Materials

IEEE/ASTM SI 10 Standard for Use of the International System of Units (SI): The Modern Metric System[3]

3. Terminology

3.1 *Definitions:*

3.1.1 Definitions are in accordance with Terminology D883 unless otherwise specified.

3.1.2 *lot, n*—one continuous production run or a uniform blend of two or more production runs of one size sheet or molded basic shape.

4. Physical Requirements

4.1 The tubing shall be made of PFA-fluoropolymer resin meeting the requirements of Specification D3307.

4.2 The inside diameter and wall thickness and tolerances of the tubing shall be as shown in Table 1, when determined in accordance with 7.1.3.1 and 7.1.3.2.

4.3 The specific gravity of the tubing shall be between 2.12 and 2.17 inclusive when determined in accordance with 7.1.4.

4.4 The tubing shall have a minimum tensile strength of 10.0 MPa (1500 psi) and a minimum elongation of 200 % when determined in accordance with 7.1.5.

4.5 The tubing shall remain free from cracks and exhibit no splitting when tested for dimensional stability in accordance with 7.1.6.

5. Sampling

5.1 Sampling shall be statistically adequate to satisfy the requirements of 8.2.

6. Number of Tests

6.1 One set of test specimens as described in Section 7 shall be considered sufficient for testing each batch. The average

[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.

[3] Available from ASTM International Headquarters, 100 Barr Harbor Drive, PO Box C700, West Conshohocken, PA 19428–2959.

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