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Designation: F 876 – 01

An American National Standard

Standard Specification for Crosslinked Polyethylene (PEX) Tubing[1]

This standard is issued under the fixed designation F 876; 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 crosslinked polyethylene (PEX) tubing that is outside diameter controlled, made in standard thermoplastic tubing dimension ratios, and pressure rated for water at three temperatures (see Appendix X1). Included are requirements and test methods for material, workmanship, dimensions, sustained pressure, burst pressure, environmental stress cracking, stabilizer migration resistance, and degree of crosslinking. Methods of marking are also given.

1.2 The text of this specification references notes, footnotes, and appendixes which provide explanatory material. These notes and footnotes (excluding those in tables and figures) shall not be considered as requirements of the specification.

1.3 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are for information only.

1.4 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 and health practices and determine the applicability of regulatory limitations prior to use.*

2. Referenced Documents

2.1 *ASTM Standards:*

D 618 Practice for Conditioning Plastics and Electrical Insulating Materials for Testing[2]

D 792 Test Methods for Density and Specific Gravity (Relative Density) of Plastics by Displacement[2]

D 1505 Test Method for Density of Plastics by the Density-Gradient Technique[2]

D 1598 Test Method for Time-to-Failure of Plastic Pipe Under Constant Internal Pressure[3]

D 1599 Test Method for Short-Time Hydraulic Failure Pressure of Plastic Pipe, Tubing, and Fittings[3]

D 1600 Terminology for Abbreviated Terms Relating to Plastics[2]

D 1898 Practice for Sampling of Plastics[2]

D 2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings[3]

D 2765 Test Methods for Determination of Gel Content and Swell Ratio of Crosslinked Ethylene Plastics[4]

D 2837 Test Method for Obtaining Hydrostatic Design Basis for Thermoplastic Pipe Materials[3]

D 3045 Practice for Heat Aging of Plastics Without Load[4]

D 3350 Specification for Polyethylene Plastics Pipe and Fittings Materials[4]

D 3895 Test Method for Oxidative-Induction Time of Polyolefins by Differential Scanning Calorimetry[4]

F 412 Terminology Relating to Plastic Piping Systems[3]

2.2 *ANSI Standard:*

B36.10 Standards Dimensions of Steel Pipe (IPS)[5]

2.3 *Federal Standard:*

FED-STD-123 Marking for Shipment (Civil Agencies)[6]

2.4 *Military Standard:*

MIL-STD-129 Marking for Shipment and Storage[6]

2.5 *NSF Standard:*

NSF 14 for Plastic Piping Components and Related Materials[7]

2.6 *ISO Standard:*[5]

ISO R 161-1690 Pipes of Plastic Materials for the Transport of Fluids (Outside Diameters and Nominal Pressures) Part 1, Metric Series

3. Terminology

3.1 *Definitions*—Definitions are in accordance with Terminology F 412, and abbreviations are in accordance with Terminology D 1600, unless otherwise specified. The abbreviation for crosslinked polyethylene is PEX. Plastic tubing denotes a particular diameter schedule of plastic pipe in which outside diameter of the tubing is equal to the nominal size plus ⅛ in. Plastic pipe outside diameter schedule conforms to ANSI B36.10.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *crosslinked polyethylene plastics*—plastics prepared by crosslinking (curing) polyethylene compounds.

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[1] This specification is under the jurisdiction of ASTM Committee F-17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.26 on Olefin Based Pipe.

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[2] *Annual Book of ASTM Standards*, Vol 08.01.

[3] *Annual Book of ASTM Standards*, Vol 08.04.

[4] *Annual Book of ASTM Standards*, Vol 08.02.

[5] Available from American National Standards Institute, 11 West 42nd Street, 13th Floor, New York, NY 10036.

[6] Available from Standardization Documents Order Desk, Bldg. 4 Section D, 700 Robbins Ave., Philadelphia, PA 19111-5094, Attn: NPODS.

[7] Available from the National Sanitation Foundation, P.O. Box 1468, Ann Arbor, MI 48106.

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