



Designation: F 1807 – 02

An American National Standard

Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing¹

This standard is issued under the fixed designation F 1807; 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 metal insert fittings and copper crimp rings for use with cross-linked polyethylene (PEX) tubing in $\frac{3}{8}$, $\frac{1}{2}$, and $\frac{3}{4}$, and 1 in. nominal diameters that meet the requirements for Specifications F876 and F877. These fittings are intended for use in 100 psi (689.5 kPa) cold- and hot-water distribution systems operating at temperatures up to and including 180°F (82°C). Included are the requirements for materials, workmanship, dimensions, burst pressure, sustained pressure, excessive temperature and pressure, temperature cycling tests, and markings to be used on the fittings and rings.

1.2 The values stated in inch-pound units are to be regarded as the standard. The values given in parentheses are mathematical conversions to SI units which are provided for information only and are not considered the standard.

1.3 Compliance with this specification requires that these fittings be tested and certified to Specification F 877.

1.4 *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:

- B 16 Specification for Free-Cutting Brass Rod, Bar, and Shapes for Use in Screw Machines²
- B 62 Specification for Composition Bronze or Ounce Metal Castings²
- B 75 Specification for Seamless Copper Tube²
- B 88 Specification for Seamless Copper Water Tube²
- B 140/B140M Specification for Copper-Zinc-Lead (Leaded Red Brass or Hardware Bronze) Rod, Bar, and Shapes²
- B 283 Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed)²

B 584 Specification for Copper Alloy Sand Castings for General Applications²

D 1600 Terminology for Abbreviated Terms Relating to Plastics³

D 2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings⁴

E 18 Test Methods for Rockwell Hardness and Superficial Hardness of Metallic Materials⁵

F 412 Terminology Relating to Plastic Piping Systems⁴

F 876 Specification for Cross-linked Polyethylene (PEX) Tubing⁴

F 877 Specification for Cross-linked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems⁴

2.2 ASME Standards:⁶

B1.20.1 Pipe Threads General Purpose (Inch)

B16.18 Cast Copper Alloy Solder Joint Pressure Fittings

B16.22 Wrought Copper and Copper Alloy Solder Joint Pressure Fittings

2.3 Manufacturer's Standardization Society Standard:⁷

SP-104 Wrought Copper Solder Joint Pressure Fittings

2.4 NSF International Standard:⁸

Standard No. 14 for Plastic Piping Components and Related Materials

Standard No. 61 for Drinking Water System Components-Health Effects

3. Terminology

3.1 Definitions are in accordance with Terminology F 412 and abbreviations are in accordance with Terminology D 1600, unless otherwise indicated.

³ Annual Book of ASTM Standards, Vol 08.01.

⁴ Annual Book of ASTM Standards, Vol 08.04.

⁵ Annual Book of ASTM Standards, Vol 03.01.

⁶ Available from American Society of Mechanical Engineers, 345 E. 47th St., New York, NY 10017.

⁷ Available from Manufacturer's Standardization Society of the Valve and Fittings Industry, 5203 Leesburg Pike, Suite 502, Falls Church, VA 22041.

⁸ Available from the National Sanitation Foundation International, P.O. Box 1468, Ann Arbor, MI 48106.

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² Annual Book of ASTM Standards, Vol 02.01.