

IAPMO IGC 319-~~2016~~2026



PUBLIC REVIEW DRAFT

Industry Standard for

**Metal Insert Fittings for PEX and PE-RT
Tubing**



IAPMO Standard

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Metal Insert Fittings for PEX and PE-RT Tubing

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Metal Insert Fittings for PEX and PE-RT Tubing

1 Scope

1.1 General

1.1.1 This Standard covers metal insert fittings for use with PEX tubing that complies with ASTM F876, or CSA B137.5, and PE-RT tubing that complies with and ASTM F2623 or ASTM F2769, and specifies requirements for materials, physical characteristics, performance testing, and markings.

1.1.2 Metal insert fittings covered by this standard connect tubing through utilization of a ring inserted over the pipe and an insert fitting inserted inside the pipe.

1.1.3 Metal insert fittings for PEX and PE-RT tubing covered in this standard have a minimum pressure-temperature rating of 690 kPa (100 psi) at 82 °C (180°F).

1.1.4 This standard does not cover metal insert fittings already covered by ASTM F1807, ~~or~~ ASTM F1960 or ASTM 3347.

1.2 Alternative Materials

The requirements of this Standard are not intended to prevent the use of alternative materials or methods of construction provided such alternatives meet the intent and requirements of this Standard.

1.3 Terminology

In this Standard,

- (a) “shall” is used to express a requirement, i.e., a provision that the user is obliged to satisfy to comply with the Standard;
- (b) “should” is used to express a recommendation, but not a requirement;
- (c) “may” is used to express an option or something permissible within the scope of the Standard; and
- (d) “can” is used to express a possibility or a capability.

Notes accompanying sections of the Standard do not specify requirements or alternative requirements; their purpose is to separate explanatory or informative material from the text. Notes to tables and figures are considered part of the table or figure and can be written as requirements.

1.4 Units of Measurement

SI units are the primary units of record in global commerce. In this Standard, the inch/pound units are shown in parentheses. The values stated in each measurement system are equivalent in application, but each unit system is to be used independently. All references to gallons are to U.S. gallons.

1.5 Amendments

Proposals for amendments to this Standard will be processed in accordance with the standards-writing procedures of IAPMO.

1.6 Patents

The user's attention is called to the possibility that compliance with this Standard might require use of an invention covered by patent rights. By publication of this Standard, no position is taken with respect to the validity of any such claim(s) or of any patent rights in connection therewith. If a patent holder has filed a statement of willingness to grant a license under these rights on reasonable and nondiscriminatory terms and conditions to applicants desiring to obtain such a license, then details can be obtained from IAPMO.

2 Reference Publications

This Standard refers to the following publications and, where such reference is made, it shall be to the current edition of those publications, including all amendments published thereto.

ASTM F876	Standard Specification for Crosslinked Polyethylene (PEX) Tubing
ASTM F877	Standard Specification for Crosslinked Polyethylene (PEX) Hot- and Cold-Water Distribution Systems
ASTM F1807	Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing
ASTM F1960	Standard Specification for Cold Expansion Fittings with PEX Reinforcing Rings for Use with Cross-linked Polyethylene (PEX) Tubing
ASTM F2623	Standard Specification for Polyethylene of Raised Temperature (PE-RT) SDR 9 Tubing
ASTM F2769	Standard Specification for Polyethylene of Raised Temperature (PE-RT) Plastic Hot and Cold-Water Tubing and Distribution Systems
ASTM F3347	Standard Specification for Metal Press Insert Fittings with Factory Assembled Stainless Steel Press Sleeve for SDR9 Cross-linked Polyethylene (PEX) Tubing and SDR9 Polyethylene of Raised Temperature (PE-RT) Tubing
CSA B137 Series	Thermoplastic pressure piping compendium
CSA B137.5	Crosslinked polyethylene (PEX) tubing systems for pressure applications
NSF/ANSI 14	Plastics Piping System Components and Related Materials
NSF/ANSI 61	Drinking Water System Components - Health Effects

3 Abbreviations

3.1 Abbreviations

The following abbreviations apply in this Standard:

NTS	—	Nominal Tube Size
PEX	—	Cross-linked Polyethylene
PE-RT	—	Polyethylene of Raised Temperature resistance
SDR 9	—	Standard Dimension Ratio 9
UNS	—	Unified Numbering System

4 General Requirements

4.1 General

With the exception of the material requirements for the insert fittings specified in section 4.2 of this standard, metal insert fittings shall comply with the dimensional and applicable requirements specified in ASTM F1807, or ASTM F1960.

4.2 Materials

Copper alloy insert fittings covered by this Standard shall be made of copper alloy containing at least 56% copper.

4.3 Toxicity

Materials and components of metal insert fittings intended to convey or dispense water for human consumption through drinking or cooking shall comply with the applicable requirements of NSF/ANSI 61 and the applicable low-lead requirements.

4.4 Operating Pressure-Temperatures

Metal insert fittings for PEX and PE-RT tubing covered in this standard shall operate at a minimum pressure of 690 kPa (100 psi) at 82 °C (180°F).

5 Testing Requirements

5.1 General

Metal insert fittings shall be tested and shall comply with the applicable requirements specified in the fitting's corresponding standard ASTM F1807, ~~or~~ ASTM F1960 or ASTM F3347.

5.2 Dezincification Resistance Test

Metal insert fittings shall be tested and shall comply with the performance requirements of the dezincification resistance test specified in NSF/ANSI 14.

5.3 Stress Corrosion Resistance Test

Metal insert fittings shall be tested and shall comply with the performance requirements of the stress corrosion resistance test specified in NSF/ANSI 14.

6 Markings

- 6.1** Metal insert fittings complying with this Standard shall be marked in accordance with the Product Marking requirements specified in applicable marking sections of ASTM F877 except that when applied the standard number designation shall be IAPMO IGC 319.



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