



Standard Specification for Cold-Expansion Fittings with Metal Compression-Sleeves for Crosslinked Polyethylene (PEX) Pipe and SDR9 Polyethylene of Raised Temperature (PE-RT) Pipe¹

This standard is issued under the fixed designation F2080; 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 cold-expansion fittings using metal compression-sleeves for use with crosslinked polyethylene (PEX) plastic pipe in $\frac{3}{8}$ -in., $\frac{1}{2}$ -in., $\frac{5}{8}$ -in., $\frac{3}{4}$ -in., 1-in., 1 $\frac{1}{4}$ -in., 1 $\frac{1}{2}$ -in., and 2 in. nominal diameters, meeting the requirements of Specification F876 and for use with Polyethylene of Raised Temperature (PE-RT) pipe in $\frac{3}{8}$, $\frac{1}{2}$, $\frac{5}{8}$, $\frac{3}{4}$, 1, 1 $\frac{1}{4}$, nominal diameters meeting the requirements of Specification F2769, whereby the pipe is cold-expanded before fitting assembly. The components covered by this specification are intended for use in residential and commercial, hot and cold, potable water distribution systems or other applications such as municipal water service lines, radiant panel heating systems, hydronic baseboard heating systems, snow and ice melting systems, geothermal underground pipe systems and building services pipe with continuous operation at pressures up to and including 100 psi (690 kPa), and at temperatures up to and including 180°F (82°C).

1.2 Included in this specification are the requirements for materials, workmanship, dimensions, and markings to be used on the fittings and compression-sleeves. Performance requirements are as referenced in Specification F877 for systems containing PEX pipe and Specification F2769 for systems containing PE-RT pipe.

1.3 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 that are provided for information only and are not considered standard.

1.4 The following precautionary caveat pertains only to the test method portion, Section 10, 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.*

¹ This specification is under the jurisdiction of ASTM Committee F17 on Plastic Piping Systems and is the direct responsibility of Subcommittee F17.10 on Fittings.

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2. Referenced Documents

2.1 ASTM Standards:²

- A108 Specification for Steel Bar, Carbon and Alloy, Cold-Finished
- A269/A269M Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service
- A276/A276M Specification for Stainless Steel Bars and Shapes
- A312/A312M Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes
- A519 Specification for Seamless Carbon and Alloy Steel Mechanical Tubing
- B16/B16M Specification for Free-Cutting Brass Rod, Bar and Shapes for Use in Screw Machines
- B62 Specification for Composition Bronze or Ounce Metal Castings
- B140/B140M Specification for Copper-Zinc-Lead (Red Brass or Hardware Bronze) Rod, Bar, and Shapes
- B283/B283M Specification for Copper and Copper-Alloy Die Forgings (Hot-Pressed)
- B371/B371M Specification for Copper-Zinc-Silicon Alloy Rod
- B584 Specification for Copper Alloy Sand Castings for General Applications
- B689 Specification for Electroplated Engineering Nickel Coatings
- B851 Specification for Automated Controlled Shot Peening of Metallic Articles Prior to Nickel, Autocatalytic Nickel, or Chromium Plating, or as Final Finish
- D1600 Terminology for Abbreviated Terms Relating to Plastics
- D2122 Test Method for Determining Dimensions of Thermoplastic Pipe and Fittings
- F412 Terminology Relating to Plastic Piping Systems
- F876 Specification for Crosslinked Polyethylene (PEX) Tubing

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.

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