

PART I – GENERAL

WORK INCLUDED

- Cross-linked polyethylene (PEX) tubing and fittings.
- Submit product data in accordance with General Conditions and Division 1.

INDEMNIFICATION

In consideration for allowing the use of the specifically manufactured PEX systems and products, the Plumbing Contractor and the PEX manufacturer both hereby agree, jointly and severally, to indemnify, defend, and hold harmless Architect and/or Engineer of Record and related entities, as well as their principals, shareholders, employees and all heirs and assigns from any and all related consequences and claims arising from the use of a PEX piping system for all water services.

REFERENCES

- ASTM International
 1. ASTM E84 Standard Test Method for Surface Burning Characteristics of Building Materials
 2. ASTM F876 Standard Specification for Cross-linked Polyethylene (PEX) Tubing
 3. ASTM F877 Standard Specification for Cross-linked Polyethylene (PEX) Plastic Hot- and Cold-Water Distribution Systems
 4. ASTM F1807 Standard Specification for Metal Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing
 5. ASTM F2159 Standard Specification for Plastic Insert Fittings Utilizing a Copper Crimp Ring for SDR9 Cross-linked Polyethylene (PEX) Tubing
- Canadian Standards Association (CSA)
 1. CAN/CSA B137.5 Cross-Linked Polyethylene (PEX) Tubing Systems for Pressure Applications
- International Code Council (ICC)
 1. International Mechanical Code
 2. International Plumbing Code
- Plastics Pipe Institute (PPI)
 1. Technical Report TR-3 Policies and Procedures for Developing Recommended Hydrostatic Design Stresses for Thermoplastic Pipe Materials
 2. Technical Report TR-4 Recommended Hydrostatic Strengths and Design Stresses for Thermoplastic Piping and Fitting Compounds

WARRANTY

- Manufacturer's warranty covers the repair or replacement of any properly installed tubing or fittings proven defective and incidental damages.

1. NSF61 Drinking water system component health affects.

- Warranty period for PEX tubing: 25-year non-prorated warranty against failure due to defect in material or workmanship, beginning with date of substantial completion.

PART II – PRODUCTS

GENERAL

- All products, components, etc., specified herein shall be supplied by the PEX tubing manufacturer.

TUBING

Material: Cross-linked polyethylene (PEX) manufactured by PEX-b or Silane method.

- PEX tubing shall have a smoke developed rating of less than 50 and a flame spread rating of less than 25 in general accordance with ASTM E-84.
- Material Standard: Manufactured in accordance with ASTM F876 and ASTM F877 and tested for compliance by an independent third-party agency.
- Material Standard: Tested and listed for chlorine resistance according to the requirements of ASTM F876.
- Pressure Ratings: Standard Grade hydrostatic design and pressure ratings as issued by the Plastics Pipe Institute (PPI).
- Minimum Bend Radius (Cold Bending): No less than six times the outside diameter. Use PEX tubing manufacturer bend supports if radius is less than stated.
- Non-Barrier Tubing Type: PEX Non-Barrier Tubing
 1. Shall have a Pressure and Temperature rating of 160 PSI at 73°F, 100 PSI at 180°F and 80 PSI at 200°F.
 2. Provide tubing with nominal tube size in accordance with ASTM F876, size as required by manufacturer's recommended design to meet criteria on Plans.
 3. Tubing shall have a minimum of 6 months' UV protection.

FITTINGS

For system compatibility, use fittings offered by the PEX tubing manufacturer.

- The fitting assembly must comply with ASTM F877 and CAN/CSA B137.5 requirements.
- Poly Alloy Polymer Fittings (Quick/Sert CR) ½" – 1" diameter.
 1. Fittings manufactured in accordance with ASTM F2159.
 2. Poly Alloy Polymer Fittings are identified by the letters "Q" and "PEX" molded on the outside of the fitting.
 3. The fitting assembly consists of a barbed adapter and an applicable sized stainless steel QuickClamp.

- Brass (Qick/Sert 1), 1 1/4" – 2" diameter
 1. Fitting manufactured in accordance with ASTM F877.
 2. The fitting assembly consists of a brass barbed adapter and an applicable sized copper crimp ring.

V A L V E S

- Branch lines 1/2" – 1" diameter.
 1. Qest Pex Qick Sert inlet ball valves.
 2. Main lines – 1-1/4 - 2" diameter.
 3. 2" and larger Wilkins Model 850 full port ball valve.
 4. Provide Zurn thread to barb fitting in applicable size.
 5. The valve assembly consists of a DZR brass MPT x PEX adapter and applicable sized copper crimp ring.
- Annealed Copper Crimp Rings
 1. Crimp ring manufactured per copper material specification in ASTM F1807.
 2. Annealed Copper Crimp rings are black and identified by the letters "Q" and "PEX" stamped on the outside of the ring.
- QickClamp
 1. Made of stainless steel, listed to the requirements of ASTM F877 when used with PEX tube and Qick/Sert 1 fittings.
 2. QickClamp rings are identified by the letters "QickClamp" stamped on the outside of the ring.
 3. QickClamp rings shall have the following features:
 - a. Crimping Ear that allows one tool for multiple sizes
 - b. Bridge feature providing uniform crimping forces
 - c. Locating shoulder to properly position critical components
 - d. Gripping ribs
 - e. Position indicator

MANUFACTURER'S INSTRUCTIONS

Comply with manufacturer's product data, including product technical bulletins, installation instructions and design drawings.

SITE VERIFICATION OF CONDITIONS

- Verify that site conditions are acceptable for installation of the PEX plumbing system.
- Do not proceed with installation of the PEX plumbing system until unacceptable conditions are corrected.

FIELD QUALITY CONTROL

- Site tests.
 1. To ensure system integrity, pressure test the system before covering tubing in concrete or when other trades are working in the vicinity of the tubing.

END OF SECTION

PART III – EXECUTION

DELIVERY, STORAGE, AND HANDLING

- Materials shall remain in manufacturer's original, unopened, undamaged containers with identification labels intact, until ready for installation.
- Store materials protected from exposure to harmful environmental conditions and at temperature and humidity conditions recommended by the manufacturer.
 1. Store PEX tubing in cartons or under cover to avoid dirt or foreign material from entering the tubing.
- Do not expose PEX tubing to direct sunlight for more than 30 days. If construction delays are encountered, cover the tubing that is exposed to direct sunlight.