



Uponor

PLUMBING SYSTEMS

ENGINEERED POLYMER (EP)
PLUMBING PRODUCTS

BROCHURE

Engineered Polymer (EP) Plumbing Brochure

The logical choice for premium-grade performance

Premium-grade Performance for All Your Plumbing Needs

Designed to outperform metal plumbing alternatives, Uponor's engineered polymer (EP) is a high-performance, thermoplastic material that has superior mechanical, chemical and thermal properties which provide dimensional stability in demanding applications, including areas of high stress, heat and moisture.

Durable

Resistant to corrosion, pitting and scaling, Uponor EP products are designed for any plumbing — and even heating — application, whether residential or commercial.

Lead Free

EP fittings are the ideal solution to lead-free requirements and are even approved for direct burial in soil as well as concrete slabs, making installation options endless.

Cost Effective

Best of all, Uponor EP is a more cost-effective option because it offers a stable material cost and is not subject to the high price fluctuations of metal.

Unbeatable Warranty

Uponor backs its EP products with a 25-year limited warranty when used with Uponor AquaPEX® tubing and ProPEX® connections and installed by an Uponor-trained contractor.

Simply put, EP is the consistent, reliable solution for performance, durability and cost.

Uponor EP Product Offering

Uponor offers an extensive line of EP products ranging in size from 3/8" to 2".



EP Ceramic-disc Valves



Uponor EP Angle Stop, Straight Stop and Inline Valves combine the proven performance of EP with the durability and precision of ceramics for point-of-use shutoff and PEX-to-PEX applications. They resist corrosion, pitting and scaling as well as chemical and mineral buildup and greatly enhance gallons per minute (gpm) performance compared to standard compression stem-and-bonnet stop valves.

The Strength of Uponor EP

Uponor EP is made from UDEL® polysulfone, Radel R® polyphenylsulfone or Acudel® modified polyphenylsulfone. These materials are part of a family of polymers that have been used successfully in the demanding environments of medical appliance, aerospace and plumbing for many years. In fact, lab tests prove Uponor's 2" ProPEX EP Tee is able to withstand up to 2,900 lbs. of force without failure.



Beginning of test



At approximately 2,900 lbs. of force

Codes and Standards

Hydrostatic Temperature and Pressure Ratings

- 200°F/93.3°C at 80 psi
- 180°F/82.2°C at 100 psi
- 73.4°F/23°C at 160 psi

Applicable Codes

- UPC
- IPC
- NSPC
- NPC of Canada

Product Listings

- ANSI/NSF 14 and 61
- ANSI/NSF 61: Annex G
- IAPMO or U.P. Code
- ICC ESR-1099/PMG-1006, ESR-1529/PMG-1012

Manufacturing Standards

- ASTM F877
- ASTM F1960
- CSA B125.3
- CSA B137.5
- ASME A112.18.1

Fire-rated Assemblies

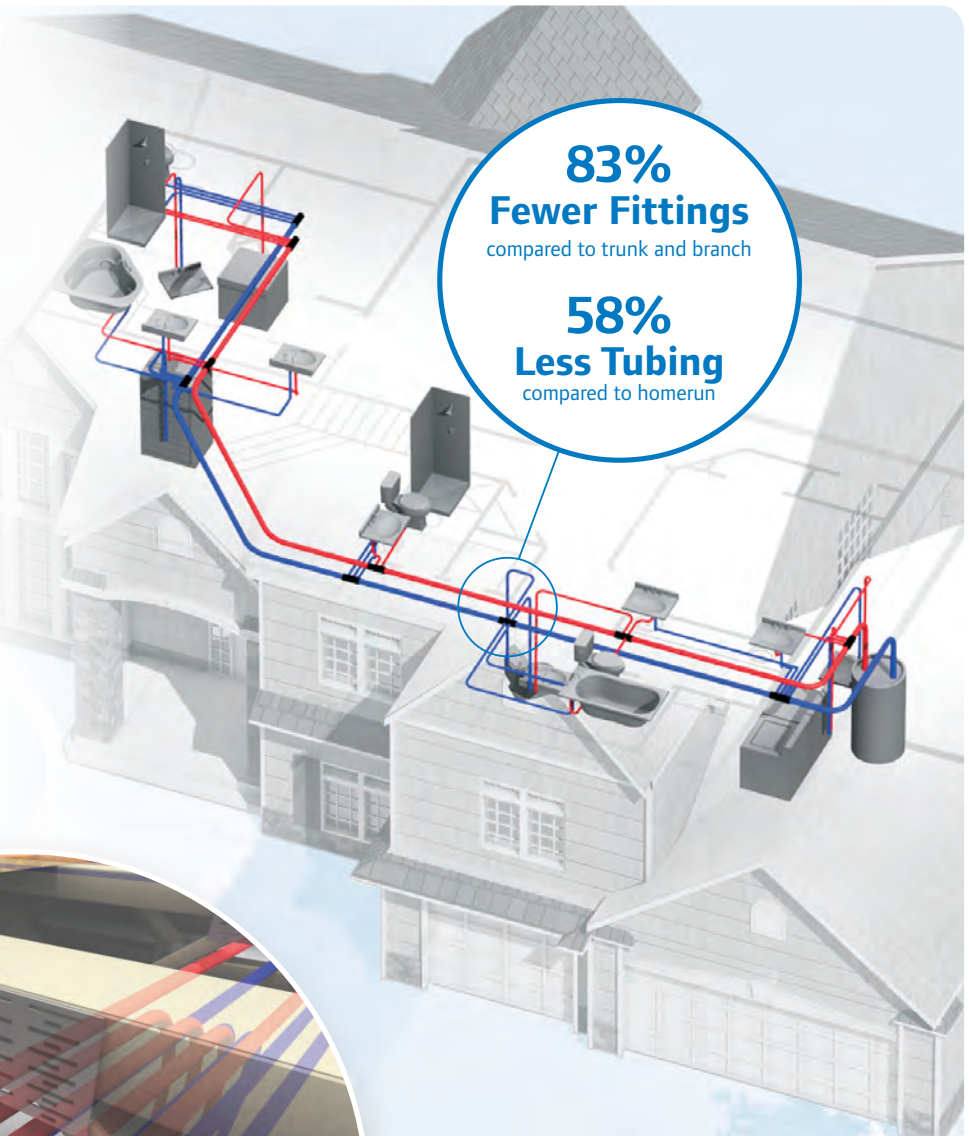
- **Comply with ASTM E119 and ANSI/UL 263**
 - UL Design No. V444 — one-hour non-load bearing steel-stud/gypsum wallboard wall assemblies
 - UL Design No. U372 — one-hour load-bearing wood-stud/gypsum wallboard wall assemblies
- **Comply with CAN/ULC-S101**
 - Warnock Hersey (WH) Design No. UW/FCA 60-01 — one-hour wood-frame floor/ceiling assemblies
 - G573 — Two-hour Hambro floor/ceiling assembly



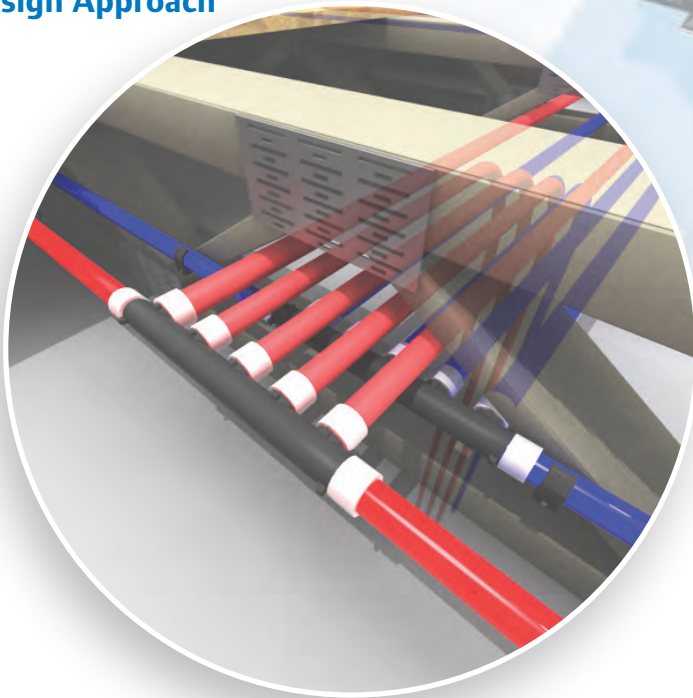
EP Multi-port Tees: The Heart of Uponor Logic Plumbing

What is Uponor Logic Plumbing?
It's an organized arrangement of flexible PEX-a tubing, ProPEX fittings, multi-port tees and out-of-the-wall systems for a plumbing design that minimizes complexity, accelerates water delivery, installs easily and requires little or no maintenance.

Uponor Logic uses the design of the innovative EP Multi-port Tee to provide water to all fixtures in a single grouping. With this arrangement, an Uponor Logic layout typically requires fewer fittings than a trunk-and-branch design and less tubing than a homerun layout.



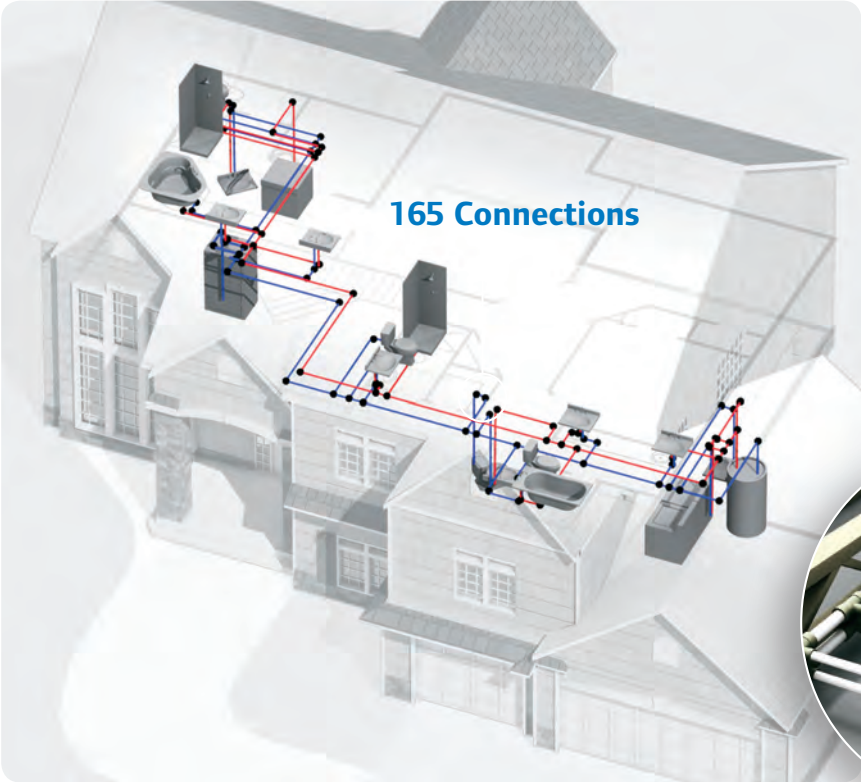
The Optimal Design Approach



- Minimal Connections
- Minimal Use of Tubing
- Quick Delivery of Hot Water

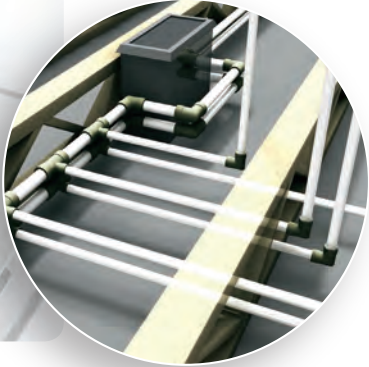
637' Uponor AquaPEX Tubing
59 ProPEX Connections
16 Fittings

Trunk-and-branch Plumbing

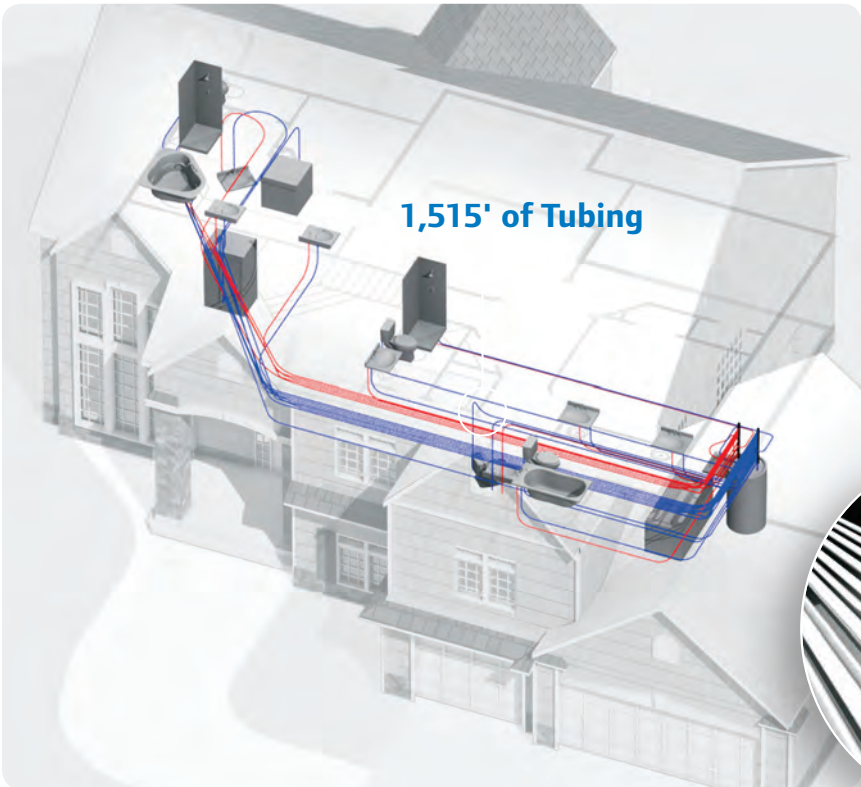


- Many Connections
- More Time to Install
- Higher Potential for Leakage
- Dry-fit Concerns

540' Pipe (Copper, CPVC, PEX)
165 Connections
96 Fittings

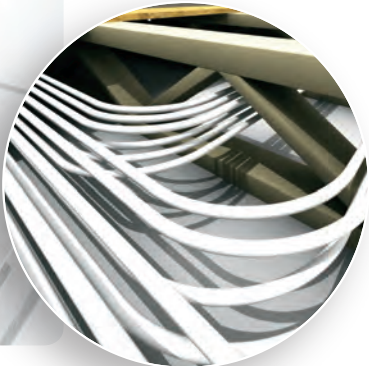


Homerun Plumbing



- Minimal Connections
- Inefficient Use of Tubing
- No Consecutive-use Hot Water Delivery Benefit

1,515' Tubing
48 Connections
10 Fittings



Superior Flow of Uponor EP ProPEX F1960 Fittings

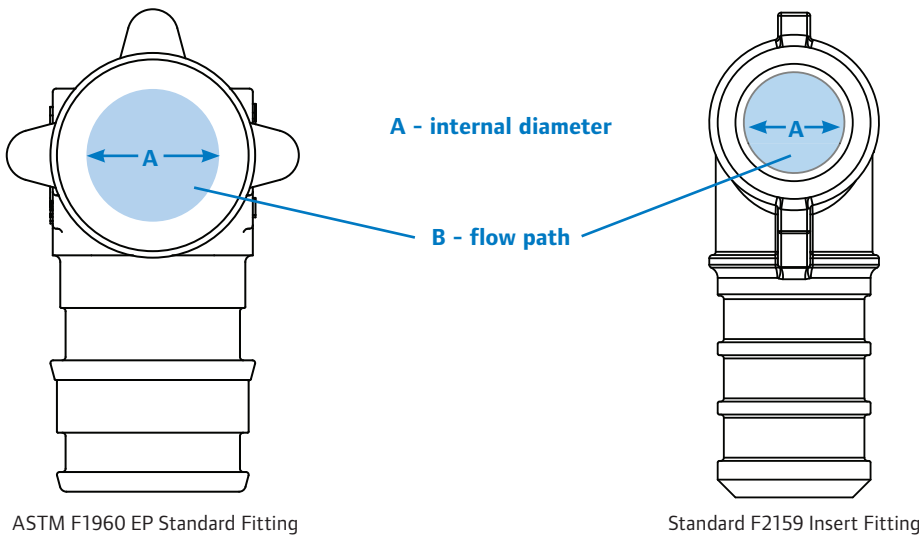
One of the many benefits of the unique ProPEX connection is the superior flow characteristics it offers. Expanding the PEX-a tubing allows a larger-diameter fitting to be inserted into the tubing, offering greater flow compared to ASTM Standard F2159 insert fittings.



ASTM F1960
Standard Uponor EP
ProPEX Insert Fitting



Standard F2159
Insert Fitting



ASTM F1960 EP Standard Fitting

Standard F2159 Insert Fitting

ASTM F1960 Standard Uponor EP ProPEX Fitting System		Standard F2159 Insert Fittings		Uponor ProPEX Advantages
A	Greater minimum internal diameter (i.d.)	½" fitting = 0.385" ¾" fitting = 0.590" 1" fitting = 0.788"	Smaller minimum i.d. ½" fitting = 0.315" ¾" fitting = 0.460" 1" fitting = 0.610"	½" fitting has 18% larger minimum i.d. ¾" fitting has 22% larger minimum i.d. 1" fitting has 22% larger minimum i.d.
	Larger cross-sectional area provides better flow	½" fitting = 0.116 sq. inches 2.9 gpm at 8 ft./sec. ¾" fitting = 0.273 sq. inches 6.8 gpm at 8 ft./sec. 1" fitting = 0.488 sq. inches 12.3 gpm at 8 ft./sec.	Smaller cross-sectional area restricts flow ½" fitting = 0.078 sq. inches 1.9 gpm at 8 ft./sec. ¾" fitting = 0.166 sq. inches 4.1 gpm at 8 ft./sec. 1" fitting = 0.292 sq. inches 7.2 gpm at 8 ft./sec.	½" fitting offers 34% higher gpm ¾" fitting offers 40% higher gpm 1" fitting offers 40% higher gpm

The ProPEX Advantage: One simple tool, no dry-fit concerns

Each EP product features Uponor's unique ProPEX connection method. The ProPEX method capitalizes on the expansion properties of Uponor PEX-a tubing, which can expand and contract back to its original shape without compromising the tubing's integrity. ProPEX connections only require one simple tool and eliminate the need for torches, glues, solvents and gauges. And because the tubing must first be expanded before a fitting can be inserted, it is impossible to dry fit the connection, so there is never a question if the fitting is completed correctly.

With millions of EP fittings in service in plumbing, heating and fire safety systems worldwide for more than a decade, ProPEX is the proven connection solution for any application.

ProPEX Fitting Standards

- ASTM F1960
- NSF/ANSI 14
- CSA B137.5
- NSF/ANSI 61



M18™ ProPEX Expansion Tool

M12™ ProPEX Expansion Tool

Uponor EP + Milwaukee® = A Winning Combination

When Uponor teamed up with Milwaukee® to create the ultimate ProPEX Expansion Tool, the result was a solution to effectively meet the needs of the plumbing and heating trades. The M12™ and M18™ ProPEX Expansion Tools offer continuous expansions for maximum install speed and feature an auto-rotating head for convenient, single-handed operation. And for added convenience, the expansion tools are compatible with over 20 tools on Milwaukee's respective battery platforms.



Uponor Engineered Polymer (EP) — For Superior Plumbing Systems

Resistant to corrosion, pitting and scaling, Uponor's cost-effective engineered polymer (EP) offering is designed to outperform metal plumbing alternatives and exceed performance expectations in demanding applications using high temperatures, pressures and chemical levels.

That's Uponor Logic at work.

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