

uponor



Engineered polymer (EP) plumbing

The logical choice for
premium-grade performance

Smart
Solutions, Inc.
High Performance Building Products

208-798-4449

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.

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

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.

Uponor EP product offering

Uponor offers an extensive line of EP products ranging in size from $\frac{3}{8}$ " to 3".



The strength of Uponor EP

Uponor EP is made from polysulfone, modified polyphenylsulfone or 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 3" ProPEX EP Tee is able to withstand up to 4,000 lbs. of spreading force without failure.



Beginning of test



At approximately 4,000 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

- IPC
- UPC
- IMC
- UMC
- NSPC
- NPC of Canada

Listings

- ANSI/NSF 14
- ANSI/NSF 61
- ANSI/NSF 61: Annex G, NSF 372
- NSF U.P. Code
- IAPMO 3558
- IAPMO Shield
- ICC ESR-1099/PMG-1006
- ICC ESR-1529/PMG-1012
- UL 1821, ULC/ORD-C199P

Standards

- ASTM F877
- ASTM F1960
- CAN/CSA B137.5

Fire-resistant construction assemblies

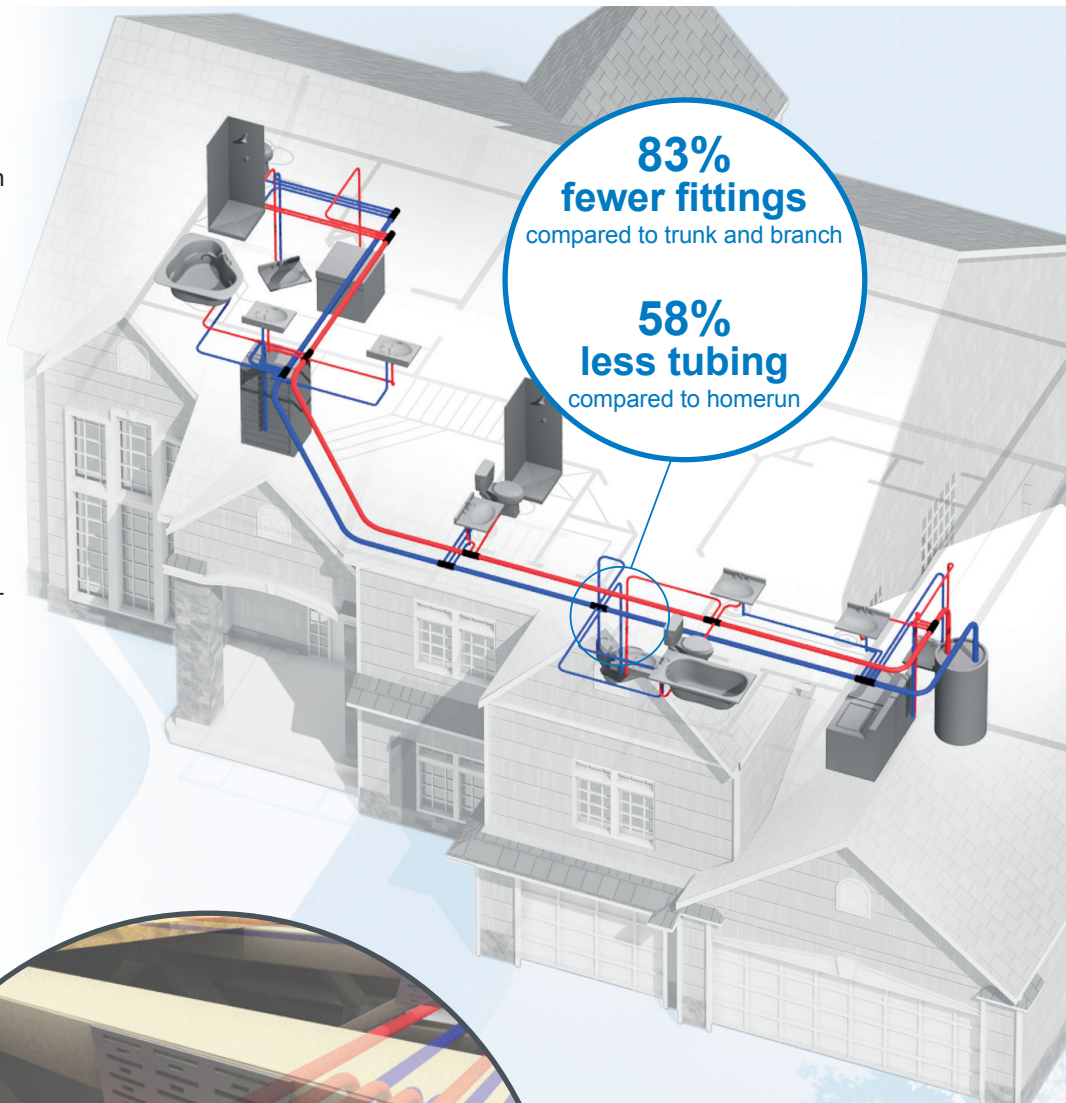
- Comply with ASTM E119 and ANSI/UL 263
 - UL Design No. V444 – one-hour non-combustible concrete/steel construction wall assemblies
 - UL Design No. G573 – two-hour restrained/unrestrained non-combustible concrete/steel construction floor/ceiling assemblies
 - UL Design No. G524 – one to three hour restrained/unrestrained non-combustible concrete/steel construction floor/ceiling assemblies
 - UL Design No. U372 – one-hour wood frame construction wall assemblies
 - UL Design No. L557 – one-hour unrestrained wood frame construction floor/ceiling assemblies
- Comply with CAN/ULC-S101
 - UW/FCA 120-01 – two-hour restrained/unrestrained non-combustible concrete/steel construction floor/ceiling assemblies
 - UW/FCA 120-02 – two-hour restrained/one-and-a-half hour unrestrained non-combustible concrete/steel construction floor/ceiling assemblies
 - UL Design No. G573 – two-hour restrained/unrestrained non-combustible concrete/steel construction floor/ceiling assemblies
 - UW/WA 60-01 – one-hour non-combustible concrete/steel construction wall assemblies
 - UW/FCA 60-01 – one-hour wood frame construction floor/ceiling assemblies
 - UW/WA 60-02 – one-hour wood frame construction wall assemblies



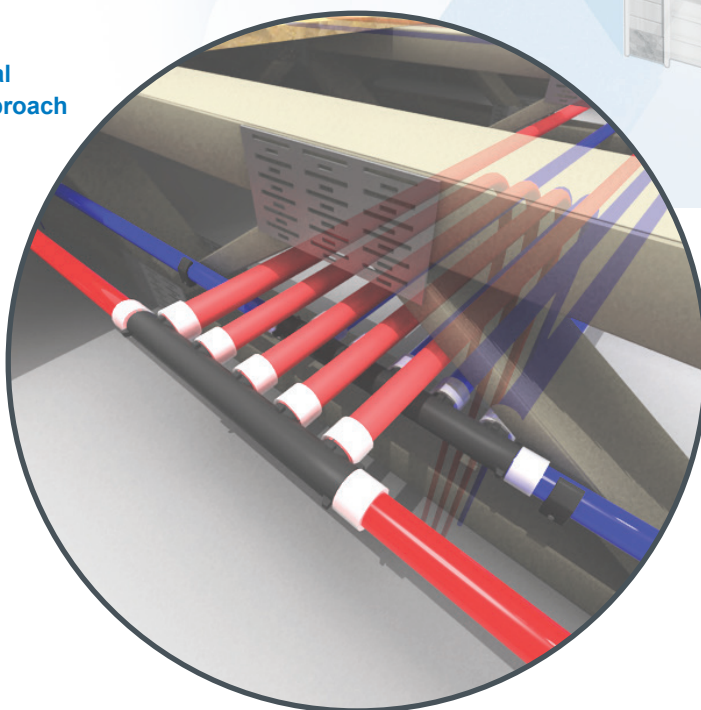
EP Multi-port tees: The heart of Uponor Logic Plumbing

What is Uponor Logic Plumbing? It's an organized arrangement of flexible PEX 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.

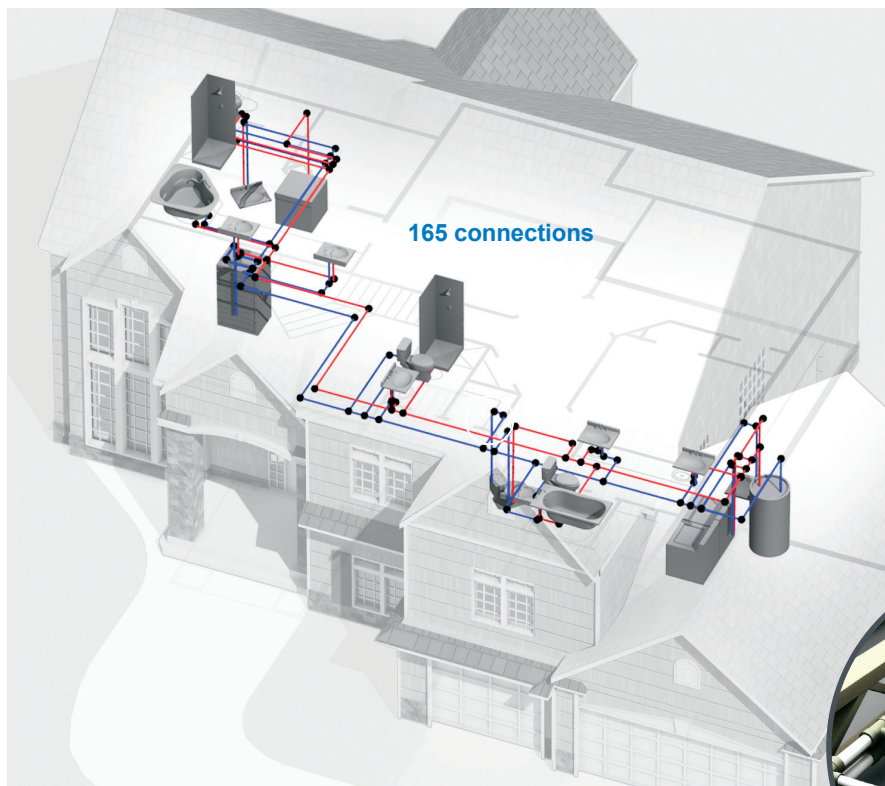


**The optimal
design approach**

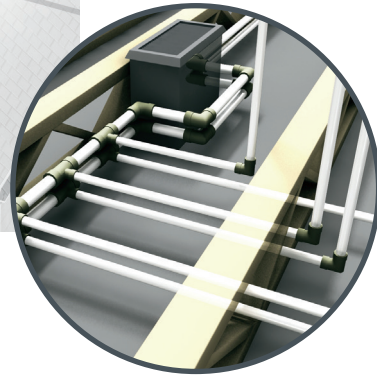


- Minimal connections
- Minimal use of tubing
- Quick delivery of hot water
 - 637' Uponor AquaPEX tubing
 - 59 ProPEX connections
 - 16 fittings

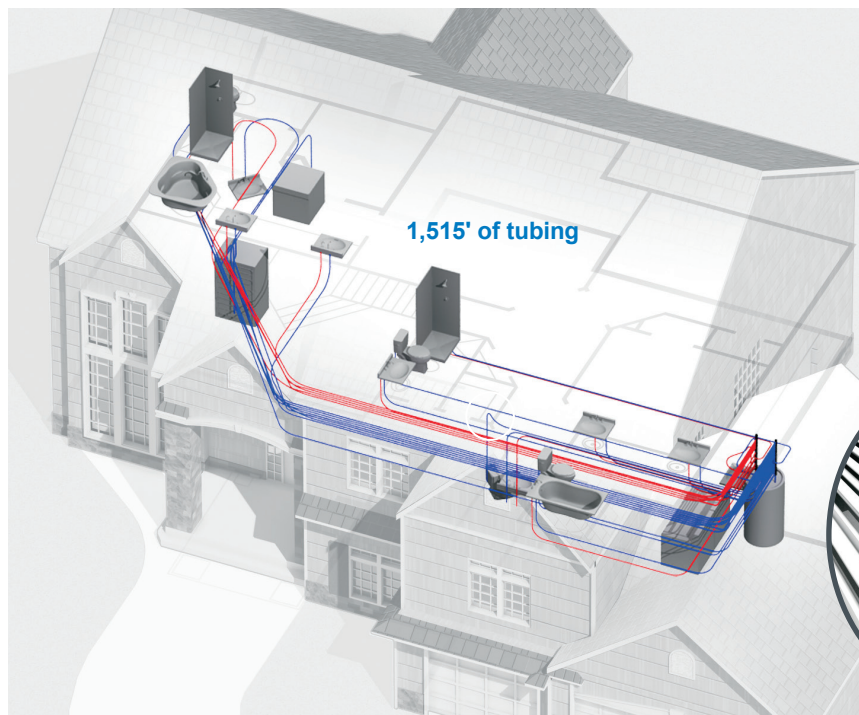
Trunk-and-branch plumbing



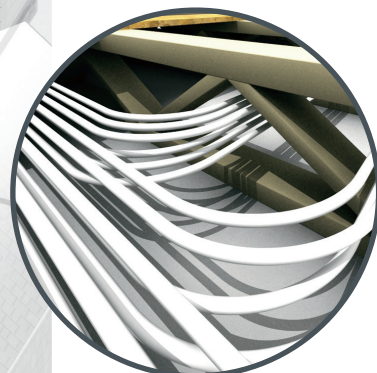
- Many connections
- More time to install
- Higher potential for leakage
- Dry-fit concerns
 - 540' pipe (copper, CPVC, PEX)
 - 165 connections
 - 96 fittings



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

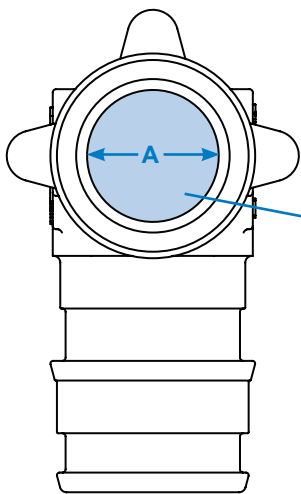
One of the many benefits of the unique ProPEX connection is the superior flow characteristics it offers. Expanding the PEX-a tubing allows a larger-diameter fitting to be inserted into the tubing, offering greater flow compared to ASTM Standard F2159 insert fittings.



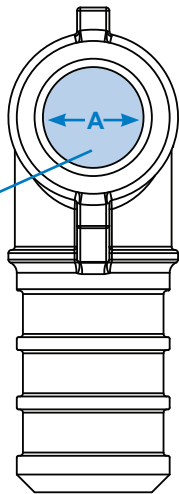
ASTM F1960
Standard Uponor EP
ProPEX insert fitting



Standard F2159
insert fitting



ASTM F1960 EP standard fitting



Standard F2159 insert fitting

A - internal diameter
B - flow path

ASTM F1960 Standard Uponor EP ProPEX fitting system			Standard F2159 insert fittings		Uponor ProPEX advantages
A	Greater minimum internal diameter (i.d.)	1/2" fitting = 0.385" 3/4" fitting = 0.590" 1" fitting = 0.788"	Smaller minimum i.d.	1/2" fitting = 0.315" 3/4" fitting = 0.460" 1" fitting = 0.610"	1/2" fitting has 18% larger minimum i.d. 3/4" fitting has 22% larger minimum i.d. 1" fitting has 22% larger minimum i.d.
	Larger cross- sectional area provides better flow	1/2" fitting = 0.116 sq. inches 2.9 gpm at 8 ft./sec. 3/4" 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.		1/2" fitting = 0.078 sq. inches 1.9 gpm at 8 ft./sec. 3/4" 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.	1/2" fitting offers 34% higher gpm 3/4" 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 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
- CAS B137.5
- NSF/ANSI 61

M18™ FORCELOGIC™ ProPEX Expansion Tool
(2", 2½" and 3" pipe)



M18™ ProPEX Expansion Tool
(up to 1½" pipe)



M12™ ProPEX Expansion Tool
(up to 1" pipe)

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 Milwaukee 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 140 tools on the M12 and M18 battery platforms (combined).

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