

PEX-a tubing why it's better



Uponor

With more than 40 years of proven performance — longer than any other PEX manufacturer in North America — Uponor is the leader in PEX tubing for plumbing, fire sprinkler, radiant heating/cooling, hydronic piping and pre-insulated piping. More than 17 billion feet of Uponor PEX tubing is in service around the world. With that kind of history, you can count on Uponor PEX to offer the highest-quality tubing for all your application needs.

Three PEX methods

Currently, three methods for producing crosslinked-polyethylene (PEX) tubing exist.

- Engel or peroxide method (PEX-a)
- Silane method (PEX-b)
- E-beam (electron beam) or radiation method (PEX-c)

All three processes generate tubing that is crosslinked to varying degrees, and are acceptable for potable-water distribution applications according to ASTM F876 and F877 standards.

Engel method (PEX-a)

Uponor manufactures Engel-method PEX-a tubing. The

PEX tubing industry considers this tubing superior because the crosslinking is done during the manufacturing process when polyethylene is in its amorphous state (above the crystalline melting point). Because of this, the degree of crosslinking reaches around 85%, resulting in a more uniform product with no weak links in the molecular chain.

Silane method (PEX-b)

PEX-b tubing is crosslinked after the extrusion process by placing the tubing in a hot water bath or steam sauna. The degree of crosslinking for PEX-b is typically around 65 to 70%. This method is not as evenly crosslinked as the

PEX-a method, nor does it have the same degree of thermal memory, which allows kinked tubing to be reshaped with the use of a heat gun.

E-beam method (PEX-c)

PEX-c uses an electron beam to change the molecular structure of the tubing (i.e., crosslink) after the extrusion process. The PEX-c method requires multiple passes under the beam to reach a 70 to 75% degree of crosslinking. Side effects of this process are discoloration due to oxidation (from natural white to yellow, unless other pigment is added), and a slightly stiffer product.

Uponor PEX-a

- Most flexible
- Tightest bend radius
- Least likely to kink
- Thermal memory
- Shape memory
- Highest degree of crosslinking

PEX-a distinctions

The properties in PEX-a tubing make it the most flexible PEX on the market. This allows the tubing the tightest bend radius available — as little as 3½" for ½" tubing. Its flexibility also greatly reduces the instance of kinked tubing.

However, if there is the rare occurrence of kinked tubing, that's okay, because PEX-a tubing has thermal memory. This allows the repair of kinked tubing with a simple shot of heat from a heat gun. The shape memory of PEX-a tubing offers the unique opportunity for fitting connections. Shape memory allows PEX-a tubing to expand and then shrink back to normal size, creating strong, durable and reliable ASTM F1960 fitting connections.



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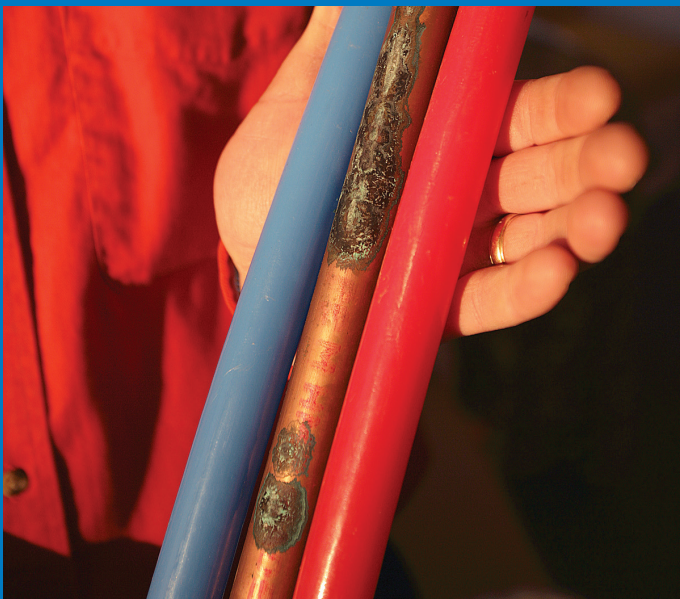
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PEX: The logical choice for plumbing systems compared to copper pipe

When it comes to plumbing a home or building, builders, installers and owners agree—crosslinked polyethylene (PEX) tubing is the most durable, cost-effective and logical choice.

Flexible

PEX tubing offers the tightest bend radius of any plumbing product on the market—as little as 3½" for ½" tubing. This eliminates the need for fittings and connections with each change of direction, and fewer fittings reduce your liability for leaks and problems.

Durable

The re-pipe business has never been better with all the pinhole leaks in copper caused by harsh-water conditions. Because PEX resists the damaging effects of harsh-water conditions, it is usually the top choice for re-pipe jobs.

Reduced liability

In addition to fewer fittings for reduced liability, PEX tubing cannot be dry-fit,* eliminating concerns that a connection is made.

*When using cold-expansion ASTM F1960 fittings.

Resists freeze damage

Because PEX tubing can expand and contract, it is less susceptible to freeze damage compared to rigid copper pipe.

Sustainable

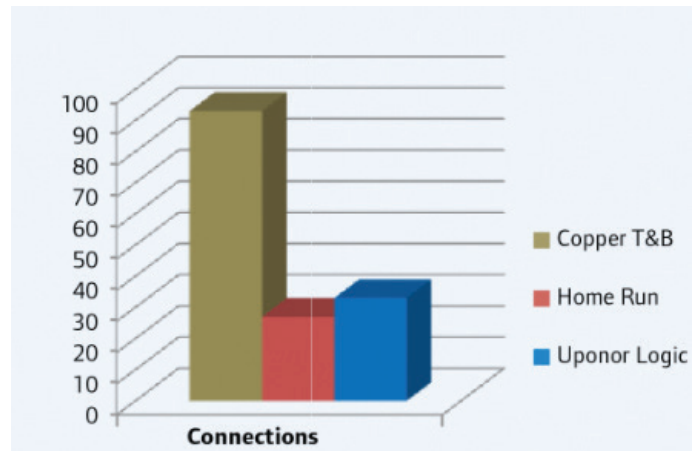
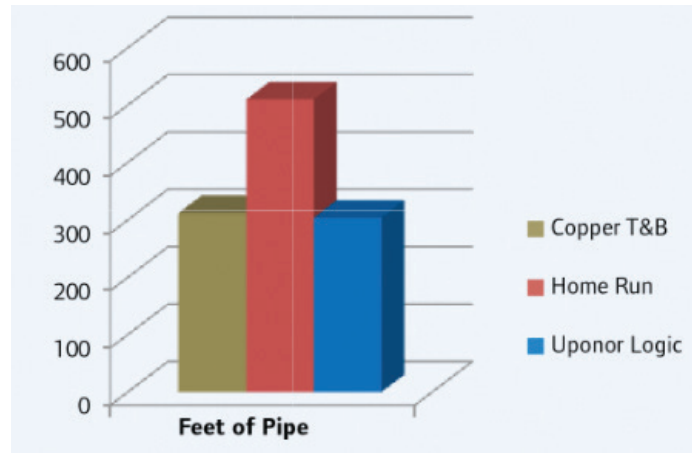
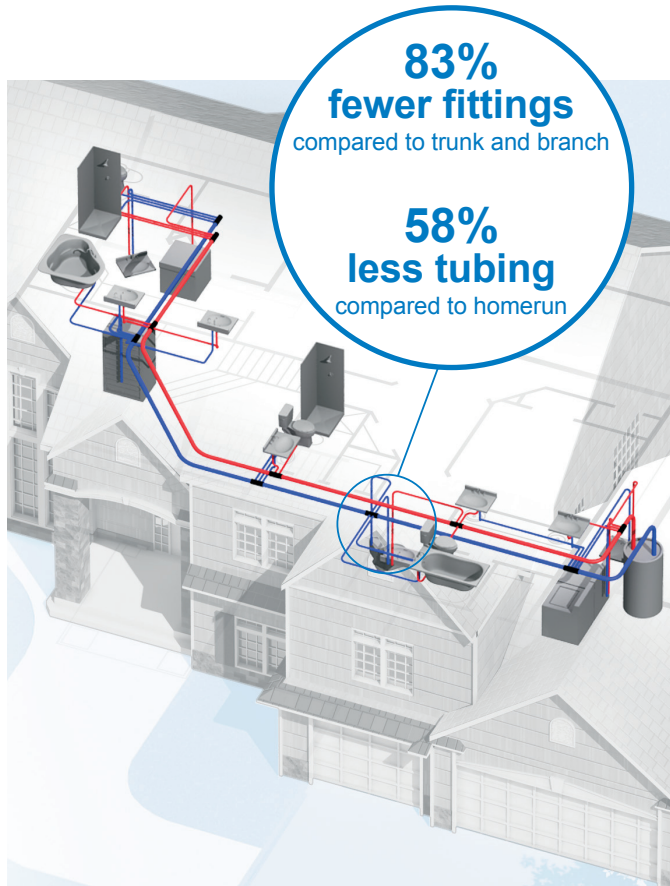
A 2008 life cycle study** showed PEX requires less energy to produce and has an overall lower carbon footprint compared to copper.

**Source: "Life Cycle Inventory of the Production of Plastic Pipes for Use in Three Piping Applications", Franklin Associates, 2008.

Uponor Logic makes sense

Uponor Logic is the smart way to plumb, using flexible Uponor PEX pipe and multiport tees to minimize connections and maximize system performance. With an Uponor Logic layout, plumbing systems typically require fewer fittings than a trunk and branch design and less pipe than a home run design.

Note: The charts at right are based on a residential dwelling with a kitchen and two bathrooms.



Comprehensive offering

PEX tubing and fittings are available in sizes from 1/4" up to 3" to meet any application need.

Safe for your plumbing system

Best of all, PEX tubing is tested in accordance with NSF/ANSI Standard 61: *Drinking Water System Components—Health Effects* and meets or exceeds the health requirements for potable-water products in the U.S. and Canada.

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