



Uponor

PLUMBING AND
RADIANT SYSTEMS

PEX-A VS.
POLYPROPYLENE

FACT SHEET

Crosslinked Polyethylene (PEX-a) Tubing vs. Polypropylene Tubing

Crosslinked polyethylene, or PEX, is a flexible, durable, reliable plastic piping product for use in plumbing, residential fire safety and radiant heating and cooling systems. Polypropylene tubing is a rigid piping product for use in potable and hydronic radiant systems. While both products meet their respective codes, standards and listings for use in potable or hydronic applications, the similarity ends there.

Factors to consider with Polypropylene Fusion-weld Fittings

Polypropylene fusion welds require three vital factors for a proper fitting: temperature, pressure and time. The temperature of the heating tool must be 500°F to ensure proper plastification of the joint. If it is off in temperature, the fitting is not made properly. The second step, pressure, requires an installer to apply perfect lateral pressure to squeeze the fitting together. Any twisting

or change in pressure can result in an improper fitting. However, the third factor, and most concerning, is time. There are four factors of time that have to be taken into account for a proper polypropylene fusion weld: warming-up time, connection time, adaptation time and weld-hardening time. And, after waiting all this time, you need to wait another hour before the joint can be stressed. If any of these factors are not adhered to perfectly, the connection is compromised.

The Ease of ProPEX® Expansion Fittings

The Uponor ProPEX® connection method, however, is a much faster, simpler process. An expansion tool simply expands the tubing and ring, and then after inserting a fitting, the tube and ring shrink back to its original shape, forming a strong, reliable connection within minutes. No more waiting, no more wasted time.

Rigid Polypropylene = More Fittings, Increased Leak Risk

Since polypropylene is a rigid product that cannot bend around corners like PEX, it requires more joints and fittings with each change of direction. This adds additional time and cost to the installation, as well as a greater opportunity for leaks.

Flexible PEX = Faster Installs, Less Chance of Leaks

Because Uponor PEX-a features the tightest bend radius of all PEX tubing — six times the diameter of the tubing, it can bend around tight corners without having to stop to make a fitting. Fewer required fittings mean faster installs and also offer increased peace of mind due to a reduced number of potential leak points.

Comparison Guide

		Uponor PEX-a	Polypropylene
Life Cycle Rating		100+ years	50 years
Liability		Flexible tubing means up to 30% fewer fittings compared to a rigid system, thereby reducing leak risk	Rigid tubing requires a joint with each change in direction, adding potential leak points and up to 30% more fittings, increasing installation time and labor costs
Fitting System	Connection Method	ProPEX expansion fittings require no torches, glues, solvents or gauges, and can be created with manual, battery, air or electrical power	Fusion-weld fittings use an expensive heating tool that requires an electrical connection for power
	Time Requirements	Easy ProPEX expansion fittings can be made in seconds and stressed within minutes	Complicated fusion-weld fittings take up to an hour to create and cure before the fitting can be stressed
Tool	Cost	Relatively inexpensive, range on average from \$50 to \$5,000	Very expensive, average \$20,000
	Variety	Variety of tool options — manual, pneumatic, corded or battery-operated expansion tools available to meet any application need	Can only use the fusion-weld tool which must use electricity for power
	Requirements	Does not require the use of heat, flame, solvents, glues or gauges — just a pull of the trigger (for corded, pneumatic or battery-operated tools)	Tool must get up to 500°F (260°C) before fitting can be made

Uponor Benefits

Customer Service

Dedicated team of customer support representatives available in the U.S. and Canada, Monday-Friday, 8 a.m. to 5 p.m. (CST).

Training

Training center in Apple Valley, Minn., as well as local on-site training from Uponor field techs located in the U.S. and Canada or local manufacturer's reps.

Technical Support

Dedicated technical support center for design assistance in plumbing, fire safety and radiant systems available Monday-Friday, 7 a.m. to 5 p.m. (CST).

Manufacturer's Representatives

Local manufacturer's representatives are available in every U.S. state and Canada.

Warranty

Uponor backs its tubing and ProPEX fittings with a 25-year limited warranty when installed by an Uponor-trained professional.

Uponor, Inc.
5925 148th Street West
Apple Valley, MN 55124 USA
Tel: (800) 321-4739
Fax: (952) 891-2008
Web: www.uponor-usa.com

Uponor Ltd.
2000 Argentia Rd., Plaza 1, Ste. 200
Mississauga, ON L5N 1W1 CANADA
Tel: (888) 994-7726
Fax: (800) 638-9517
Web: www.uponor.ca

