

PEX vs Polyethylene Pipe: Quick Reference Guide for Builders

Overview Plastic piping materials like PEX and polyethylene (PE) have become go-to options for residential and light commercial construction. This printable guide compares the pros, cons, and lessons learned from the field so you can make informed decisions.

Material Breakdown

Feature	PEX (Cross-Linked Polyethylene)	PE (Polyethylene / HDPE)
Flexibility	Highly flexible, easy to maneuver	Flexible in long runs, especially underground
Temperature Resistance	Withstands high temperatures; ideal for hot water	Better suited for cold water and outdoor use
Pressure Handling	Excellent	Very good
Installation	Simple with PEX rings/fittings; good for DIY	Requires heat fusion or mechanical connections
Tools Needed	Special tools for crimping or clamping	Heat fusion tools or mechanical couplings
Cost	Moderate material cost; faster install	Lower material cost, especially in large quantities
Durability	Long lifespan; UV sensitive if exposed	Extremely durable in underground applications
Code Acceptance	Widely accepted in residential plumbing	Common in utilities and irrigation
Common Use	Home plumbing, heating systems, remodels	Water mains, underground water supply, irrigation

Pros and Cons at a Glance

PEX Pipe

Pros

- Highly flexible
- Great for hot and cold water
- Ideal for new construction and retrofits
- Quicker to install with fewer fittings
- Excellent for radiant heating systems

Cons

- Degrades under prolonged sunlight exposure
- Requires special fittings and tools
- Not ideal for direct outdoor or buried use

Polyethylene (PE) Pipe

Pros

- Excellent corrosion resistance
- Works well in underground installations
- Handles freezing temperatures and rough soil
- Long-term cost savings for outdoor infrastructure

Cons

- Less common in interior home plumbing
- Requires fusion tools or mechanical joints
- Limited use for hot water applications

Lessons Learned from the Field

- **PEX wins for speed:** Builders love PEX for the speed and simplicity it brings to residential installs. You can bend around corners, reduce fittings, and train crews quickly.
- **PE dominates the outdoors:** If you're dealing with trenches, tough ground, or long-haul water supply, PE is the workhorse.
- **Sunlight is the enemy:** PEX and some PE grades will degrade under UV exposure. Always protect exposed piping.
- **Heat fusion vs mechanical:** PE often requires more training and equipment, especially for heat fusion. If you're not set up for it, mechanical connections are a must.
- **Don't overlook code:** PEX is broadly approved in residential codes. PE might trigger questions in plumbing inspections unless you're working on utilities or irrigation.

Quick Decision Guide

Use Case	Recommended Pipe Type
Interior residential plumbing	PEX
Radiant floor heating	PEX
Hot and cold water supply	PEX

Use Case	Recommended Pipe Type
Outdoor water mains	PE
Underground irrigation lines	PE
DIY-friendly installations	PEX
High-exposure or utility applications	PE

Pro Tip: Still on the fence? Bring this guide to your next supplier meeting or spec review. It helps spark the right questions before the first pipe is cut.