



## Water: Today & Tomorrow



*“Water promises to be to the 21st century what oil was to the 20th century.”*  
 – Fortune Magazine

AWWA (American Water Works Association) continues to study the issue of water leakage. Water main breaks, corrosion and weakened joints are the primary reasons water pipes leak. One study, which included 43 states, showed an average of 16 percent of water was “unaccounted for” or “unbilled.” Some reported leakage in that study was as high as 50 percent. It is estimated that 2.5 billion gallons of processed, clean water is lost nationwide per day. For years, utilities have considered a 20 percent water loss to be acceptable. Municipalities and taxpayers can no longer afford such waste.

Many communities are faced with aging, leaking, corroding underground water pipes. Municipal leaders must determine the pipes that will best secure the future of their infrastructure. Typically, the choices will be between PE, PVC and ductile iron pipe.

PE does not leak, corrode, or deteriorate. It is flexible, easy to install and the overall life-cycle costs are less than PVC or ductile iron. It’s the safe, smart choice for today and many years to come.



### Example of local water loss:

With AWWA’s allowable leakage rates, a city with 100,000 people would permit as much as 12 million gallons of water to leak out of PVC-gasketed pipe per year and over 13 million gallons of water to leak out of ductile iron pipe per year. **The allowable leakage rate for PE pipe is ZERO.**

## What is HDPE PIPE?

**High-Density Polyethylene Pipe (HDPE or PE Pipe)** is made from ethylene, which can be derived from either crude oil or natural gas. PE pipe is extremely strong, durable, flexible, corrosion free and chemical resistant. These features make it perfect for a variety of underground conditions and help it last up to 100 years. The smooth walls allow for less friction, which increase flow through the same diameter as that of other pipes.



When installed, the pipe is joined by a heat fusion process, which prevents leakage. By using PE pipe, municipalities save a vast amount of water and reduce repair rates. This translates into a significant cost savings for the life of the pipe. PE pipe can carry potable water, wastewater, chemicals, hazardous wastes and compressed gases. PE is the preferred piping material for natural gas distribution because there is no tolerance for leaks and no worries about corrosion.



PE pipe photos courtesy of Drew L. Wilson

## How Does PE PIPE Compare?

	PE	PVC	Ductile Iron
<b>JOINT LEAKS*</b> Installed leakage allowance	Zero gallons per day, per mile	113 gallons per day, per mile	125 gallons per day, per mile
<b>TRENCHLESS</b>	The preferred choice Saves money, completes work on time Little to no disruption to roads and highways	None in the past Requires special joining	None in the past Requires special joining
<b>GREEN CHOICE</b>	Safe when manufactured, used, and disposed of Preserves precious water supply and saves electricity	Media has reported environmental concerns with the creation and disposal of PVC	Begins to corrode after a few years and may allow bacterial growth
<b>CORROSION</b>	None	None	After a few years, ductile iron will corrode
<b>INFILTRATION</b>	None: No contaminants entering the pipe system	Weakened joints and shifting soils do not allow for a tight seal	Weakened joints and corrosion can lead to leakage
<b>FLEXIBLE/ LIGHTWEIGHT</b>	Flexible: Saves time and money transporting and installing	Not flexible - more difficult to transport and install	Inflexible and heavy more difficult to transport and install

\*Based on 12-inch AWWA C906(for PE), C900(for PVC) and C110(for DI) pipe at 100 psi.

*Be a leader in your Community.  
 Choose PE pipe today for a safer tomorrow.*

*“Water quantity and quality are the biggest environmental issues that we face in the 21st century”*

Former EPA Administrator, Christie Whitman

