

HDPE Advantages for Water

Some distinctive advantages of HDPE pipe that provide important benefits for water applications are listed below:

1. Heat Fused Joints -- Benefits

- * HDPE pipe can be heat fused together to form a joint that is as strong or stronger than the pipe itself and is leak free.

 - o This eliminates the potential leak points every 10-20 feet as found with PVC and Ductile Iron bell and spigot connections.

- * The Life Cycle Cost of HDPE pipe differs from other pipe materials because the “allowable water leakage” is zero rather than typical leakage rates of 10 to 20% for PVC and Ductile Iron.

- * HDPE pipe fused joints are self restraining and costly thrust restraints or thrust blocks are not required.

- * HDPE pipe’s fused joints simply do not leak, eliminating infiltration and exfiltration problems experienced with alternate pipe joints.

2. Flexible and Fatigue Resistant -- Benefits

- * HDPE pipe can be bent to a radius 25 times the nominal pipe diameter (Example: 12” HDPE can be cold formed in the field to a 25ft radius). This can eliminate many fittings required for directional changes in a piping system where fittings and thrust blocks or restraints are required with alternate materials.

- * The flexibility of HDPE pressure pipe makes it well suited for dynamic soils including areas prone to earthquake.

- * HDPE pressure pipe can accept repetitive pressure surges that significantly exceed the static pressure rating of the pipe.

3. Construction Advantages -- Benefits

- * The combination of flexibility and leak free joints allow for unique and cost effective types of installation methods that the rigid PVC and Ductile Iron pipes can't use with bell and spigot connections. These alternate installation methods (Horizontal Directional Drilling, Pipe Bursting, Sliplining, Plow and Plant, Submerged or Floating Pipe, etc.) can save considerable time and money in most potable water applications.

- * Polyethylene pipe is produced in straight lengths up to 50 foot long and coiled in diameters up through 6”. Coiled lengths over 1000ft are available depending on size providing low cost installations..

- * Polyethylene is about one-eighth the density of steel, it does not require the use of heavy lifting equipment for installation.

4. Cost Effective, Long Term and Permanent -- Benefits

- * Polyethylene pipe installations are cost effective and have long term cost advantages due to its physical properties, leak free joints and reduced maintenance costs.

* The polyethylene pipe industry estimates a service life for HDPE pipe to conservatively be 50-100 years. This relates to savings in replacement costs for generations to come.

5. Corrosion and Chemical Resistant -- Benefit

- * HDPE pipe will not corrode, tuberculate or support biological growth.
- * HDPE pipe has superb chemical resistance and is the material of choice in harsh chemical environments
- * The advantages of corrosion and chemical resistance over traditional metal pipes are shared by many plastic pipes, but HDPE pipe uniquely combines these attributes with the aforementioned advantages of heat fused joints, flexibility and fatigue resistance.

6. Handling -- Benefits

- * It is much easier to handle and install HDPE pipe vs. the heavier, rigid metallic or concrete pipe segments, allowing for huge cost advantages in the construction process.
- * Polyethylene pipe is better able to structurally withstand an impact than PVC pipe, especially in cold weather installations when other pipes are more prone to cracks and breaks.

7. Hazen Williams C Factor is 150 and doesn't change over time - Benefit

- * HDPE pipe has a smooth ID that does not corrode or tuberculate and maintains its flow capability over time.
- * The C Factor of Ductile Iron pipe is dramatically reduced over time due to corrosion and/or tuberculation.