

TECHNICAL BULLETIN

PVC vs. DUCTILE IRON – TECHNICAL MISCONCEPTIONS

PVC pipe is a dependable choice for water and sewer piping alongside ductile iron (DI) piping. When discussing the technical aspects of PVC pipe, there are several common misconceptions that must be addressed, particularly regarding its strength and environmental impact.

Misconception: PVC pipe is not as strong as ductile iron pipe (7)

FACT: DI pipe is severely limited in its deflection by the lining used - 3% for cement-mortar lining and 5% for flexible lining. Additionally, DI Pressure Class pipe have thinner walls, making PVC the stronger option (1).

Misconception: PVC is weak and cannot withstand pressure surges compared to ductile iron pipe

FACTS:

- PVC's flexibility allows it to absorb shocks from sudden flow changes better. (2)
- DI has a higher modulus of elasticity than PVC, which causes large pressure surges to develop as compared to PVC pipe. (2)

Misconception: Buried pipe location and leak detection is difficult with PVC (6)

FACTS:

- Locator wire or tracer wire is also commonly laid along PVC pipe during installation to help find assets later on. (9)
- Ground penetrating radar (GPR) is the best tool for discovering PVC due to its accuracy in mapping underground piping.

Misconception: PVC production releases dangerous chemicals (7)

FACTS:

- NSF/ANSI/CAN 61 testing for PVC pipe ensures that materials in contact with drinking water do not leach harmful contaminants. (3)
- NSF tests all pipe products at least twice per year. Any regulated contaminants that are detected must fall below the US EPA and Health Canada acceptable levels. (3)

Misconception: PVC melts under high heat (7)

FACTS:

- PVC has one of the highest melting temperature of plastic pipes due to the chlorine in the ingredients. (5)
- The maximum operating temperature of PVC pipe is 140°F. The pipe's pressure rating, and other performance characteristics, must be de-rated for all temperatures above 73.4°F (23°C) (8)

References

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