

FUSIBLE PVC® PIPE USED IN OVER 10,000 COMPLETED HDD INSTALLS

Overview

As utilities tackle the challenges of rehabilitating and expanding aging water distribution, wastewater collection and electrical power networks, they are increasingly turning to trenchless installation methods to reduce cost and minimize disruption to the public. Horizontal directional drilling (HDD) continues to grow in acceptance as utilities gain experience with the installation method and the number of HDD contractors continues to expand. In many areas HDD installation has closed the cost gap versus direct bury, leading utilities and design engineers to increasingly incorporate HDD alternatives in the design phase of their projects. Prior to 2004, the primary pipe materials used in HDD applications were steel and HDPE.

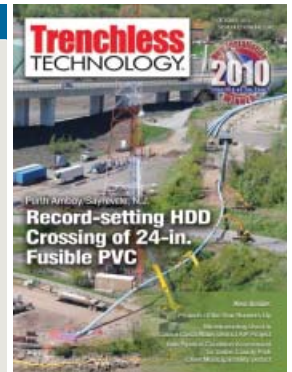
PVC pipe, already installed in many infrastructure networks, now accounts for more than 70% of the new water pipelines installed in the U.S. The steady growth of PVC pipe in water and wastewater systems can be linked directly to its combination of high strength, light weight, corrosion resistance, and its proven performance record over the past half century. With its superior resistance to hydrocarbon permeation and oxidation by chlorine-based disinfectants, PVC pipe has proven to be an ideal choice to ensure safe, reliable drinking water while providing a long service life.

As HDD projects continue to increase in size, scope, complexity, and distance, owners, engineers, and drill contractors are turning to Fusible PVC® pipe to downsize boreholes, simplify reconnections, and reduce project risk with higher tensile strength. Since its introduction in 2004, Fusible PVC® pipe has gained rapid acceptance as a cost effective HDD solution through thousands of competitively bid municipal and industrial projects, and has established an outstanding operating record in thousands of in-service installations.

Neil Smith of Mears Group comments, "Fusible PVC® pipe is allowing us to establish new frontiers in HDD applications with plastic pipe. UGSI's project management, engineering, fusion services and construction support throughout each project are outstanding."

Milestones

- More than 7 million feet installed by HDD
- Over 40 HDD crossings completed in excess of 3,000 LF
- Longest Single Continuous Pull-In Lengths: 7,000' (30"), 6,400' (16"), 5,545' (18"), 5,535' (4"), 5,400' (24"), 5,120' (10"8")
- Trenchless Technology 2014 and 2015 New Installation Honorable Mention Project of the Year
- Trenchless Technology 2010 New Installation Project of the Year



Fusible PVC® Pipe Advantages

Uses standard fittings to re-connect to PVC and Ductile Iron pipe

- Eliminates electro-fused couplings or in-pit fusion of adaptors
- Simplifies maintenance and fittings inventory
- Simplifies future maintenance for utility crews

Smaller OD for given ID and pressure class

- Reduces HDD borehole diameter
- Eliminates expensive transition/reducer pieces
- Reduces size and cost of associated valves and fittings

Gasket-free with greater pull strength and less pipe weight

- Monolithic pipe material with the highest tensile strength to weight ratio on a comparative material basis
- No relaxation period required for reconnection
- Often enables use of a smaller HDD rig
- Greater resistance to external soil loads for deep installations

INSTALLATION PROFILE: HORIZONTAL DIRECTIONAL DRILLING
FUSIBLE C-900® | FUSIBLE C-905® | FPVC®



Corpus Christi, TX: 5,545 LF pull of 18" & 4"



Johns Island, SC: 20,000 LF of 24"



Woodbridge, NJ: 11,000 LF of 30" Casing



Florida: >850,000 LF of 4" - 36"



Portland Int'l Airport: 3,800 LF pull of 24" & 6"



Temecula, CA: 1,360 LF of 30"



Boston, MA: 1,150 LF (6 x 8") Conduit



Sunset Beach, NC: 4,200 LF of 12" & 10"



Jersey Shore, PA: 3,200 LF pull of 14"



Napa, CA: 15,000 LF of 12" - 30"



North Dakota: >500,000 LF of 4" - 24"



Beaufort, SC: 1,300 LF pull of 36"

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Ambridge, PA: 5,000 LF of 20"



Easton, MD: 2,400 LF of 16" & 20"



Gloucester, MA: 2,265 LF of 20" (Parallel)



Wailuku, HI: 4,700 LF of 20" & 24"



Lawrence, KS: 30,500 LF of 12" - 36"



Fort Morgan, CO: 4,300 LF of 12"



Wakpala, SD: 4,700 LF pull of 24"



Bellhaven, NC: 4,300 LF pull of 4 x 4"



Macon, GA: 4,300 LF pull of 24"



Indianapolis, IN: 4,600 LF of 8"



St. Petersburg, FL: 1,800 LF pull of 30"



Michigan: > 250,000 LF of 4" - 30"

Underground Solutions, Inc. provides infrastructure technologies for water, wastewater and power cable conduit applications. Underground Solutions' Fusible PVC® pipe products, including Fusible C-900®, Fusible C-905® and FPVC®, utilize patented technology to produce a fused monolithic, fully-restrained, gasket-free, leak-free piping system ideal for trenchless (horizontal directional drilling, pipe bursting and sliplining) or conventional "open-cut" installations and are available in 4-inch to 36-inch diameters. The combination of standard fittings and lower weight with higher flow for a given pressure class versus other thermoplastic pipes ensures that Fusible PVC® pipe brings greater economy to most pipeline projects.



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