

FUSIBLE PVC® PIPE ADVANCES WATER MAIN PIPE BURSTING MARKET

Overview

As utilities tackle the challenges of rehabilitating and expanding aging water distribution systems they are increasingly turning to trenchless installation methods to reduce cost and minimize disruption to the public. Pipe bursting water mains continues to grow in acceptance as water utilities gain experience with the method and the number of skilled pipe burst contractors expands. In many parts of the country, pipe bursting is less expensive than direct bury replacement, particularly when restoration costs are high and social impacts are factored into the decision.

Prior to 2004, the primary pipe material used in pipe bursting was HDPE, limiting alternatives to water utilities and consulting engineers more familiar with PVC and ductile iron pipe. PVC pipe, already accepted in most utility infrastructure networks, now accounts for more than 70% of the new water pipelines installed in the U.S. The steady growth of PVC pipe can be linked directly to its combination of high strength, light weight, corrosion resistance, and proven performance record over the past half century. With its superior resistance to both hydrocarbon permeation and oxidation by chlorine-based disinfectants, PVC pipe has proven to be an ideal choice to ensure safe, reliable drinking water and a long pipeline service life.

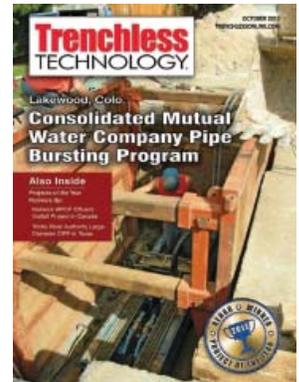
The option of using Fusible PVC® pipe has given many water utilities the impetus to move forward with pipe bursting rehabilitation programs by allowing them to maintain material and dimensional continuity, while saving money and simplifying maintenance. Since its introduction, Fusible PVC® pipe has been employed in hundreds of pipe bursting projects. Pipe bursting water lines is a minimally invasive approach which has proven to be a reliable method for utilities to replace aging, undersized water lines, including cast iron, ductile iron, asbestos cement, steel, and other installed pipe materials. Additionally, pipe bursting is the only water line rehabilitation method that provides a new, structurally independent solution with full pressure capacity and the ability to maintain or increase the ID of the original host pipe.

Mike Queen, President of Consolidated Mutual Water in Lakewood, CO, stated: "We've saved \$9.827 million using pipe

Pipe Bursting Milestones

- More than 1 million LF installed or under contract
- Projects completed in 4-inch to 24-inch sizes

bursting instead of open-cut since the inception of our Water Line Replacement Program in 2010." For its leadership in water main pipe bursting, Consolidated Mutual Water was awarded Trenchless Technology magazine's 2013 Rehabilitation Project of the Year Award.



Fusible PVC® Pipe Advantages versus HDPE

Smaller pipe OD for equivalent ID and pressure class

- Reduces size of expander head
- Minimizes soil displacement, potential for surface heave and disturbance to adjacent utilities
- Minimizes pipe OD when upsizing line capacity

Standard fittings and tapping procedures to reconnect

- Eliminates electro-fused couplings
- Simplifies fittings inventory and future line maintenance

Greater pull strength and less pipe weight

- More than 2x the tensile strength and pull force of HDPE
- No relaxation period required for reconnection

Excellent chemical resistance to

- Hydrocarbon permeation
- Chlorine-induced oxidation

Excellent scratch resistance to broken pipe shards

INSTALLATION PROFILE: PIPE BURSTING
FUSIBLE C-900® | FUSIBLE C-905® | FPVC®



Lakewood, CO: 173,500' of 8" & 6"



Billings, MT: 21,000' of 12" & 8"



Wilmington, NC: 5,000' of 20"



Ypsilanti, MI: 23,000' of 16", 12" & 8"



Lee's Summit, MO: 44,000' of 8" & 6"



American Canyon, CA: 7,300' of 12"



Ray, ND: 15,000' of 8" & 6"



Middleburg, FL: 7,200' of 12"



Minneapolis/St. Paul, MN: 7,000' of 8"



Apra Harbor, Guam: 9,000' of 12"



Albuquerque, NM: 8,000' of 12" & 6"



Lewiston, ME: 1,550' of 8"

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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