



HDD PE4710 HDPE PIPE REPLACES LARGE DIAMETER HIGH PRESSURE WATER LINE

Project Wins Multiple Awards

LEAGUE CITY, Texas - Gulf Coast Water Authority (GCWA) and the City of League City, Texas were faced with the need to renew a critical water transmission main. The 39-inch PCCP (prestressed concrete cylinder pipe) water main, owned by GCWA and operated by League City, required replacement of approximately 6,800 feet along Calder Road. The main, which interconnects the City of Houston and Galveston County, had been suffering from severe breaks and leaking joints. Maintaining capacity was imperative. GCWA considered several trenchless methods, choosing Swagelining™ with HDPE pipe as it provided the best value. Murphy Pipeline Contractors utilized ISCO Industries for its HDPE pipe for Swagelining™ due to ISCO's knowledge of the product, services, and ability to meet critical time restraints with custom fabrication. ISCO provided 1000 mm OD pipe (39.37") inside a 39" ID host pipe.

The project involved four pulls ranging from 1,250 feet to 2,100 feet in length. The long pull lengths allowed for long-fused sections of HDPE to be installed, eliminating the potential for future leaks. For each pull, 50 foot lengths of pipe were butt-fused using a McElroy 1648 machine.

The pipe was installed in extremely tight quarters with an unforgiving and non-negotiable deadline. The team worked around a right-of-way with only one traffic lane shut down allowed, with no interruption to water provision to League City. The technology met

all design parameters and increased flow and capacity. The result was a fully structural pipe with 125 psi operating pressure, 187 psi recurring surges, and 250 psi occasional surges.



During the Swagelining™ process the HDPE pipe is temporarily reduced as it is pulled through the reduction die.

The Calder Road Project represents the largest diameter, fully structural pipe installed to date in North America utilizing the Swagelining™ technology. The utilization of this technology with HDPE pipe allowed the owner to meet all design parameters and increase the flow capacity. Swagelining™ offers a solution for pressure pipe renewal that is unique in today's trenchless pressure pipe market.

During the process, sections of HDPE pipe are butt fused together. The external bead is removed and the pipe is pulled through a reduction die. The pipe is temporarily reduced below the ID of the 39-inch PCCP host pipe to allow for insertion, going from 39.37" to 36.00". The new pipe is pulled through the host pipe and then the force is removed. Within two hours 90% of reversion occurs. The pipe



returns to the original size overnight. The end product is a fully structural pipe with no annular space and maximized capacity.

***Fully structural HDPE PE4710 DR17
 39.37-inch pipe with a working
 pressure rating of 125 PSI was used***

The project received two industry awards. It was named TRENCHLESS TECHNOLOGY magazine's 2014 Trenchless Project of the Year, and Project of the Year by the Plastics Pipe Institute, Inc. (PPI), the major trade association representing all segments of the plastic pipe industry.

"With aging water pipelines across the country failing at an alarming rate," stated Tony Radoszewski, PPI president, "this project showcases the massive benefits and options for using plastic pipe to replace and rehabilitate existing pipe with minimal impact on the surrounding community."



Receiving the PPI Project of the Year Award are ISCO's Steve Sandstrum (second from left) and Michael Whitehouse, (third from left). Presenting the award are Camille Rubeiz, director of engineering for PPI's municipal and industrial division (left) and Tony Radoszewski, president PPI (right).

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About PPI

The Plastics Pipe Institute Inc. (PPI) is the major trade association representing all segments of the plastic pipe industry and is dedicated to promoting plastics as the material of choice for pipe applications. PPI is the premier technical, engineering and industry knowledge resource publishing data for use in development and design of plastic pipe systems. Additionally, PPI collaborates with industry organizations that set standards for manufacturing practices and installation methods. For additional information, go to: www.plasticpipe.org.