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BUILDING COMMUNITY

CORRUGATED HDPE PIPE USE NOW INCLUDES LARGER DIAMETERS ON PRINCE EDWARD ISLAND

Under-Road Project First for 42-inch Pipe

CHARLOTTETOWN, Prince Edward Island - While corrugated high-density polyethylene (HDPE) pipe has been used in diameters up to 900 mm (36 inches) for many years, the province of Prince Edward Island recently launched what has become a country-wide expansion in allowable sizes of HDPE pipe used for drainage systems.

The escalation to larger diameter pipe usage began with the successful installation in April 2009 of a 1200 mm (42-inch) diameter culvert pipe underneath a highway. The pipe, made locally by Canadian manufacturer Soleno, meets the specifications of the AASHTO M294 for dual-wall corrugated HDPE pipe. The AASHTO standard, normally referenced for uses in the United States, was used as the qualifying specification since CSA Standards (Canada) include pipe only up to 36-inches in diameter. A total of 40 meters (132 feet) of the larger HDPE pipe was installed under a two-lane highway with two meters (78 inches) of cover. HDPE material was selected because it is proven to remain durable and resistant to high acidity levels – a characteristic feature of the native water runoff in the region. HDPE material is impervious to these water conditions.

"We want products that will last and perform. In our area, economics and the environment are the big drivers. And HDPE pipe provides a cost advantage while helping to protect our sensitive ecosystem." Stephen Yeo, Chief Engineer

"The use of HDPE pipe in under-the-road applications is growing across North America," stated Tony Radoszewski, executive director of the Plastics Pipe Institute, Inc. (PPI). "We are finding that once HDPE pipe is used in smaller diameter sizes, the use of larger diameters is a natural progression and that has been the case in Canada, where larger diameter pipe use continues to increase. The importance of HDPE pipe's inherent ability to withstand acidity and salt is always a plus, especially in localities near the ocean such as Prince Edward Island."

In this application, there were also freeze-thaw cycles of concern and soil conditions of sand, silt and clay which additionally impacted material selection. HDPE

pipe performs well in all these extreme circumstances, offering superior abrasion and corrosion resistance, and providing ductility and toughness. HDPE pipe material characteristics enable continuous performance with uncompromised functionality, despite the movement or compaction of surrounding earth.

"The province has been renewing a great deal of aging infrastructure in the past few years, and we are always looking for dependable materials and advancements in technology," explained Stephen Yeo, chief engineer with the Prince Edward Island Department of Transportation and Infrastructure Renewal. "Due to the site condition and because of localized acidic run-off, we chose HDPE material to ensure long service life for this culvert. Our department has had very good success with HDPE pipe in smaller diameter applications, prompting us to explore the use of larger diameter HDPE especially in under-highway culvert applications."

The HDPE pipe was installed close to the city of Charlottetown, the capital of Prince Edward Island. Charlottetown has a population of over 32,000 people and is located on the south shore of Prince Edward Island, which is off the eastern coast of Canada.

The pipe used was Soloflo® Max from Soleno, which has a double wall -- a smooth interior for optimum flow and a corrugated or ribbed exterior for strength. The design of the watertight pipe with an integral bell and gasket ensures the pipe sections stay intact throughout Canada's aggressive weather seasons and ensures silt infiltration does not occur. Because the HDPE pipe comes in six meter (20 foot) lengths, installation time can be reduced, and fewer joints are needed as compared to similar concrete pipe installations.

According to Yeo, the performance of the larger diameter pipe combined with the successful history of use of smaller diameter corrugated HDPE pipe is leading to more projects. "We want products that will last and perform," he said. "In our area, economics and the environment are the big drivers. And HDPE pipe provides a cost advantage while helping to protect our sensitive ecosystem."

For additional information about corrugated HDPE pipe, its use and applications, as well as technical details, please visit: www.plasticpipe.org.

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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 method.