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BUILDING COMMUNITY



HDPE PIPE SERVES INCREASING DEMANDS FOR STORM WATER SOLUTIONS

*Canadian Manufacturer and Local Supply
Are Keys to Success*

KELOWNA, BRITISH COLUMBIA – The City of Kelowna's storm water upgrade program continues to be on time and within budget because high-density polyethylene (HDPE) pipe is being used for an on-going ditch in-fill project. The project started in 2003 and Phase II was completed in 2007. Additional projects are expected to follow as the region's population continues expanding at a rapid pace.

Kelowna, a name derived from the native term for a female grizzly bear, has a population of some 166,000 and is just north of the state of Washington, an hour and a half drive from the United States border. With Alpine skiing at nearby Big White and Silver Star mountain resorts, golf and water sports during the summer, plus many vineyards and lakefront scenery, Kelowna's popularity is making it one of the fastest growing cities in North America and the third largest area in British Columbia.

This continuing rate of growth demands ongoing effective storm water management. Because corrugated HDPE pipe is being used, that objective is being met, and long-term savings are being realized. When HDPE pipe was introduced as an alternative, it became possible for Kelowna to take advantage of a newer, more flexible system characterized by tough and durable pipe strings, enhanced

abrasion and corrosion resistance, and outstanding joint performance.

"We usually think of plastic pipe taking care of large cities, providing natural gas, supplying potable water and controlling storm water runoff, stated Tony Radoszewski, executive director of the Plastics Pipe Institute, Inc. (PPI). "This is because there are numerous benefits. HDPE pipe can be threaded under busy streets to keep traffic flowing, for example. It lasts a very long time. And is easy to handle for the crew. Plus the bigger the job, the more significant the savings in product cost and labor.



Easy to move, more than 400 meters of HDPE pipe was used for a water drainage upgrade project here.

"Small towns can also benefit. And so can rural areas. Members of the Plastics Pipe Institute continue their efforts to reach all communities and supply pipe that is reliable and cost-effective.

"The City of Kelowna in beautiful British Columbia is now using HDPE pipe because a PPI member company, Armtec, established a manufacturing plant in the Providence. This



provides product locally to reduce shipping time and costs, and adds jobs to the area near the plant.

"The residents and city officials of Kelowna are benefiting from the on-time and on-budget improvement of their storm water system because HDPE pipe, made locally, is being used. It's possible for every city, large and small, urban, suburban and rural to be a hero."

The use of HDPE pipe by municipalities for upgrade projects is seen as a growing trend by the PPI

Recognizing the ability of corrugated HDPE piping systems to meet the needs of the region with such advantages, Armtec, (Guelph, ON), opened the Province's first large diameter corrugated HDPE pipe plant to serve the interior of British Columbia. In this area, reinforced concrete pipe (RCP) isn't the optimal choice because several factors combine to escalate expenses including the distance to job sites, the weight of the pipe and shipping fees.

Upon completion of several successful pilot projects conducted by the City of Kelowna Engineering and Operations departments, the first large-scale municipally-funded HDPE pipe project was completed in 2003. The ditch in-fill application involved more than 420 linear meters (1365 feet total) of 900 mm, 750 and 381 mm (36, 30 and 15 inch) diameter HDPE pipe. The system was designed by MMM Group (formerly Bel MK Engineering) and installed by Ansell Construction at Greenwood Court and June Springs Road.

The corrugated HDPE pipe's standard 6 m (20 ft) lengths meant that fewer joints were

required throughout the project; reducing the risk of leaks and leading to faster installation. The ability to 'nest' smaller diameters into larger pipes greatly improves shipping efficiency and reduces transportation costs. These benefits added up to significant savings for both the municipality and the installation contractor.

Each 6m (20 ft) section of the 900 mm (36 inch) diameter corrugated HDPE pipe used for the Kelowna project weighs less than 181 kilograms (400 pounds), lighter than all other material options, allowing the use of light equipment in place of cranes and other heavy equipment required for concrete pipe of the same large diameter.



A two-man crew quickly positioned BOSS 2000 HDPE pipe for the ditch in-fill project.

"Using the same backhoe to dig the trench, lift the pipe in place and then backfill is a clear win for the installation contractor," said Ceri Howell, vice president of sales at the time for Armtec.

"Our crews found the HDPE pipe easy to install because of its light weight. We were



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also pleased with how well the pipe sections fit together,” said Terry Frame (ret.) of Ansell.

The pipe has a smooth inner wall with a corrugated exterior and is certified to Canadian Standards Association (CSA) B182.8 (Storm) manufacturing standards. This requires a minimum pipe wall stiffness of 320 Kpa (46 psi) throughout the diameter range 100-900 mm (4”-36”) and a laboratory internal hydraulic pressure test for bell-and-gasket pipe.

BOSS 2000® HDPE pipe also meets the standards of Master Municipal Construction Documents (MMCD) Section 02721. The MMCD association is a non-profit organization funded by municipalities and others in British Columbia to bring well defined, systematic and continuously improving documents for construction of roads, sidewalks, sewers, water, etc.

“Contractors, engineers and utilities base their decision to use corrugated HDPE pipe on its merits. HDPE pipe is well-known for meeting all applicable standards, favorable economics and ease of installation,” explained Howell.

The use of HDPE pipe by municipalities for upgrade projects is seen as a growing trend by the PPI.

“Economics and logistics are key factors to consider and always need to be looked at,” offered Radoszewski. “Large diameter corrugated HDPE pipe, like that being used in Kelowna, has the broadest application. It has good abrasion resistance, is easy to handle and delivers excellent joint performance.

“The main drawback for any pipe installation up in this rugged area is logistics...weight of the product and transportation. By its very nature, corrugated HDPE pipe weighs a lot less than RCP. And this advantage means

that a lot of pipe can be shipped on one truck. Plus HDPE sections can be nested, so you can ship many sticks in one load, providing significant cost and time savings.

“With fuel costs skyrocketing, the ability to pack more lengths of pipe on one truckload has become not just a consideration, but a major determining factor as to whether a contractor will make or lose money.”

For additional information and technical literature, go to: www.plasticpipe.org



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.