Advanced Drainage Systems

Fast Stormwater Pipe Installation For Florida’s New Express Lanes

BROWARD COUNTY, Florida – To speed up work on Florida’s Express Lane project, miles of corrugated polypropylene pipe were used for stormwater drainage. The use of the pipe that ranges in sizes from 18- to 36-inch diameters, enabled the stormwater system work to be done quickly while reducing costs and providing a system with a designated 100-year design service life (DSL). The pipe was HP Storm from Advanced Drainage Systems, Inc. (ADS) (Hilliard, Ohio) with manufacturing plants worldwide including Sebring and Winter Garden, Florida.

The specification for the stormwater drainage system called for pipe that would have a water-tight joint between sections, have a 100-year design service life, fit the budget and meet FDOT requirements that included post-installation inspection. Pipe alternatives in FDOT specifications include reinforced concrete pipe (RCP) and two types of corrugated thermoplastic pipe -- high-density polyethylene (HDPE) and polypropylene.

FDOT has approved the use of polypropylene pipe in 12 through 60-inch diameters for 100-year design service life applications in accordance with FDOT’s 2014 Standard Specifications for Road and Bridge Construction, Section 948-7. It may be selected by the contractor for any project where HDPE, another type of thermoplastic, pipe is allowed. This means that FDOT contractors, and local communities may also choose to use polypropylene pipe for their storm drainage systems.

Used to construct the stormwater drainage system for the new I-95 Express Lanes, polypropylene (PP) pipe meets technology with a dual-wall profile design for superior performance and durability. The smooth interior wall offers additional strength as well as superior flow. The polypropylene pipe meets ASTM F2736, ASTM F2881 and AASHTO M330 for the respective diameters. It is approved by the Army Corps of Engineers for storm drainage applications. HP Storm pipe has an extended, reinforced bell with a polymer composite band and dual gaskets that add an additional factor of safety within each joint. The joint performance meets or exceeds the 10.8 psi laboratory performance standards per ASTM D3212 requirements.

One advantage of the ADS polypropylene pipe is that it is stiffer, which means the pipeline consistently passed Florida DOT’s mandate that all projects undergo a laser profile inspection that checks for joint gaps, cracks, and the ovality of the pipe. If a pipeline or any section does not pass the laser profiling examination, FDOT may require it to be repaired, reinstalled, or entirely replaced. Conversely, in rigid pipes such as RCP, contractors have reported finding hairline cracks and joint gaps during laser profile inspection, which needed to be grouted, adding labor time and costs.

ADS HP Storm is a high-performance polypropylene pipe for gravity-flow storm drainage applications that couples polypropylene resin with the Florida Department of Transportation (FDOT) 2014 Standard Specifications for Road and Bridge Construction, Section 948-7. The FDOT standard has been revised to include 100-year design service life pursuant to AASHTO M330. The pipe is typically used for side drain, cross drain and storm sewer projects.

The thermoplastic pipe used on the I-95 Express Lanes project came in 20-foot lengths, reducing installation time and increasing crew efficiency.

Nesting different diameters of the pipe reduced the number of truck deliveries and storage space needed on-site for constructing the I-95 Express Lanes stormwater drainage system in Florida.

About the Company
Advanced Drainage Systems is a leading provider of innovative water management solutions in the stormwater and on-site septic wastewater industries, providing superior drainage solutions for use in the construction and agriculture marketplace. For over 50 years, the company has been manufacturing a variety of innovative and environmentally friendly alternatives to traditional materials. Its innovative products are used across a broad range of end markets and applications, including non-residential, residential, infrastructure and agriculture applications. The company has established a leading position in many of these end markets by leveraging its national sales and distribution platform, overall product breadth and scale and manufacturing excellence. Founded in 1966, the company operates a global network of 63 manufacturing plants and 32 distribution centers.

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