

## New Sewer Line for Denton

**Resin:** Vipel® unsaturated polyester

**Composite Applications:** Sewer Pipe

**Manufacturing Process:** Filament Winding

**Diameter:** 48 inches (122 centimeters)

**Length:** 4,700 feet (1,433 meters)

**Chemical exposure:** Wastewater & sewer gases

**Location:** Denton, Texas, USA

**Installed:** 2009



In this aerial view of the project site, an arrow points out the composite liners ready to be installed in the new stack.

Denton, Texas, is a fast-growing city with a reputation for keeping a keen eye on the future. So when engineers needed a sewer line to the city's expanded wastewater treatment facility, they chose a composite pipe technology with decades of proven performance around the world.

The installation for the city's Water Utilities Department involved 4,700 feet (1,433 meters) of 48-inch (122-centimeter) underground pipe. The pipe's performance comes from Flowtite design and process technology provided by U.S. Composite Pipe South LLC. USCPS manufactured the pipe with Vipel® unsaturated polyester resin technology and service from AOC. The project was designed by the City of Denton Utility & CIP Engineering Department.

The pipe was installed by Texas United Excavators under the direction of Project Manager Rocky Hill. "This was the first time we used composite pipe," said Hill, "and my foremen really like it. Compared to the alternative, which was PVC (polyvinyl chloride), the composite showed no

deflection and installed in less time. The 'Flowtite' composite coupling system with gasket snapped right into place. And with composite pipe lengths of 28 feet (8.5 meters) versus 21 feet (6.4 meters) in PVC, there were 25 percent fewer joints."

Curtis Donovan, a certified independent inspector, tested the pipe's integrity before the line was put into operation. "The pipes were joint-tested according to the Public Works Standards published by the North Central Texas Council of Governments," he said. "The protocol calls for holding at a steady internal pressure of 3.5 pounds per square inch (0.24 bar) for 2 minutes. Then the compressor is detached, and the pressure is observed for a period of 10 seconds. A drop of greater than one PSI during the final 10 seconds results in a failed test. For this project, every FRP-to-FRP joint passed on the first attempt."

Commenting on the pipe's dimension stability, Donovan said he walked the entire length of the installation at least two times and found every section of pipe to be "perfectly round."

## New Sewer Line for Denton, continued



Stand-offs (white bands around the cylinder) allowed the pipe to be installed through existing iron drainage channels without having to excavate the channels.

### Flowtite®/Vipel® Synergy

The Flowtite process manufactures pipe on a continuous advancing mandrel that provides a high production efficiency rate for fast and just-in-time delivery. The composite wall of the pipe is reinforced with a combination of continuous and chopped glass fiber to achieve the optimum balance of cost and performance.

The resin for the Denton pipeline was a Vipel unsaturated polyester formulated to proprietary Flowtite specifications. Garrett J. Doucet, PhD, Quality Assurance/Quality Control Manager for U.S. Composite Pipe South said Flowtite formulation provides smooth processing characteristics for high finished quality. In addition, the chemistry of the formulation ensures high resistance to the corrosive effects of wastewater and sewer gases.

Addressing the subject of AOC service, Doucet added: "AOC delivery is fantastic and always on time. When we need technical support, Eric Stuck, Tony DeMaio and Brad Walker are very knowledgeable and quick to respond."

With a history that can be traced to Norway in 1965, Flowtite technology is proven in thousands of miles (kilometers) of installed pipe around the world. Supported by Vipel resin consistency, quality and performance, the Denton, Texas, project is the latest installation to join this heritage of success.



The project needed 4,700 feet (1,433 meters) of Flowtite® composite pipe made with optimized Vipel® resin technology.

### About U.S. Composite Pipe South

U.S. Composite Pipe South LLC (USCPS) of Zachary, Louisiana, is the U.S.-owned manufacturer of Flowtite® composite pipe and Meyer® polymer concrete pipe. USCPS offers a range of composite and polymer concrete pipe solutions for water, sewage, and industrial applications. Flowtite and Meyer technologies offered by USCPS are under license FTEC, a world leader in pipe systems and technologies. For additional information about USCPS, contact Jeffrey A. LeBlanc, P.E., at (225) 658-6887; e-mail [jleblanc@ktircp.com](mailto:jleblanc@ktircp.com), or visit the website at [www.uscpsouth.com](http://www.uscpsouth.com).

### About AOC

Headquartered in Collierville, Tennessee, USA, AOC LLC is a leading global supplier of materials and systems for composites and cast polymers. AOC knows technology, lives quality and delivers service better than any other supplier. To discover more, phone Corrosion & Infrastructure Market Development Specialist Ben R. Bogner, PE, CEng., at (630) 306-0872; e-mail [bbogner@aoc-resins.com](mailto:bbogner@aoc-resins.com), or go to [www.corrosionresins.com](http://www.corrosionresins.com), the Internet's best resource for corrosion-resistant composites.

  
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