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JULY 2018  
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## American Trenchless Technologies

**LOCATIONS:** Chicago and DeKalb, IL

**EQUIPMENT:** Quick-Coating System made by Pipe Lining Supply

**FUNCTION:** Trenchless restoration of drain, waste and vent pipes with a polyurea resin coating

**FEATURES:** Two pumps with reusable resin-distribution tubes; electric motor; high-speed cable; heavy-duty hand truck; application brushes; cures in five minutes; CCTV camera system for viewing as resin is applied; one-man operation

**WEBSITE:** [americantrenchlesstechnologies.com](http://americantrenchlesstechnologies.com)

**PRICE:** Between \$20,000 and \$25,000, depending on options purchased

**QUICK-COATING SYSTEM WEBSITE:** [www.quikcoating.com](http://www.quikcoating.com)

▲ American Trenchless Technologies technicians Omar Franco (left) and Andy Smith use a Quick-Coating System made by Pipe Lining Supply to fix leaks in a system of pipes—both main drainlines and branch connections—fed by roof drains atop the Old Republic Building in downtown Chicago.

## Brand-New Coat(ing)

For applications where pipe lining is difficult, pipe coating gets the job done, one microlayer at a time

By Ken Wysocky

**M**ark Carpenter believes in offering customers as many options as possible to solve their pipeline rehabilitation needs. That philosophy explains why American Trenchless Technologies' array of trenchless technologies includes the Quick-Coating System, made by Pipe Lining Supply.

Instead of rehabbing pipes using traditional materials, such as felt and fiberglass liners, the Quick-Coating System applies a microthin layer of a polyurea-based resin, using a round rotating brush. The coating cures in five minutes and then is ready for as many more applications as necessary, says Carpenter, who co-owns the company with his brother, Chris. American Trenchless Technologies has offices in Chicago and in DeKalb, Illinois.

Mobility is one of the primary advantages of the system. For instance, the company recently used it to fix leaks in a system of pipes—both main drainlines and branch connections—fed by roof drains atop the iconic, 24-story-tall Old Republic Building downtown Chicago. The landmark Classical Revival-style building was built in 1925.

“When it rained, the pipe would leak into the executive offices (of Old Republic International, a global insurance company) on the 23rd floor,” Carpenter explains. The insurance company had considered replacing the primary drainlines, but they run through a hard-to-access crawl space between the ceiling of the company’s executive offices and a private rooftop club building. As such, replacing the lines would’ve required tearing down the ornate plaster ceilings of the executive offices, he explains.

Lining the pipes also could’ve been extremely difficult, given the rooftop-only access and the number of branch connections, which would’ve required numerous reinstatements, not to mention buying an expensive robotic reinstatement cutter, he says. “Plus, when you’re lining pipes, you always have to have an exit strategy in case the liner gets stuck,” he adds. “But when you’re on top of a 24-story building, there’s not exit strategy.”



In addition, the building stands near Lake Michigan, where rain showers can pop up unexpectedly. “So we needed something that would dry quickly, as opposed to a liner that might take hours to dry,” he says. Furthermore, the system of drainlines – which included 4-, 5- and 6-inch-diameter pipes made of either galvanized steel or cast iron – included numerous 90-degree turns.

Given all these factors, the Quick-Coating System, which the company had recently purchased and used once before on a smaller job, was well-suited for the project. The system’s primary components – a dual-pump, an electric motor and a control panel – fit on a heavy-duty, two-wheeled hand truck. The pumps distribute a two-part polyurea resin via two tubes attached to a sheath, high-speed (3,000 rpm) Flex Shaft cable, made by Clog Squad. An electric motor spins the cable.

A brush – available in 1½-, 2-, 3-, 4- and 6-inch-diameter sizes – attaches to the end of the cable. The system also comes with a small CCTV camera system so an operator can watch as the resin is applied.

To start, the brush, tubes, and camera head get pushed to the end of the section of the pipe getting coated. Then the operator pulls the cable back as the brush applies the coating. The electronic controls allow the operator to remotely start and stop the resin flow, as well as control the amount of resin being delivered. One person can do the coating, but on this job, American Trenchless Technologies used two people – one to operate the system and another to help coil the up a 100-foot-long cable during the process, Carpenter says.

“The brush mixes and applies the resin at the same time,” he says. “You control the thickness of the coating by how fast you pull back the cable. It’s kind of like how a painter applies paint on the wall of a house. You just develop a feel for it and watch it on a camera when you’re doing it.

“Typically one-half millimeter is the average thickness per pass,” he continues. “On the Old Republic Building job, we did six passes, so the total thickness of the coating was 3 millimeters, which is comparable to the thickness of a liner. It goes pretty quick. The average section of pipe we did on this job was between 30 and 60 feet, and we could coat that in less than 10 minutes per pass.”

The actual coating doesn’t take long compared to the preparation process, which requires extensive cleaning of the pipes with a water jetter. It took three weeks to clean the roughly 300 to 400 feet of pipe that the company coated, Carpenter says. The company used a cart-mounted Jet Pro MV80 water jetter (8 gpm at 3,000 psi) built by MyTana.

The roof drain system dates back to the building’s original construction. Four roof drains feed into a central stack pipe in the middle of the building, not its exterior. That made the cleaning system difficult because back then no one considered things like providing access points from which the pipes could be cleaned.

“Access was very poor, so the bottom line was that those pipes hadn’t been cleaned in more than 90 years,” Carpenter explains. “Between all the scale and debris, the (horizontal) pipes were down to

half their normal diameter.” But American Trenchless Technologies employees were able to clean the pipes sufficiently, using the MyTana cart jetter Warthog LN9-Hog nozzles from StoneAge and a Picote Solutions Maxi Miller combined with Cyclone chains and Smart Cutter tools, also made by Picote.

After completing the coating process, Carpenter says he uses a RIDGID SeeSnake pipeline inspection camera to make sure everything looks good. Sometimes the inspection reveals an uneven area of coating. That’s where the Quick-Coating System offers another advantage: It’s fairly easy to go back into the pipe and use a Smart cutter to smooth out any imperfections, then recoat just that area.

The technology also improves the company’s profitability by enabling it to tackle jobs that it otherwise might not be able to bid on, like the Old Republic project. “If I just would’ve told them that I couldn’t help them because we just do pipe lining, they’d just go out and find someone else to do the job,” Carpenter says. “But because I could offer them another solution, they went with it.” ■

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