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Pipers Pick Epoxy To Plug Pinholes

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There is still no explanation for the pinholes riddling copper water pipes in the Washington area. But a California company says it has a cure not only for what ails us, but also for what some experts say is a national epidemic of corroding pipes.

ACE DuraFlo Systems LLC, of Placentia, Calif., does not care what is causing the pinholes in pipes in thousands of homes in the Washington Suburban Sanitary Commission's service area. (Which is good, because the WSSC still has no answer.)

Nor does it care what is behind an avalanche of complaints nationwide about corrosion and clogging of copper pipes and older, galvanized steel pipes.

Instead, it is selling what it says is a "revolutionary solution" to restore pipes, rather than repair or replace them. It has been in the Washington area since January.

Instead, of re-piping, the ACE DuraFlo system sandblasts out the corrosion and blows in a coating of a special, fast-drying epoxy. The result is a smooth, white, plastic-coated look inside the pipe, instead of the pitted or clogged-up metal.

The process is considered by those in the business to be the first system in America that will fix corroded water pipes in about a day without having to rip out walls, ceilings or floors.

While plumbing experts at the American Water Works Association and the Maryland State Plumbing Board acknowledge that it is still early to evaluate claims that ACE DuraFlo's system or others can provide a "permanent solution," they note that Japanese and European companies have been using epoxy in residential and commercial piping for about 30 years.

ACE DuraFlo, which started in Canada and the West Coast in 1999 and expects \$8.25 million in revenue this year, was the first to simultaneously miniaturize the technology for use in pipes as small as half an inch in diameter and to secure a drinking water standard certificate allowing the water to be restored in a day.

Since it arrived in the Washington area, the company has drawn considerable attention at two projects off Dupont Circle.

A steady flow of visitors, including area plumbing officials, hotel and apartment owners and property managers and commercial building operators, toured ACE DuraFlo's first project, the 184-unit Webster House condominium building completed this summer.

Others inspected work now wrapping up at the 88-unit Dupont West condominiums.

Both condo buildings were plagued with failing pipes and pinhole leaks.

Property managers at both locations say they are happy with ACE DuraFlo's installations and with the savings they have enjoyed from not having to both re-pipe and restore. They avoided having to move tenants and having to patch walls, floors and hallways and then repaint, re-carpet and re-wallpaper.

Restoration costs can add 20 percent to 100 percent or more to the cost of repiping.

"The process is definitely amazing," said Glenn Loveland, property manager at the Webster House. "We had weekly pinholes, a problem that started years ago and was just getting progressively worse."

The Webster House Condominium Association hired ACE DuraFlo because "the alternative basically was to have all the pipes replaced in a much more invasive way and at more than double the cost at least," association President Bob Armstrong said.

To replace the pipes would have cost more than \$1 million, Armstrong said. ACE DuraFlo's process cost \$600,000, including a discount for being the first to sign up, Loveland said.

A handful of Washington area single-family homeowners have also hired ACE DuraFlo, responding to mailers offering discount coupons.

Local regulators do not endorse products; neither does the WSSC. But some say ACE DuraFlo's process looks highly promising.

"Everybody agrees that the product is unbelievably excellent," said Hayward "Bud" Hinkhaus, vice chairman of the Maryland State Plumbing Board and a Baltimore plumber for 30 years. "The lasting capability of the epoxy is probably as long as PVC [polyvinyl chloride pipe] under normal household-type conditions. That's longer than I'll be around."

PVC pipe has a life span of about 100 years, according to the industry.

The American Water Works Association, a national organization of water supply professionals, also does not endorse products, but one key official, David Hughes, said the ACE DuraFlo system "has the real potential to be a breakthrough product."

Corrosion expert and Virginia Tech professor Marc Edwards, who is heading up the WSSC's two-year-long study on pinhole leaks, also is telling callers "that [ACE DuraFlo's process] is an option. It should fix the problem regardless of how it got started."

Edwards's team of consultants has not been able to find a single cause for the pinholes.

His theory is that they may be heavily linked to federal environmental regulations tightening the amount of natural organic material, such as leaves, allowed in drinking water.

Corrosion experts have long said that natural organic material helps create a protective layer in pipes.

The WSSC responded more quickly than most utilities did when the Environmental Protection Agency announced plans to tighten the standards.

The WSSC took steps in the mid- 1990's that Edwards says may have shown up in the pipes five years later, when the first wave of complaints surfaced.

Complaints about pinhole leaks in copper pipes started pouring in to the WSSC almost three years ago. The latest tally shows almost 4,500 complaints of leaks occurring during the past five years.

The WSSC urged ACE DuraFlo to come to Washington after hearing that the process might be an alternative to re-piping.

As other utilities comply with the new EPA standards, Edward predicts, corrosion complaints will mushroom.

While corrosion can be caused by a variety of factors, including "aggressive" chemicals in water supplies, faulty installation of pipes and valves, and aging pipe materials, Edwards and colleagues say they are concerned about the rising tide of complaints.

There is “no rigorous scientific proof that it is increasing,” admitted Edwards, but he said more calls are coming in from utilities and homeowners across the country. “I believe it’s a problem that costs consumers billions of dollars in the United States,” he said.

The WSSC has called for the more national research and funding.

Edwards added that there is also “no unbiased appraisal for long these [epoxy] coatings can maintain their integrity.”

But he said, “It is a promising solution that was not previously available” and that is more attractive than re-piping because it does not require destruction of surrounding materials.

“If the coating stays intact, you can be guaranteed that the problem will not recur,” Edwards said. “If you replumb, I would not feel comfortable making that promise.”

ACE’s first contract was with the 385-room Four Seasons Hotel and Resort in downtown Vancouver, British Columbia. They then picked up bids from an array of historic hotels and government offices up and down that coast. Several of the hotel office complex owners are featured in ACE DuraFlo’s promotional materials.

Patents are pending on the epoxy and the process.

Now that the technology is in place, the company is promoting franchises. A big push was made this summer in Houston and San Antonio, where complaints about mold damage from water leaks are soaring.

In June the company got another boost from the National Cooperative Bank, the nation’s largest provider of financing to housing cooperatives community associations. The bank says the process is eligible for its financing.

Hinkhaus, of the Maryland State Plumbing Board, said epoxy systems currently do not require a license form local plumbing officials. But he said ACE DuraFlo typically hires licensed journeymen plumbers and a licensed and insured plumbing contractor for each job.

John Demetriades of Bethesda and Howard and Julie Kass of Potomac are among the local homeowners who have signed up.

Both families say they were happy with the results. Both got discounts for being among the first to try.

“I had a leak about 10 years ago, and [the plumbers] came with a jackhammer and just destroyed the house basically,” said Demetriades, explaining that the pipes in his house are buried in the concrete slab. “When I had my third leak in June, I knew I needed to fix it but I didn’t want to destroy the house.”

Demetriades said he was “very happy” with the results, although the hole where the leak had sprung turned out to be bigger than anticipated. ACE DuraFlo paid to replace that section of pipe he said.

Howard Kass hired ACE after discovering a pinhole leak in April.

Kass, who bought his four-bedroom Colonial in January, said plumbers he contacted indicated the pipes “were riddled” with corrosion that could signal potential pinholes.

The WSSC’s pinhole experts, he said, advised that re-piping might not prevent future problems and that epoxy coatings had a history of working.

“It went very smoothly,” Kass said.