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ENGINEERS' CONNECTION

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DISTRICT GOES FOR PROOF THAT PLASTIC PIPE BEATS IRON

The folks at Water District #1 of Johnson County wanted hard evidence that innovative plastic-pipe products could do the job. And they got it.

The 270-square-mile, 16-city district outside Kansas City, Kan., also known as Water One, wanted to try Ultra Blue C909 high-strength molecularly oriented plastic pipe on for size. Critical to its situation were highly acidic soil and a curious decades-long propensity to specify ductile iron in its 2,500 miles of pipelines.

"We basically let (the Construction team) try to destroy the pipe," says Brian Schade, lead design engineer, describing the pressure testing, burst testing, tapping and rough handling to which the team subjected it. "They tested it out and put it through its paces."



"We filled it to 300 psi and had it lying on the ground and took a back hoe to it," explains Ernie Hamilton, assistant manager of construction. "We had to hit with the tooth on the bucket to break it. It was pretty amazing. I was impressed with its strength, and particularly impressed with how it doesn't split out when outside forces damage it."

McCorkendale Construction works with Water One and Superintendent Rick Lickteig is happy with Water One's choice of plastic.

"We're basically using all PVC now, no ductile iron," says Lickteig. "It's simpler to lay the PVC than ductile iron and you don't have to polywrap it. And I've noticed a significant drop in leaks in the pressure testing. In fact, I don't know if we've had one since we started the new contract in March."

Lickteig has seen failure in other materials.

"We've notice a lot of lines of ductile iron that are corroding and starting to decay a little bit," he says. "Some of them haven't been in the ground eight to 10 years. That's why Water One decided to go with PVC."

Why that decision didn't come sooner is a mystery to Schade. Water One installed some Johns Manville PVC as a test case in 1975 and dug it up last year.

"We cut it out and took it up to AWWA to test and after 33 years, it showed virtually no sign of age," says a bemused Schade, handling a cutout of that pipe he keeps at his desk. "I have no idea why we didn't continue using it."



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