



Provide lasting pipe performance

aquatherm

DONE DIGGING: PIPING ALTERNATIVE DELIVERS CHILLED WATER SOLUTION

PROJECT INFORMATION

PROJECT	PRODUCTS USED	LOCATION / DATE
Horizonte Training and Instruction Center	Climatherm®	Salt Lake City, UT Summer 2008

AQUATHERM ADVANTAGES

- PP-R's natural insulation properties were huge since the pipe was buried
- Heat fusion welding and corrosion resistance eased leakage concerns
- Considering labor and materials, PP-R was the least expensive pipe option



THE CHALLENGE

The existing underground chilled water piping system failed due to faulty slip joints and missing stress blocks

THE SOLUTION

Climatherm turned out to be the fastest, least expensive, and longest lasting replacement pipe option

As HVAC supervisor for the Salt Lake City School District, Jon Woodward usually has his hands full. And with 40 years of experience in the industry, he generally prefers solving problems using proven technology.



So when he was dealing with underground leaking chilled water piping at an adult extended learning center, a new-to-him piping solution was met with trepidation. Wade Bennion, principal, Van Boerum & Frank, had introduced Aquatherm polypropylene piping to Woodward as a solution after overcoming his own hesitation about using a piping system other than metal.

Bennion said that in 30 years of business, he has never been fond of plastic piping. "My father was the founder of Bennion Associates, and he always said, 'Every time you use plastic you

get sued,' so we stayed away from it," Bennion recalled.

Ironically, Aquatherm has been proven in Europe over over 35 years. After talking at length with Aquatherm representatives and with other facility maintenance professionals who've used the product, Bennion realized it was a perfect fit for this project.

SOLUTION UNDER THE HORIZON

The Horizonte Instruction and Training Center, an adult extended learning center located in Salt Lake City, occupies a five-story, approximately 118,000-sq-ft building that had served as a job services building for 10 years. When the school district bought the building 12 years ago, it completed a mechanical system retrofit, including new McQuay chillers and six-in. ductile iron piping (or slip joints) underground.

Six years ago one of the slip joints came apart, causing glycol and chilled water to spew into the ground. At that point, the plumbers installed new slip joints but Woodward said they neglected to install new stress blocks, which would later cause problems.

In May 2008, during maintenance and pressure testing, the district's facility maintenance department discovered

a leak. The system had failed due to friction and the school administration decided to replace only the bad sections of pipe, amounting to 120 feet.

Initially Bennion considered replacing the failed pipe with more ductile iron or CPVC. "They were looking at options and of course cost was an issue. They were looking for the fastest cheapest, permanent solution, and Aquatherm was the best option," he said.

Aquatherm's Climatherm piping uses heat-fusion to form connections, a process often used in natural gas piping because of its reliability. Heat fusion bonds both sides of a joint into a single, homogenous material, without the use of chemicals or mechanical connections. This eliminates systematic weaknesses and fail-points in the pipe. The heat fusion connection, combined with polypropylene's resistance to corrosion and abrasion, eased leakage concerns.

"I COULDN'T BELIEVE THAT THERE WAS NO CONDENSATION ON THE AQUATHERM PIPING ... I AM ONE HUNDRED PERCENT SOLD ON IT, ESPECIALLY FOR CHILLED WATER LINES."

-JON WOODWARD, HVAC SUPERVISOR, SALT LAKE CITY SCHOOL DISTRICT

By June Bennion had presented Aquatherm to Woodward as a solid option. "At first I was a bit apprehensive about it, but after talking to Wade about the insulating properties of the pipe and the success it has had in Europe, I said let's give it a try," Woodward said.

The crew dug up and removed the glycol-contaminated sand surrounding the pipe and replaced it with 6-in. Climatherm. Since Woodward and his staff were unfamiliar with the heat fusion process, Aquatherm dispatched a certified trainer to help facilitate the process.

"The company was very responsive, and had a trainer onsite. He brought the flanges to connect the ductile pipe to the piping and showed us how to do the whole thing. He was very patient and had a lot of knowledge about the product," Woodward recalled. In addition to the Climatherm piping retrofit, stress blocks were added to the remaining ductile pipe.



This six-inch Climatherm was connected to the existing ductile iron piping that had failed, and when a section running 45-degree water was left exposed in summer heat, it had no condensation.

LEFT UNCOVERED

After all the proper testing procedures were followed, Woodward left a section of the Climatherm and a section of the ductile iron exposed so he could monitor it into the summer. "We haven't had any leaks since the project was finished," he said, adding that he has been most impressed with the polypropylene pipe's insulation characteristics.

"I couldn't believe that there was no condensation on the Aquatherm piping, which was really surprising since we run 45°F water through there, and especially with the heat at that time of year. I am one hundred percent sold on it, especially for chilled water lines," Woodward said.

"We really needed something that would work on this job so I don't have to go back in there and do this job again. The product's flexibility was a perfect fit for this job." ©

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The German-manufactured pipe has been one of the world's most durable and greenest piping systems for nearly four decades and proven successful in 70-plus countries. Aquatherm piping systems offer many performance and environmental benefits, such as:

- Eliminating toxic materials, glues and resins, and open flames from the piping installation equation
- An R-value of 1 or greater depending on pipe size and SDR
- The fusion welding process, which creates seamless connections that last a lifetime without leaking or failing
- An optional fiber-composite layer in the pipe reduces linear expansion of the pipe by up to 75% compared to plastic piping

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