RELIABILITY AND LONGEVITY EARN AQUATHERM PIPE PERMANENT RESIDENCE AT EMBASSY SUITES NASHVILLE AIRPORT

PROJECT:
Embassy Suites Hotel, Hydronic Heating/Domestic Hot Water/Chilled Water

PRODUCTS:
aquatherm green pipe®
aquatherm blue pipe®

LOCATION/DATE:
Nashville,
2008 and 2013-2014

AQUATHERM ADVANTAGES:

- Ownership liked the stable pricing and reduced risk of theft that Aquatherm Pipe offers
- Due to fast installations with Aquatherm Pipe, labor costs were minimized
- Aquatherm's expansion resistance reduced concerns about bursting pipes during cold snaps

Hotel uses PP-R pipe on separate projects covering six years

A large hotel replaces a lot of costly mechanical equipment over the course of its lifetime. In the last decade alone the Embassy Suites Hotel in Nashville has replaced an aging chiller, five boilers, and a great deal of leaking pipe.

Regional Chief Engineer for Embassy Suites, Lanny Dunlap, knows that nothing last forever, but he has also learned over the course of his extensive career in the hotel industry that it pays to invest in longevity. That's precisely why he prefers Aquatherm polypropylene piping. The Embassy Suites - Nashville Airport chose Aquatherm for a major chilled water renovation in 2008 and again in 2013/2014 for a hydronic heating and subsequent domestic hot water renovation.

"I'd give anything to have Aquatherm throughout the hotel," said Dunlap, who has overseen the mechanical engineering operations for as many as 700 hotels. His experience with Embassy Suites, as well as other hotel brands, has taught him that an investment in Aquatherm is an investment in longevity.

ONE PIPING MATERIAL – MULTIPLE APPLICATIONS!

The most recent installation of Aquatherm at the Embassy Suites - Nashville Airport came as part of a mechanical room upgrade that included replacement of primary hydronic heating and domestic hot water equipment. The existing copper piping on the domestic hot water side was 30 years old and badly damaged due to electrolysis and thinning of the pipe wall. Two new 750,000 Btu/Hr Lochinvar® copper-fin gas-fired boilers were installed on the hydronic heating side, which offered up the opportunity to also replace approximately 60 feet of hot water supply and return piping with Aquatherm.

These renovations were followed with the addition of a new bar and common area bathroom at the hotel, both of which were piped with approximately 600 feet of Aquatherm.

With product supplied by the local Aquatherm plumbing-supplies distributor, Demand Mechanical of Nashville was able to use SDR 7.4 Aquatherm Green Pipe®, multi-layer faser (MF) pipe for all of the hydronic heating and domestic hot water/plumbing piping renovations. The broad operating range of this piping material allows it to be applied in both heating and domestic water applications. In this case it met the operating parameters of 150°F at 100 psi on the domestic hot water side and 180°F at 50 psi on the heating side. Aquatherm Green Pipe is an extremely versatile piping system, but it is especially ideal for demanding potable and food-grade applications, where chemical inertness and physical durability are especially important.

The use of a single pipe material helped facilitate the 2013/2014 renovations at the hotel, both of which were each completed in a matter of weeks by a small work crew.

The mechanical systems at the Embassy Suites Nashville - Airport were upgraded in 2008 with a chiller replacement, and again in 2013-14 with hydronic upgrades and domestic water. Both times, Aquatherm polypropylene was selected as the piping system for a variety of reasons, including labor savings and consistent material costs.

Heat fusion is essential to the success of polypropylene-random (PP-R) piping systems. The method joins plastic pipe and fittings by heating them to a molten state and then rapidly pressing them together to form a homogeneous bond.

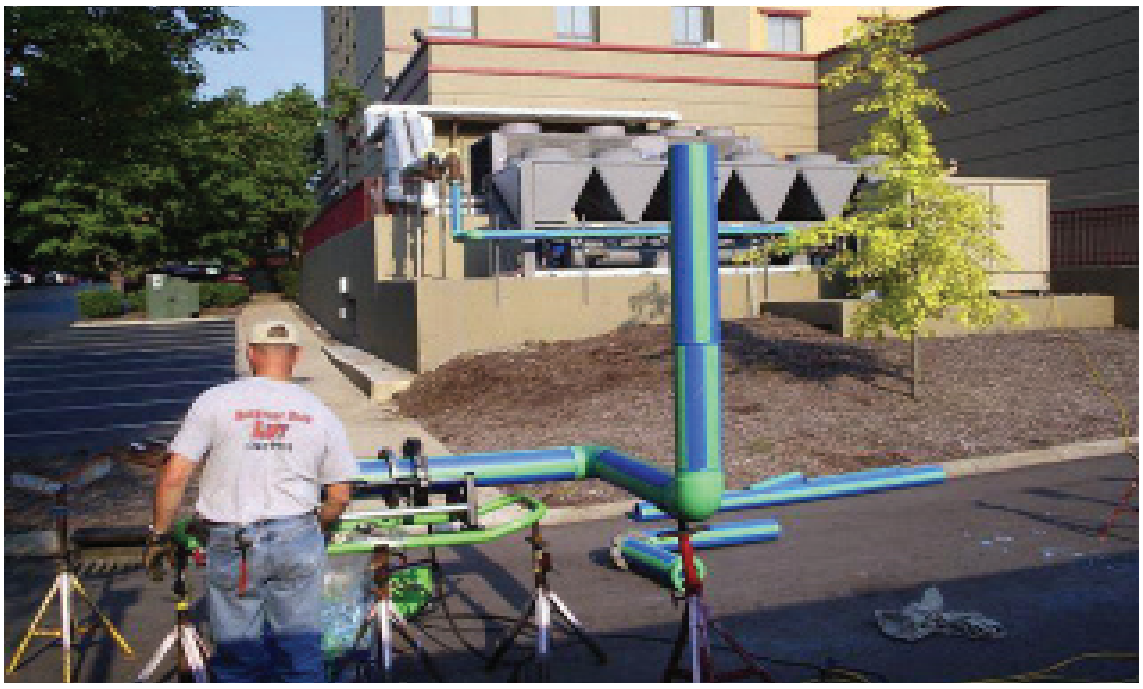
For pipe sizes two-inch and under, connections are made using socket fusion, which involves cutting the pipe, marking it for insertion depth, heating the pipe and fitting for a specified time (only seconds for smaller diameters) on the heating iron, then manually pushing them together to cool. Once cool, the pipe and fitting become a single piece with no potential for leaks.

"I'd give anything to have Aquatherm throughout the hotel."

– Lanny Dunlap, Regional Chief Engineer, Embassy Suites, Nashville

With pipe diameters of 4-in. and larger, butt fusion is used. This method uses a fusion machine to properly join the pipe and fitting using heat and pressure.

Demand Mechanical used socket fusion for the smaller pipe sizes, and butt fusion on the larger hot water supply and return piping. Butt fusion relies on a special welding machine designed to mechanically prepare the pipe face for fusion and provide both heat and pressure while supporting the pipe. The installers used a WIDOS 3511 welding machine for the larger hydronic pipe and a WIDOS handheld tool for the smaller plumbing pipe.



Jamie Hassett worked as a service manager for another company in 2008 when he was butt fusing 6-in. Aquatherm Blue Pipe® for this chiller piping retrofit at the Embassy Suites Nashville Airport. He went on to form his own company, Demand Mechanical, a few years ago and used Aquatherm Green Pipe® on another retrofit at the hotel

SAFE, RELIABLE, AND LESS COSTLY

Jamie Hassett, owner of Demand Mechanical, is no stranger to the process of installing Aquatherm pipe. Not only was he a part of both the 2008 and 2013/2014 renovations at the Embassy Suites – Nashville Airport, he has made Aquatherm his "go-to" pipe on many other projects as well. Over the years Hassett has consistently found Aquatherm to be a more reliable and more cost effective solution than copper. It is also less susceptible to theft.

"Aquatherm doesn't walk off job like copper does. And the price is stable. Copper pricing fluctuates like any precious metal so material costing can be high, plus the added risk of theft," said Hassett.

Demand Mechanical used SDR 7.4 Aquatherm Green Pipe®, multi-layer faser (MF) pipe for all of the hydronic heating and domestic hot water/plumbing piping renovations in 2013-14. The piping system is designed for potable and food-grade applications. In this case, it met the operating parameters of 150°F at 100 psi on the domestic hot water side and 180°F at 50 psi on the heating side.

In addition to the materials savings, Hassett estimates that Aquatherm is at least 10% faster to install. That helps keep labor costs down, especially on projects like the most recent renovation at the Embassy Suites, which was awarded to his firm based on competitive bid.

Most important is the long service life that Aquatherm provides.

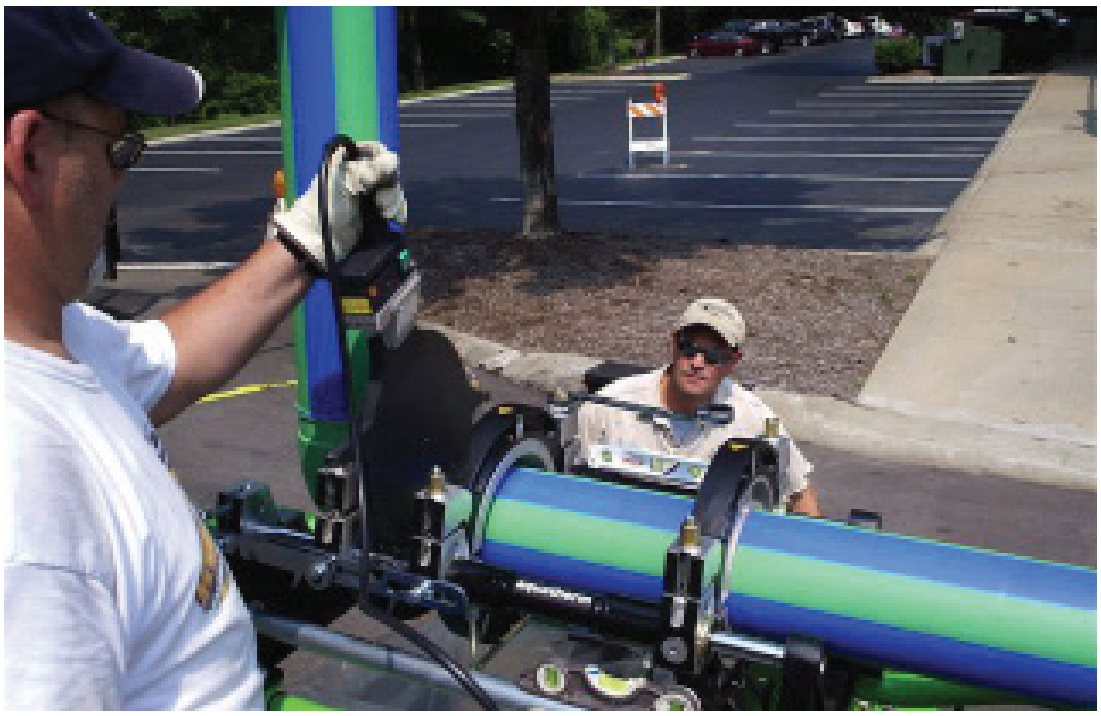
"We know it is a good product as far as longevity," said Hassett, adding that when it comes to domestic hot water piping, it is the "hands-down" winner over copper.

Lanny Dunlap concurs. In addition to Embassy Suites, he has supervised the mechanical operations of numerous other hotel brands, including some that were exclusively committed to the use of Aquatherm.

"It's such a good product. We didn't have to insulate it. [The pipe can in some instances be un-insulated, but this is on a case-by-case basis]. Installation is simple. And because it can stand up to 35% expansion you don't have to worry about busted pipes during cold snaps," said Dunlap.

Whether you supervise one or one hundred properties, that level of performance inspires product loyalty.

The use of a single pipe material helped facilitate the 2013-14 renovations at the hotel; both the mechanical and domestic water systems were completed in matter of weeks by a small work crew. The Aquatherm Green Pipe® shown here runs in a supply-return configuration and is connected to a Lochinvar water heater.



The German-manufactured pipe has been one of the world's most durable and greenest piping systems for 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 more per inch 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 faser-composite layer in the pipe reduces linear expansion of the pipe by up to 75% compared to plastic piping