

LOUISIANA CAR WASH PICKS AQUATHERM FOR GREYWATER AND SEVERAL OTHER APPLICATIONS



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Leon Molinario III, Leon's Plumbing, Metairie, LA

PROJECT:

Hot and Cold Process and Domestic Water, Reclaimed Water, Compressed Air

PRODUCTS:

aquatherm green pipe®
aquatherm blue pipe®
aquatherm lilac pipe®

LOCATION/DATE:

Metairie, LA, Summer 2012

AQUATHERM ADVANTAGES:

The contractor saved ownership roughly 20% in upfront costs by selecting PP-R over copper. Ownership was drawn to PP-R's lifecycle benefits vs. other pipe systems especially in light of aggressive elements used in the washing process. Aquatherm is free of heavy metals and toxic chemicals while also corrosion-resistant and non-leaching. Aquatherm's comprehensive 10-year warranty was a selling point on the project.

Washing a vehicle doesn't exactly seem like rocket science. Spray a little water, throw on some soap and voila—squeaky clean, right? Actually, constructing an automatic car wash, such as the Pelican Pointe Car Wash on Airline Drive in Metairie, LA, is a bit more complicated. Pelican Pointe's building team had to consider the various uses of hard, soft and reclaimed water; how to safely deploy soap and other chemicals; and how to effectively utilize compressed air in place of electricity, among other issues.

SEEKING A POTENTIAL SOLUTION

Four Pelican Pointe properties, famous locally in Louisiana for their \$5, 4-minute-express car washes, require intricate piping systems to keep the facilities running smoothly. When Leon's Plumbing in Metairie, LA, was hired to design and install the new Pelican Pointe location's plumbing network, journeyman plumber Leon Molinario III and his father and company president Leon Molinario Jr. wanted to identify a piping solution for all of the car wash's diverse needs.

Having seen Aquatherm polypropylene-random (PP-R) piping at tradeshow as well as in the field, the father-and-son team began researching how the non-leaching, scale-free piping systems could benefit their latest project. "Although Aquatherm was new to us, we saw potential in it, and we wanted to use it," Leon Molinario III said. "We thought it would look good and function well, and it has a lot of different applications."



WASH, RINSE AND REPEAT

Molinario wanted one piping product that would work for myriad operations in the car wash's wash tunnel. Although only 20-ft. wide by 90-ft. long, the tunnel required a great deal of piping for several applications: hot and cold water, hard and soft water, reclaimed water and compressed air.

When a vehicle enters the automated wash tunnel, it is first sprayed with cold, hard, or reclaimed water. Then it is layered with soaps and cleansers and rubbed down with brushes of various sizes and shapes. Next, depending on the type of wash the customer purchased, the car receives a coat of wax.

The car is rinsed with soft water for a spot-free shine before being dried with heavy-duty blow dryers. All of the moving, mechanical parts inside of the wash tunnel, such as the spinning brushes and oscillating water jets, are powered pneumatically with compressed air. For safety reasons, electricity isn't used inside the car wash.



SIMPLIFYING PIPING INSTALLATION – WHILE SAVING 20%

Two other Pelican Pointe car washes had been done in copper pipe, but the local Aquatherm rep wanted to show Molinario the savings that could be had with Aquatherm.

When construction began in August 2012, copper prices were through the roof. While the steel and copper markets can be volatile,

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– Leon Molinario III, Leon’s Plumbing, Metairie, LA

Aquatherm prices are quite stable and typically lower than, or comparable to, traditional piping options. In addition to the upfront cost-savings of selecting Aquatherm over copper, Aquatherm’s 10-year warranty, which covers any parts, labor,



Prefabrication of Aquatherm pipe often leads to significant labor savings on the jobsite. On bigger jobs, it can also make sense to use the company’s Custom Prefabrication Services.

personal injury and incidental damages caused by manufacturer defect, also was a selling point on the project.

The rep trained Molinario and another Leon’s Plumbing employee on Aquatherm’s unique heat-fusion welding process, and the two ran all of the Aquatherm piping themselves.

Fully recyclable, Aquatherm PP-R piping uses reliable heat fusion to form connections; heat fusion bonds both sides of a joint into a single, homogenous material without the use of chemicals or mechanical connections, which eliminates systematic weaknesses and fail-points in the pipe. The seamless heat-fusion connections, combined with the piping’s resistance to corrosion and abrasion, help to ease leakage concerns.

“The piping and connections are very strong,” Molinario said. “You can hit it with a hammer, and the hammer bounces right off.”

Molinario rented Ritmo R125 and R63 socket welders as well as an Aquatherm welding jig for the project.

“Also, Aquatherm is absolutely easier to weld than copper,” he said. “It’s much less labor intensive. It’s easier, it’s faster and it’s not going to leak.” Ownership was drawn to PP-R’s lifecycle benefits versus other pipe systems.

FOUR SYSTEMS FOR ONE PROJECT

For approximately \$20,000 to \$25,000, Molinario specified four types of Aquatherm piping systems for the new Pelican Pointe structure. For easier installation, Molinario and his associate prefabricated the piping systems on the ground; they then lifted and attached whole sections of piping to the wall with Unistrut and pipe clamps. Closest to the ceiling, Molinario installed about 100 ft of 2-in. Aquatherm Lilac Pipe® to channel reclaimed water for the car wash’s initial cold-water rinse and scrubbing stages.

“The reclaimed water is run through a filter machine so it can be cleaned and reused,” Molinario said. “[The car wash’s owners] try to reuse as much water as they can.”

Greywater usage is becoming increasingly popular in the United States because of a progressive emphasis on resource management. Ideal for greywater applications, the chemically inert Lilac Pipe is a safe choice for the car wash’s reclaimed water because aggressive chemicals don’t affect PP-R piping.

On the wall underneath the Lilac Pipe, Molinario’s team installed 80 ft of 2-in. Aquatherm Green Pipe® SDR 11 non-faser (the green pipe with the blue stripe). Designed for cold-water use, Green Pipe has a high flow rate, and like all Aquatherm systems, is completely free of heavy metals and toxic chemicals. All Aquatherm systems are also hydrophobic, which means they are corrosion-resistant and will not leach chemicals into the fluid they transport.

Two-inch Aquatherm Lilac and Green mains are affixed to the wall with Unistrut and pipe clamps. The mains are joined by a series of 11 fusion outlet assemblies, each with two bypass valves that allow for mixing of the reclaimed and hard water.



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Leon’s Plumbing also installed a backflow preventer to stop the reclaimed water from working its way into the potable water system. With this setup, Pelican Pointe’s owners can choose to run reclaimed water, hard water or a combination of both through the wash tunnel for the initial rinse and cleaning.

“They get to decide what type of water to use depending on what cleans the cars better as well as how much they’re spending on water,” Molinario said. “They adjust the system as they need it.”

Underneath the reclaimed- and hard-water system, Molinario’s team also used about 200-300 ft of the 2-, 1½-, ¾- and ½-in. non-faser Green Pipe (with the blue stripe) to construct a reverse-osmosis system. The Green Pipe runs from a water softener to a charcoal tank, which filters out impurities and creates the soft water used at the end of the wash tunnel for the car wash’s spot-free rinse.

Below the Green Pipe, Molinario installed 150 ft. of the ½-in. SDR 11 Aquatherm Blue Pipe® to convey compressed air at 125 psi. The Blue Pipe runs between an air compressor and a regulated control board; the regulators send compressed air to all of the moving mechanical parts inside the wash tunnel.

The car wash’s mobile components operate pneumatically rather than with electricity for safety purposes. Aquatherm’s Blue Pipe was engineered to be a long-lasting solution for heating and cooling, compressed air and other industrial applications; it allows for higher operating temperatures and thinner walls, reducing costs and improving flow rates.



Despite working with Aquatherm for the first time on this job, the installers at Leon’s Plumbing found it “fun to install” and were “excited to go to work.”

Finally, Molinario installed approximately 40-50 ft of the ¾-in. SDR 7.4 Green Pipe with faser composite (with the green stripe) for domestic hot water in the bathrooms and mop sink. Engineered precisely for hot-water use, Aquatherm’s faser-composite piping systems improve impact resistance and reduce linear expansion and contraction by about 75% compared with other plastics.

FIRST TIMERS? NO PROBLEM!

It took about three weeks to install all of the Aquatherm piping; the car wash opened in March 2013. The Aquatherm rep noted that he shows this project to all of his local engineers. “For two young guys who were first-time users to install all of the piping so nice and neat and not have any leaks is impressive,” he said.

The completed system looked neat and was leak-free, which was particularly impressive for two first-time users.

Molinario felt the piping systems’ identifying colors contributed to the project’s success. “The owner liked it,” he said. “It’s a very clean look—it looks a lot better than other car washes.” The owner, who trusted the judgment and the credibility of the plumbing contractor to use Aquatherm, has been pleased with the system.

Additionally, Molinario hopes to be able to specify Aquatherm piping systems again in the future. “We were excited to go to work,” he said. “It was fun to install. If we did another car wash for Pelican Pointe, we would use the Aquatherm.”



The various colors of Aquatherm pipe reflect the different applications for which the products are designed. Here, the Blue Pipe is carrying compressed air while the Green Pipe carries reverse-osmosis water.

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



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