



**aquatherm**

Provide lasting pipe performance

# GREEN AND BLUE (PIPE) TAKE HOLD IN THE LAND OF REDS AND WHITES

PROJECT INFORMATION

PROJECT	PRODUCTS USED	LOCATION / DATE
Multiple Wineries, Domestic Hot and Cold Water, Nitrogen Gas, Compressed Air	<b>aquatherm green pipe®</b> <b>aquatherm blue pipe®</b>	California Wine Country, June 2012 to present

## AQUATHERM ADVANTAGES

- Aquatherm pricing is very stable unlike the volatile pricing of metal pipes
- Substances inside Aquatherm pipe are able to retain their temperature more easily than metal pipes thanks to the inherent R-value
- The installers really liked that there were no open flames, fumes or chemicals when fusing the pipe, making it safer and faster
- Aquatherm's heat-fused connections can absorb shock and stress such as water hammer and moderate seismic activity



## THE CHALLENGE

Young Inglewood Vineyard and others including: Bogle Vineyards, Kelham Winery, , Gamble Estate, and Larkmead Winery, needed a highly reliable piping system that could be seamlessly integrated into their plumbing and mechanical systems

## THE SOLUTION

Aquatherm pipe was selected as the quickly and easily installed piping solution for a variety of applications including compressed air, domestic hot/cold water and nitrogen gas

*Aquatherm's polypropylene-random pipe systems have gained favor as the pipe system of choice at several Napa Valley Wineries.*

Young Inglewood Vineyards is a two-generation, ultra-premium winegrowing estate located in Napa Valley, just southwest of St. Helena, CA. Founded by Jim and Jacky Young — after they retired from a multi-decade long career running a software company they co-founded — the winery site has been under cultivation of *Vitis vinifera* vineyards for more than 50 years.

## WHEN WATER TRANSFER IS KEY...

The Young winery is a small boutique-style facility, yet as with any winery, the reliance on water and its transfer is essential — from domestic hot water to potable water use. And that calls for a highly reliable piping system that can be integrated into the mechanical systems without worries. To achieve optimum reliability, Young Inglewood Vineyards selected Aquatherm Green Pipe®, which is made from polypropylene-random (PP-R), for its water transfer needs.

According to Mark Simon, manager at Young Inglewood Vineyards, Aquatherm pipe is used for all of the winery's interior hot and cold water, nitrogen gas, and compressed



air. In fact, Aquatherm piping can be used for general utility services such as cooling water, reverse osmosis/deionized water, compressed air, inert gases, glycol and others.

Mike MacBriar, with Pacific Coast Plumbing (Napa, CA) and his crew handled the Aquatherm installation. "Aquatherm was used for every type of piping, including hot water, as well as inert gas piping. Every place where we used copper piping in





Several other projects are currently in design. "These wineries that choose Aquatherm are using it in applications such as domestic hot water, glycol and clean-in-place (CIP) — high temperature usage," said Gibran Farrah, Mega Western Sales, an Aquatherm independent manufacturer's rep for California. Other Napa Valley projects using Aquatherm include installations at Kelham Winery, Gamble Estate, and Larkmead Winery, and it is also used at Bogle Vineyards south of Sacramento (see side bar).

Simply put, Costa Engineers and Pacific Coast Plumbing had no hesitation recommending and installing Aquatherm. "The owner was a bit skeptical, but after looking over the product, he approved it," said MacBriar.

"THE EASE OF INSTALLATIONS IN RETROFIT SITUATIONS IS A REAL ADVANTAGE; YOU DON'T HAVE TO SOLDER OVERHEAD. AND THE REDUCED EXPANSION AND CONTRACTION IS A PLUS COMPARED TO ALL OTHER PLASTICS."

-TONY COSTA, P.E., LEED ACCREDITED PROFESSIONAL, COSTA ENGINEERING, NAPA, CA

In addition, MacBriar and Pacific Coast Plumbing put their faith in Aquatherm for other reasons. Aquatherm offers an extensive 10-year, multimillion-dollar warranty that covers any parts, labor, personal injury and incidental damages caused by material failure due to manufacturer defect. Also, "The piping is relatively lightweight compared to other metal piping, and the fact that there are no open flames from soldering used on the jobsite is a plus," added MacBriar.

### PP-R WITHSTANDS LOCAL SOURCE WATER

While many other piping materials allow trace amounts of chemicals to leach from the pipe walls and into the drinking water, Aquatherm's Green Pipe is hydrophobic, which prevents it from corroding or leaching. Aquatherm was also chosen at the Young Winery because it is non-metallic, eliminating

the past, we are now using Aquatherm," explained MacBriar. The primary reason? "Due to the changing copper pricing these days, Aquatherm, with its steady cost, is our choice," added MacBriar.

Aquatherm Green Pipe is also certified for food grade applications and is ideally suited for high-temperature applications such as equipment cleaning in wineries and breweries. Operating water pressures and temperatures do not exceed 140° F or 80 psi on the domestic lines in the winery, yet Aquatherm can handle 180° at 100 psi. "The pipes have less thermal loss, therefore liquids retain their temperature better," said Simon.

### A SUSTAINABLE PROCESS (AND PIPE SYSTEM)

According to Tony Costa, Costa Engineering, Napa, CA, Aquatherm was introduced to the Youngs as a sustainable piping option that would perform better than conventional piping. As the designer for Pacific Coast Plumbing, Costa Engineering has been involved in several Aquatherm projects, including Odette Estate (Plumpjack Winery), Young Inglewood Vineyards, and Continuum Estate (Tim Mondavi).



concerns that come with metals, including corrosion and electrolysis. "The entire Napa valley is full of silica. If you use regular water treatment, it would glaze the inside of the pipe walls," said Costa.

The heat fusion connection process used to install Aquatherm also drew the Costa and Pacific Coast teams to Aquatherm. The pipe and fitting are placed on a 400-500° iron and then pushed together by hand or with mechanical assistance. For typical 4-in. connections, the pipe and fitting are left on the iron for only one minute and then joined together. This bonds the pipe and fitting at the molecular level without the use of chemicals or mechanical connections,

and it eliminates systematic weaknesses and fail-points. The heat-fused fittings maintain the same properties as the pipe itself, so physical stresses will not compromise their integrity.

"The ease of installations in retrofit situations is a real advantage; you don't have to solder overhead. And the reduced expansion and contraction is a plus compared to all other plastics," said Costa.

## BOGLE VINEYARDS EMBRACES BIG BLUE (PIPE)

Bogle Vineyards, located in Clarksburg, CA, is a sixth generation winemaker known for sustainability and its large selection of award-winning value brand wines.

The vintner's facility engineers are constantly seeking cutting-edge technology to implement into its operations, so it came to pass that Aquatherm Blue Pipe was specified to convey 25° F glycol at 60 psi from chillers to the fermentation vats.

Airco Mechanical, Inc. (Sacramento) prefabricated large portions of the chiller piping at its shop. Using 10-in., 8-in., and 6-in. Aquatherm Blue Pipe® (and numerous fittings and valves), the Airco team performed the sizable installation with relative ease.

The team also employed electrofusion, a method of socket fusion that does not require heating irons, to make connections in tight spaces where regular heating irons would not fit. The pipe is joined by running an electrical current through a special fitting, rather than heating the pipe and fitting directly. Fusion indicators inside the fitting indicate when sufficient melt pressure has been achieved.

The piping system, which was insulated for energy efficiency and UV protection, has been operating flawlessly. Like many California winemakers, Bogle has discovered that going Blue or Green with their piping systems is not only colorful, but effective.






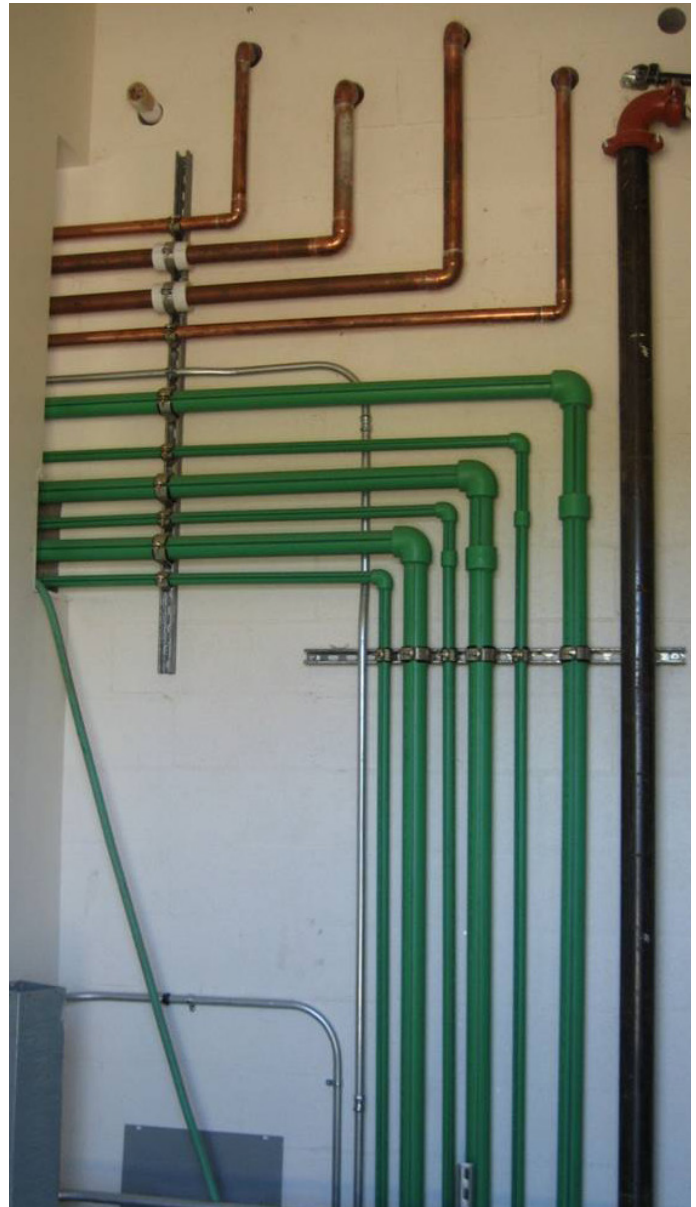
## PEACE OF MIND

In addition, the reliability associated with PP-R heat fusion connections gives owners peace of mind, especially in installation areas with high seismic activity such as the West Coast. With a fiber-composite layer, which is a fiber glass extruded layer that provides rigidity and reduces thermal expansion, Aquatherm can absorb shock and stress such as water hammer and moderate seismic activity. "One of the reasons we chose Aquatherm was that, in the event of an earthquake, with fused connections rather than threaded, we would less likely have leaks," said Simon.

So while tradition is constantly balanced with innovation in Wine Country, it's worth noting that several wine makers have embraced a pipe technology that is both old and new: Aquatherm pipes have been installed around the world for 40 years, but were only recently introduced to the U.S. market. According to Farrah, approximately 50,000 linear ft of Aquatherm is installed at the wineries listed above, with more in the — excuse the pun — pipeline.



"There are so many reasons for failure of pipe systems at these wineries and Aquatherm addresses so many of them, from it being corrosion resistant to chemically inert and others," Farrah said. "It's just a product that makes perfect sense for these applications and so many more." 



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 1.4 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 fiber-composite layer in the pipe reduces linear expansion of the pipe by up to 75% compared to plastic piping

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