



# aquatherm

## PolyPRO Pipeline

## Message from the President



At Aquatherm, we're all about finding a better way of doing things. And energy savings is no exception.

Unlike copper and steel, Aquatherm's pipes have a natural insulation value. When combined with the thin and efficient Aquatherm Advanced wrap, the system has a thermal value equal

to or better than what is required by ASHRAE Std. 90.1. And Aquatherm Advanced saves both money and space.

This issue of *PolyPRO Pipeline* explains how you can save energy and meet the energy codes while buying less pipe insulation. This is a superior use of limited natural resources. And it frees up our limited copper supply for better suited uses, like electric vehicles. Do your part – help spread the word about the smart copper alternative: Aquatherm Greenpipe® and Climatherm combined with Aquatherm Advanced!

- Steve Clark, P.E., P. Eng. CEM

## Pipeline Previews

### Green building momentum

Aquatherm is already helping contractors reap the benefits of the billions of dollars earmarked by the U.S. government to stimulate green building – several large projects featuring our products are in various stages of bidding, approval, and construction. With a host of cost and environmental benefits, upgrading to Aquatherm's piping systems is exactly the sort of project this program is designed to fund.

### Aquatherm in the News

- Aquatherm's new and improved LEED Reference Guide, which will soon be available, will be featured in the Product/Literature section of HPAC magazine's May issue.
- Several Aquatherm projects, ranging from hotels to universities and even a coal mine facility, will be featured in national plumbing and HVAC trade magazines in coming months.

Stay tuned to PolyPro Pipeline and our website for news as it develops!

## Going Green Made Easier

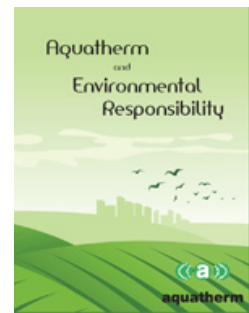
The new brochure "Aquatherm and Environmental Responsibility" makes going green with Aquatherm even easier. This brochure highlights the many ways in which switching to Aquatherm helps protect the environment, both locally and globally.

The brochure focuses on practical ways for developers, contractors, and engineers to help make a difference without sacrificing quality. Aquatherm makes good business and environmental responsibility go hand-in-hand. The green brochure shows readers how they can do it too.

The brochure also includes Aquatherm's new "Environmental Benefits at a Glance" matrix, which compares the green advantages of Aquatherm's piping systems to other traditional systems. This matrix makes it easy to see which piping systems are environmentally responsible and which ones are not.

Access the brochure at:

<http://aquathermpipe.com/literature>



## Featured Project

At Vanderbilt University, lead special equipment repair technician Tim Cook used Aquatherm piping systems to solve two problems at once. The first problem involved getting water from an aquifer out of an underground service tunnel. The second was that the university power plant needed a reliable water source for its cooling tower.

The humid underground environment was causing metal piping to corrode, and other plastics weren't strong enough. And with the water coming up from over 100 feet underground, leaking joints would disrupt the pressure and flow. They decided Aquatherm was "a better fit hands down." Originally printed in *PHC News*. Full article available at: <http://aquathermpipe.com/featured>

# Too Much or Too Little: Getting Insulation Right

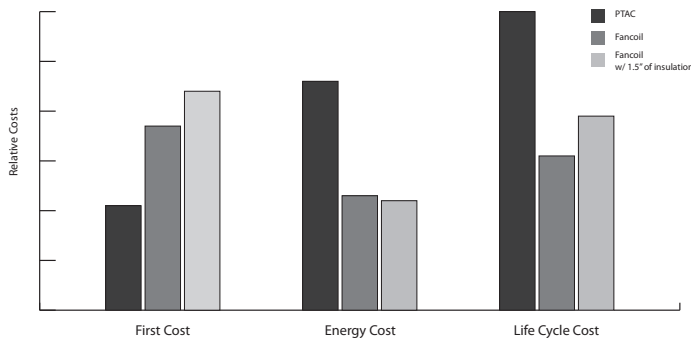
Everyone realizes that for economic, energy, national security, and environmental reasons, we need to get things right regarding the construction of our buildings, and we need to do it right now.

One topic that needs some serious review is that of pipe insulation. When done incorrectly, pipe insulation can have serious negative consequences.

Under-insulating is a well known problem. Metal piping systems are thermal conductors and can waste an enormous amount of energy if not properly dealt with. Unfortunately, in order to avoid this waste, the current trend has swung too far in the other direction and created a new problem: over-insulating.

Hydronic systems are by far the most energy efficient way to heat and cool a building, but insulation is very expensive and tends to make them cost prohibitive. To make matters worse, most of the insulation is unnecessary, adding cost with little to no effective payback. The following graph illustrates the effect on system selections.

Effect of Pipe Insulation on System Economics



For example, let's assume the developer of a hotel is trying to choose the most cost effective system. As an owner, he prefers fancoils for visual reasons, acoustics, lower maintenance, and lower energy costs. But the first cost is substantially above that of PTACs. Now with even higher costs of pipe insulation thrown in, the incremental first cost difference is worse. The energy savings of this additional insulation is insignificant. This drives the owner toward the least efficient decision. The lowest lifecycle cost decision has actually been banned by the new energy code.

Both over-insulating and under-insulating pipes are wasteful practices. In order to avoid driving the market in a bad direction, engineers and code committees need to reevaluate their criteria for insulation and focus on overall energy savings.

# Insulation Facts and Myths

## More insulation equals more energy savings: MYTH

Insulation costs a lot of energy to produce. Most of the energy savings come from a thin layer of insulation. Additional insulation is actually wasted.

"... most of the insulation is unnecessary, adding cost with little to no effective payback."

## All insulation materials are the same: MYTH

Some materials have much better insulation properties than others, allowing them to do an equal or better job using less material.

## The same insulation thickness should be applied to all systems: MYTH

There are too many different piping applications for a "one size fits all" solution to be effective. It is more efficient to set energy-savings goals and engineer the insulation to each specific case.

## Not all "lost" BTUs of energy are wasted: FACT

Energy "lost" from pipes running through a heated space actually helps heat the space and isn't wasted. The same applies to chilled water lines running through a cooled space.

## All piping systems lose the same amount of heat: MYTH

While some piping systems are made from conductors, such as steel and copper, others are made from insulators, such as polypropylene. These systems have a much lower heat loss.

## Energy codes can have unintended negative consequences: FACT

By making hydronic systems overly expensive with excess insulation, energy codes can actually drive the market toward less efficient, less environmentally responsible systems.

## Energy codes are fixed and unchangeable: MYTH

Civic-minded engineers and industry experts can join code committees and help direct code development based on practicality, rather than lobbying power.

## Start Saving Now

Learn more about insulation savings by visiting [www.aquathermpipe.com](http://www.aquathermpipe.com) or contacting your nearest Aquatherm representative.