

PIPING SYSTEMS



PIPELINE

Winter 2025

Servicing Hydronic Heating and Cooling Systems: Why Professional Expertise Matters

Hydronic heating and cooling systems have become a popular choice for commercial buildings due to their efficiency and ability to provide comfortable indoor environments.

Hydronics is a generic term which refers to the use of liquid water or gaseous water or a water solution (usually glycol with water) as heat-transfer medium in heating and cooling systems. Controls and control valves are required and installed with a hydronic system. A hydronic HVAC system uses water as the primary fluid to transfer energy throughout the building. To deliver heat, the system must have a heat source, such as a boiler, and to provide cooling, the system must have a cooling source, such as a chiller or cooling tower.

These systems use water or a water-glycol solution to transfer heat, making them an eco-friendly and effective solution for temperature regulation. However, servicing these systems requires a high level of expertise and specialized knowledge.

Components in Hydronic Heating & Cooling

Hydronic systems utilize water or glycol to distribute heat or cooling throughout a building. They are comprised of these 5 components:

- **Boiler or Chiller:** The boiler heats the water in heating systems, while the chiller cools it in cooling systems.
- **Piping:** A network of pipes circulates the heated or cooled water to different areas of the building.
- **Heat Exchangers:** These devices transfer heat from the water to the air in the case of heating, or absorb heat from the air to the water in cooling systems.

- **Pumps:** Pumps are crucial for maintaining the flow of water throughout the system.
- **Control Systems:** Thermostats and other control mechanisms regulate the temperature and flow of the water.

Types of Hydronic Systems

- **Radiant Heating Systems:** These systems circulate hot water through tubing in floors, walls, or ceilings, providing a consistent and comfortable heat.
- **Fan Coil Units:** These units use a coil to transfer heat from the water to the air, which is then distributed by a fan.
- **Radiators and Convectors:** Traditional radiators and modern convectors heat air through conduction and convection.
- **Chilled Beam Systems:** In cooling applications, chilled beams use cooled water to absorb heat from the room, which is then distributed through convection.

Service Complexities

Servicing hydronic systems is not a task for the inexperienced. These systems are complex and require detailed knowledge to maintain and repair effectively. Here are a few challenges associated with servicing:

- **System Integration:** Hydronic systems often integrate with other building systems, requiring a comprehensive understanding of HVAC and plumbing.
- **Balance and Efficiency:** Ensuring the system is balanced and operating efficiently requires precise calibration and expertise.

[Read the full article here](#)



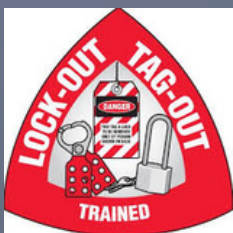
31 Mill Street (Rt. 79) • P.O. Box 409
Assonet, MA 02702 •
PSI@PipingSystemsIns.com
tel: 508/644-2221 • fax: 508/644-2447

Scan this QR Code with your
smartphone to easily find us online
www.PipingSystemsIns.com



How Many PSI Certifications Do You Recognize???

Chances are, if you need something done right, PSI has achieved a certification for it! Check out some of our certs here and then [go to our website](#) to see them all!



Employee Spotlight



Mike Souza

Starting out as Assistant Shop Foreman, Mike quickly learned the ropes and earned his place as a leader at PSI. He's now been Shop Foreman for about 5+ years.

Mike's viewpoint is simple and practical: "If it can be welded, we'll weld it."

Mike's real passion is big jobs, where he gets to do 14" - 16" steel fabrications for massive projects. "I like to see my work in the building; see it take shape as everything comes together. Doing the final welds on a big project is really something."

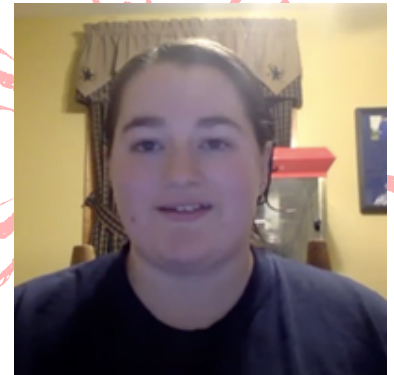
In his off time, Mike is 100% a family man, spending much of his free time doing "Dad stuff." Keep at it, Mike! We're proud to have you on board.

Aurora Breen

Aurora is another gem that came to us from Diman Regional Technical High School 8 years ago. She's our go-to Admin Clerk who also has a background in Business Administration.

Like her mentor, Sharron Furtado, Director of Administration & HR, she takes care of the "business" side of things, handling operations and the behind-the-scenes activities that keep PSI running smoothly.

You've never met a bigger bookworm than Aurora. "Some say that I have a small problem



with books," she reports because she shamelessly admits to owning more than 350 of them!

We wouldn't be who we are without Aurora. A huge thanks to her!



Victor Silva

Victor is a PSI electrician who started off 8 years ago doing alarm systems, fire protection

and "Everything else in between!" he says.

He cites PSI's push for employee education as a major factor in his career success. "The company is appreciative of the employees, and they enjoy helping you learn different fields or getting different licenses so you have an opportunity to grow."

Victor's versatility and focus on continuous improvement have made him an invaluable member of the PSI family. We are incredibly grateful to have him with us. Thanks, Victor!



Did you know your company actually saves money and protects its property by having a [Sprinkler Inspection Agreement](#) in place?

A fire inspection agreement is a simple way to **reduce insurance costs** for your building.

Don't have one yet? We've got you! Give us a call, and we'll create a customized agreement for your fire suppression system's ongoing health and maintenance.

[Go here to learn more](#) about why Sprinkler Inspection Agreements are so essential for the safety of your assets and employees.

And click below to see if your sprinkler system is ready for a real fire emergency.

Check My Sprinklers!



"PSI Does Good Work for a Good Price" The Diocesan Health Facilities of Fall River Updates its Fire Protection



The team at Piping Systems has been serving Massachusetts as a fire protection systems expert for over 50 years. Our estimators, project managers, and team members have designed and managed fire protection systems for many industries and applications.

We asked one of our favorite customers, **Peter Landry with the Diocesan Health Facilities Office of Fall River, MA**, about his experience working with PSI.

"We run five skilled nursing facilities in southeast New England. There was a **steam piping project** I needed to move forward on. There were old steam pipes below grade that needed to be replaced, and one of our plumbers said you should check these people out at PSI. So I did. And that project came out very well.

"Then it was recommended by federal safety inspectors that we should go to **quick response sprinkler heads**. I got pricing to do that at one of our facilities. Well, this turned out to be a bigger project than just typical maintenance of a fire sprinkler system!

"I always go out for pricing when it's going to be a significant job, like replacing several hundred sprinkler heads. And PSI ended up being the best price, so I went with them.

"I've reached out to them a couple of times on another facility. A **water main break** happened on the property, and the building inspector wanted us to open up the mains inside the building and ensure there were no stones because the break was near the street. They didn't want stones in the sprinkler system!

"So that becomes one of those calls where it's, 'Hey, I need help right now!' PSI has always been able to respond very well to my needs. **They do very good work for a good price.**

"I have another facility where we're looking at redoing the sprinkler system in the attic, and they recommended a **sprinkler engineer**. So, I use them as a resource as well as doing work for us. It's helpful when you call someone and if they can help you out, they will, but if they can't, they refer you to someone else. That's important in this business because a lot of times you've got to get projects done quickly."

Whether you are contemplating a brand new building, renovation or alteration, an installation of a fire pump or anything related to your fire protection system, be assured that PSI will handle your project with remarkable service, remarkable expertise, and remarkable value.

Fire Protection Trends that Also Are Sustainable

The fire protection industry has experienced a significant shift toward sustainability, aiming to minimize environmental impact while maintaining safety standards. Here are 6 eco-friendly materials, innovative technologies, or sustainable practices that are part of this trend.

Fluorine-Free Firefighting Foams. Traditional firefighting foams often contain fluorine compounds that persist in the environment and pose health risks. The development of fluorine-free foams offers a sustainable alternative, providing effective fire suppression without the associated environmental hazards. One notable innovation is SoyFoam™, an environmentally friendly firefighting foam developed by Wisconsin's Chippewa Valley Technical College Fire Safety Center. SoyFoam™ is a plant-based alternative to traditional foams and represents a significant advancement in sustainable fire suppression technology.

Eco-Friendly Fire Suppression Agents. Traditional fire suppression systems often relied on chemicals detrimental to the environment, such as halons, known for their ozone-depleting properties. The phase-out of these substances has paved the way for environmentally benign alternatives. For instance, FK-5-1-12, a clean agent, offers effective fire suppression with a minimal environmental footprint, featuring zero ozone depletion potential and a short atmospheric lifetime. Similarly, aerosol-based systems like Stat-X provide compact and efficient fire suppression without relying on harmful chemicals.

Water Mist Systems. High-pressure water mist systems have emerged as sustainable alternatives to traditional sprinkler systems. These systems utilize fine water droplets to suppress fires, significantly reducing water usage and subsequent water damage. Their efficiency and minimal environmental impact make them suitable for various applications, including industrial settings and heritage buildings.

Inert Gas Suppression Systems. Inert gases such as nitrogen and argon are increasingly used in fire suppression due to their natural occurrence and low environmental impact. These gases extinguish fires by reducing oxygen levels to a point where combustion cannot be sustained without leaving harmful residues or affecting the ozone layer.

Innovative Fire-Resistant Materials. Research by Jaime C. Grunlan, a professor of Mechanical Engineering at Texas A&M University and a Fellow of the American Chemical Society, has resulted in water-based, non-toxic flame-retardant coatings for fabrics and foams. His



Watch: SoyFoam: The Sustainable Solution for Firefighting

groundbreaking work in polymer nanocomposites and environmentally benign flame-retardant treatments has advanced fire protection solutions that reduce reliance on toxic chemicals and enhance safety without compromising environmental integrity.

Grunlan's research represents a breakthrough in the fire protection industry because it provides sustainable, non-toxic alternatives to traditional flame retardants, which often contain hazardous chemicals. His water-based nanocoatings offer an effective way to enhance fire resistance in textiles, foams, and other materials without producing harmful emissions or residues. By integrating nanotechnology into fire-resistant materials, Grunlan has paved the way for a new generation of eco-friendly fire protection solutions that meet regulatory standards while reducing environmental impact.

Is your fire protection system environmentally friendly and up to code?

Schedule a FREE consultation with experts in PSI's fire protection department to assess your needs and discover which sustainable fire suppression solutions can be tailored to your facility.

**FREE
FIRE PROTECTION CONSULT**



31 Mill Street (Rt. 79) • P.O. Box 409
Assonet, MA 02702 •
PSI@PipingSystemsIns.com
tel: 508/644-2221 • fax: 508/644-2447

Scan this QR Code with your
smartphone to easily find us online
www.PipingSystemsIns.com

