

What Hydronics Contractors Can Learn from Plumbing Contractors

Those supply and return lines to and from the mechanical room are perfect candidates for a highly workable, robust and quick-to-install piping system.

By Donna VanMeter, May 7, 2021



When it comes to hydronic distribution piping, at first glance, it appears that little has changed in these systems since my grandfather's system nearly 100 years ago. A closer look at some key shifts in residential systems, however, sheds light on the direction of distribution systems this century and trends that we are likely to see, or have already seen, in larger commercial applications.

Stepping back in time, my grandfather's house had black iron and, later, copper pipe connecting the boiler and terminal units, and, in his case, a fairly straightforward installation to fin-tube radiators. It also had similar connections to the very simplified water distribution system for the home's plumbing.

Since then, plumbing has seen many changes in material and distribution piping, while hydronics has continually held fast to tradition. If it works, don't fix it, right?

Flexible piping

During the last couple of decades, PEX became the next wave of material substitution, taking over the majority of residential plumbing applications across United States and Canada. PEX is an excellent alternative to traditional piping materials such as copper and iron.

Of the various types of PEX, PEXa has brought quality and workability to plumbing contractors for many years. Heating contractors that have primarily kept their nose to the grindstone - or less proverbially, to the soldering gun - when it comes to their hydronics installations, might want to look up and check out what the plumbers are using these days.

Not our focus here, but if PEX is new to you, I highly recommend looking into the differences between PEXa through PEXc.

While PEX is now a given in residential plumbing, more recent, small changes in the systems have commercial plumbers beginning to take notice.

These small changes consist of, quite literally, the components that send the flow in a new direction: The fittings. Options such as low-lead brass 45s, multiport tees and convenient battery-powered tools have made switching to PEX for all plumbing pipe needs a must for any contractor looking for a high-quality system with more workability and timesavings.

Studies show that plumbers can install PEXa more than 50 percent faster than copper with press fittings. The 2018 study, conducted by Home Innovation Research Labs and commissioned by REHAU, quantified the installation time savings plumbers can achieve by using the REHAU PEXa plumbing system vs. rigid piping systems and other cold-expansion PEX systems in a typical commercial new construction setting.

The timed installations were performed by an experienced commercial plumbing crew in two identical sections of a mockup hotel guest floor. Each of the four systems were installed on a section of the mockup by two different plumbers. The installations included ½-, ¾-, 1, 1 ¼-, and 2-inch piping, representing the size ranges in a typical hotel plumbing system. Complete details on the commercial plumbing time study can be found at: <http://www.everlocplus.com/timestudy>

Why miss out?

Why should the benefits of more workability and timesavings only be experienced by plumbers?

Those supply and return lines to and from the mechanical room are perfect candidates for a highly workable, robust and quick-to-install piping system.

From fan coils and baseboards to in-slab radiant and hydronic snow and ice melting systems, PEX can reduce time on installs and provide a corrosion-free system that will not only outlast the typical metallic system, but likely the building as well! New versions of cold-expansion fittings (available for PEXa pipe) go together in seconds - not minutes - and are available in the typical sizes used in most hydronics piping applications.

Some contractors prefer to augment their jobs by switching to PEX as soon as they get into the secondary loop, while others take it further back into the mechanical room. Being a flexible polymer, PEX opens up more possibilities than were ever available with copper pipe, while still maintaining a level of quality that runs circles around (literally, if you'd like) antiquated plastic pipes.

The preferred PEXa pipe is flexible and durable, resisting slow-crack propagation and ensuring longevity and a level of security that is required on commercial jobs.

I often hear from heating contractors that it is harder to make PEX look great in the mechanical room. To them, I suggest that the appearance of PEX can be made to look just as good or just as bad as any other pipe.

For example, you can work with convenient coils of PEX - 100, 300, 500 or even 1,000 feet- for the long behind-the-wall runs and switch to 20-foot straight lengths for the visible piping in the mechanical room. For visible overhead distribution lines, you can make perfectly plumbed masterpieces with support channels and hangers. The point is, you have a choice: You're not stuck with handling sticks of copper or steel, with all the connections they require to make the simplest directional change.

You can install hydronic piping runs with few, if any, fittings because the flexibility of the pipe allows bends and sweeps to be formed without the use of fittings, reducing installation time and pressure loss in the piping.

As an added convenience that reduces wear-and-tear on you, PEX is very lightweight; a 100-foot coil of 1-inch pipe weighs only 17.5 pounds while an equivalent length of copper would come in at a whopping 65.5 pounds.

Unplanned events

Up to now, we have only discussed the idealistic world where a contractor installs a hydronic or plumbing system exactly how they envisioned it. Best laid plans, right?

Although never planned, kinks and punctures to the pipe can occur. Another advantage of using PEXa in hydronics distribution piping applications is its resistance to kinking and the ability to repair a kink or a puncture in the field.

If the pipe gets kinked, simply remove any internal pressure, apply heat from a standard heat gun just long enough to re-round the pipe, then let the pipe cool. The pipe is now actually stronger in the heated area and the whole procedure only takes seconds.

Wherever a new section of pipe needs to be spliced in, using REHAU EVERLOC+® compression-sleeve fittings allows for immediate pressure testing, an advantage plumbing contractors have enjoyed for years.

In conclusion, whether you are a residential contractor needing to distribute hot water to radiant manifolds or baseboards, or a commercial contractor needing to distribute hot water to a snow melt system or cooled water to a chilled beam system, anywhere you're using hydronics, PEX pipe can be the distribution method.

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