

THE WHOLESALE

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Legionnaire's vs. scalding issue

Demand for dhw safety now puts thermostatic valves in the right place

BY HEATH SHARP

Special to THE WHOLESALE

FEAR IS A GREAT MOTIVATOR WHEN IT comes to selling. So it's surprising that the U.S. market has been slow to adopt thermostatic mixing valve technology for universal water temperature control.

It's surprising because the installation of thermostatic mixing valves in residential plumbing systems can mitigate the double dangers of scalding from too-hot hot water taps and of contracting potentially fatal, pneumonia-like Legionnaires' disease from hot water that isn't hot enough.

New research, published last fall (see website www.legionella.com) makes clear the dangers of Legionella bacteria and how grossly under-diagnosed Legionnaires' disease is.

The provocative title of the published study is "Legionnaires' Disease Contracted from Patient Homes: The Coming of the Third Plague?" Indeed, the federal Centers for Disease Control website (www.cdc.gov) says that 8,000 to 18,000 people contract Legionnaires' disease each year, with the illness fatal in 5% to 30% of the cases.

The study recaps data from around the world in documenting the presence of Legionella bacteria in residential water systems because of water heaters being set below 140°F in order to prevent scalding injuries. It's a perfect habitat.

Because the bacterium enjoys warm water environments, it's a potential problem in hot water distribution systems. A water temperature of 120°F or less can provide conditions that allow Legionella to thrive. Raising the stored water temperature to 140°F kills most of the

bacteria, greatly reducing the chances of an unsafe water supply.

On the other hand, the U.S. Consumer Product Safety Commission says approximately 3,800 injuries and 34 deaths occur each year due to scalding from excessively hot residential tap water. The National Safe Kids Campaign puts the numbers even higher at 6,500 scald injuries annually.

In our over-litigated society known for dramatic liability judgments, it's no surprise that there's a trade group focused on scalding injuries. It's the Ass'n of Trial Lawyers of America's a "Tap Water Burn Litigation Group" (website www.tap-water-burn.com).

It's ironic. Water heaters set low enough to prevent scalding can allow growth of the deadly Legionella bacteria while water heaters set high enough to kill the bacteria can result in thou-

Scalding or Legionnaires'?

Liability issues will drive the proper placement of thermostatic mixing valves

sands of burn injuries and dozens of deaths each year.

For liability lawyers there are judgments to be had, one way or the other.

With all this potential for bad press and expensive litigation, it's pretty amazing that U.S. plumbing wholesalers and contractors haven't made a faster jump to the proven solution of thermostatic mixing valves.

With this kind of fear factor looming in the marketplace this new valve technology represents a tremendous selling opportunity for plumbing supply houses, code-driven or not.

A thermostatic mixing valve allows the water heater to be set at a germ-killing 140°F while dispensing water to all hot water outlets in the home at a safe 120°F, or lower if desired.

Note: Do not confuse thermostatic mixing valves with pressure-balancing valves, which traditionally are intended specifically for single shower fixtures.

Unlike other countries, state and local codes in the U.S. don't yet universally require thermostatic mixing valves. For some years now laws in Australia and New Zealand have stipulated the dual requirements of high storage temperatures and controlled supply temperatures to all outlets used for bathing purposes.

The growing awareness of the dangers of Legionnaires' disease and of too-hot tap water, along with the success of the programs in Australia and New Zealand, have led many countries to consider similar statutes. The U.K. and France are close to adopting similar codes, with other European countries expected to follow.

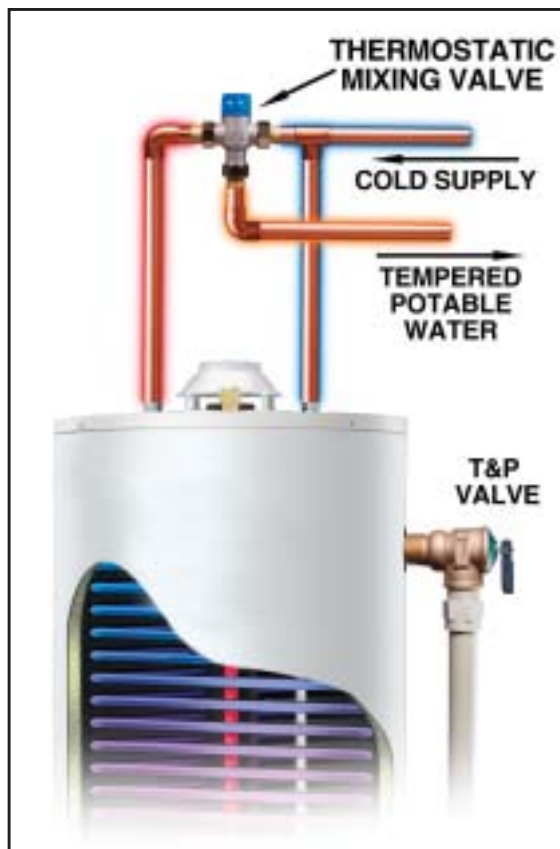
Closer to home there have been extensive discussions recently in Canada addressing this issue. The result is proposed legislation demanding high storage/low distribution temperatures to be implemented.

While U.S. codes don't require this at the moment, it certainly is permitted to control hot water to *all* outlets, a practice is supported by many inspectors and major contractors.

In fact, it's increasingly understood that protecting *only* the shower is *not* acceptable for today's needs. In fact, many local codes and local interpretations of the major codes do require controlled temperature water to all outlets.

Most notably, the City of Chicago passed an ordinance introducing new general regulations for plumbing, with Section 18-29-607.1.1 of the code specifically requiring water temperature to be a maximum of 115°F for all lavatory faucets in public buildings. The code allows the choice of multiple solutions.

The first is based on an ASSE 1017 device, such as our firm's Heatguard 100, developed by our parent firm Reliance. This style of valve is typi-



A typical installation of a thermostatic mixing valve at the water heater requires very little extra piping and fittings.

cally installed at the water heater, thus providing a safer water temperature throughout the building. The second solution is based on an ASSE 1016 device, such as our Heatguard 160 or compact

these advantages:

Controlled temperature water can be delivered to multiple outlets. Instead of protecting a single shower, as with a traditional "1016" shower valve, a "1017" distribution valve can control the water temperature to several hot water outlets.

The water heater can be set to 140°F. This higher setting allows more efficient operation, increasing the effective volume of water from the heater.

Consider a 75-gallon heater. At a setting of 120°F the heater can deliver approximately 100 gallons of 100°F water (when mixed with 25 gallons of 40°F cold at the point of use). The same heater at 140°F can deliver approximately 125 gallons of 100°F water to the point of use (when mixed with 50 gallons of 40°F cold water) — an effective increase of 25 gallons!

Furthermore, storing water at 140°F minimizes the growth of Legionella bacteria inside the water heater.

A wider choice of point-of-use fittings is now available. The use of an ASSE 1017 distribution valve complements a wide selection of point-of-use fittings.

Considering all the new fittings available today, a universal temperature control program is a safer option for the installer, with the maximum water temperature of 120°F.

Of course, the choice of an ASSE 1016 single-handed fitting is still available for shower fixtures, and in fact is recommended as protection against thermal shock and as an additional convenience for the consumer.

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Heatguard 145, specifically intended for single electronic faucets.

Growing awareness that hot water from any outlet can be dangerous means more codes likely will specify universal temperature control via "1017" devices.

In addition to allowing compliance with such code changes, thermostatic valves offers

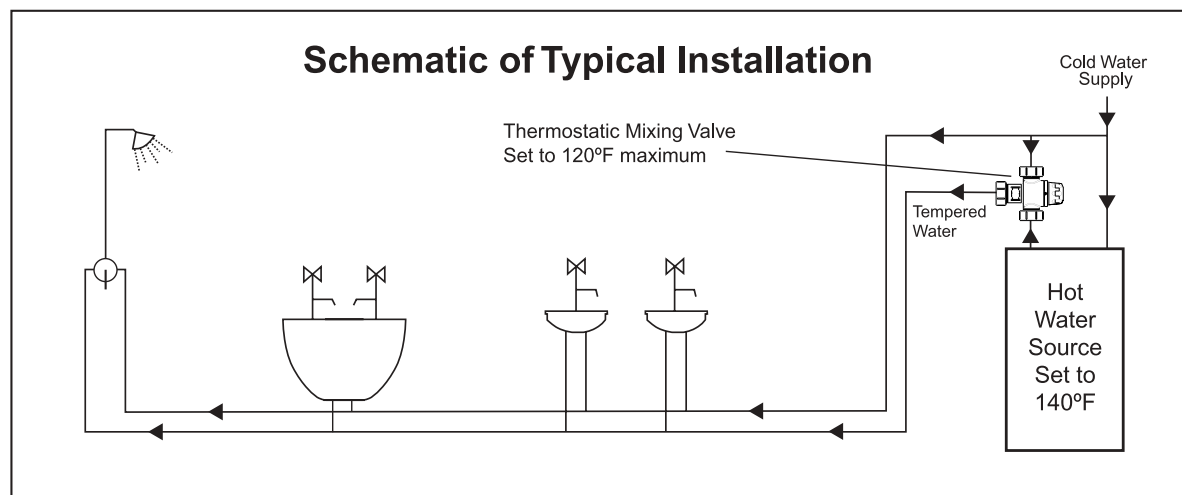
Sales potential is great

Perhaps the greatest fear of all businesses, especially one as competitive as the wholesale plumbing supplies business, is that of losing sales. Horrible accidents, mass disease and out-of-control lawsuits notwithstanding, failing to meet financial projections is probably more motivating as a reason to explore new sales opportunities.

If ever there was a plumbing product that offered growth potential for both new construction and the retrofit market, thermostatic valves is it.

And when you can promote the product while offering customers the true benefits of greater safety *and* more hot water, it's a win/win situation that deserves some attention — and that's nothing to be afraid of.

Heath Sharp is general manager of Cash Acme (www.cashacme.com), a leading manufacturer of water pressure and temperature control valves, backflow prevention devices, and other plumbing product. Cash Acme is a division of Reliance Worldwide Corp.



By installing a thermostatic mixing valve at the water heater, water temperature can be maintained above 140°F to mitigate Legionnaires' bacteria yet provide safe temperatures below to 120° at faucets and showers.