

CONTRACTOR®

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Scalding water found in 91% of hotel rooms

DES PLAINES, ILL. — A recent survey conducted at major hotel chains across the U.S. has revealed a vast majority of hotel sinks, bath and shower fixtures deliver water at scalding temperatures. For the past year, Bruce Fathers, director of marketing for Powers, and his sales managers, armed with Extech Instruments digital thermometers, have surveyed water temperatures in every hotel room in which they've stayed. Of the first 100 rooms surveyed, more than 91% delivered maximum hot water temperatures for showers in excess of 115°F (46.1°C) while 78% provided water in excess of 120°F (48.9C).

"This creates huge liability potential for owners and operators," said Fathers. Powers is a leading manufacturer of water tempering technology. Conversely, 47% of rooms surveyed recorded temperatures of 124°F (51°C) or less — ideal for Legionella growth and proliferation. More than 96% of shower valves surveyed were pressure balancing (ASSE 1016, Type P).

The ongoing survey includes temperatures sampled at more than 100 guest rooms at 29 major hotel chains in 27 states. No read-

ings were omitted from the survey. The average maximum shower temperature was 126.4°F (52.4°C). Faucets delivered an even higher average maximum hot water temperature of 127.4°F (53.0°C). The highest recorded temperature at a shower was 171.5°F (77.5°C) while the highest temperature at a lavatory was 161.9°F (72.2°C). At 120°F, it takes eight minutes to produce a first-degree burn. At 140°F, it only takes three seconds to sustain a first-degree burn.

The survey gives credence to the belief that a manufacturer's instructions, maintenance guidelines and numerous warnings regarding proper limit stop setting and adjustment are not routinely followed.

Fathers told CONTRACTOR that he believes many facilities managers are under the mistaken impression that a pressure-balancing valve will automatically take care of scalding problems when, in fact, hot water systems need to be adjusted and maintained.

Incoming cold water temperatures may vary from winter to summer

Powers survey of hotel rooms

Guest rooms surveyed	102
Hotel chains represented	29
States represented	27
No. of showers with water temperatures >/= 116F	91.2%
Average maximum hot water temp. - shower	126.4°F
Average maximum hot water temp. - lavatory	127.4°F
Highest temperature recorded - shower	171.5°F
Highest temperature recorded - lavatory	161.9°F

from 45°F to 75°F, Fathers noted, which would increase delivered hot water temperatures by 5°F. A maintenance man may have increased hot water temperatures in response to a guest complaint. Or the limit stops on the shower valves are not properly set and adjusted.

Though most hotels are equipped with "anti-scald" shower valves in the guest rooms, maximum temperature stops must be set by installers and readjusted periodically by hotel maintenance professionals because of seasonal changes in cold water supply or authorized/unauthorized adjustment of master tempering valves up-

stream. If not properly set and periodically adjusted, or if the installed valve does not protect against both pressure and temperature fluctuations, hotel guests are usually unaware that water can be delivered at dangerously high temperatures.

"Many facility managers are unaware there are different levels of anti-scald protection as defined by the bather safety and performance standard ASSE 1016," added Fathers. "The most common valve, with technology that dates back more than half a century, is the pressure-balancing valve (ASSE 1016- Type P). The highest level of protection, however, comes with combi-

nation T/P technology (ASSE 1016-Type T/P) which not only provides protection against pressure changes but, equally important, temperature fluctuations as well."

"To be effective, an anti-scald valve must be properly installed with the handle-rotation stop set to a safe temperature (typically below 115°F)," explained Jim Graves, director of engineering for Powers. "Most importantly, the limit stop setting must be tested and adjusted periodically, a task that's often

neglected by hotel maintenance personnel."

This adjustment is necessary because they do not compensate for seasonal changes in water temperature, adjustment or tampering with the hot water supply temperature, or even failure of upstream tempering devices.

Because Type T/P valves sense temperature, they automatically maintain their settings, regardless of temperature changes, for whatever reason, within a plumbing system. The risk of supplying

dangerously hot water is drastically reduced.

Fathers noted that cost has been a big impediment to the use of T/P valves. A pressure-balanced valve typically costs \$100 while a T/P valve may cost \$400. Powers has come out with a \$150 T/P valve that can handle 4.5-5.0-GPM that may be more saleable to hotel management.

Conversely, decreasing hot water temperature in a delivery system reduces the danger of scalding but increases the risk of bacteria growth. Above 124°F

Legionella survive but cannot multiply; above 131°F Legionella die within five to six hours.

The solution is to distribute hotter water to sanitize the plumbing system, and to prevent hot water from leaving the bathroom fixtures. Simple T/P valve technology addresses this issue. Powers offers more detailed information on the hotel temperature survey. Or, you can request the Special Report on Shower Valve Safety highlighting the issues, technologies, standards and trends.

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Powers' T/P Combination Valve Boasts a Series of Firsts



Powers newest line of ASSE 1016 listed, type T/P shower valves featuring an advanced thermal actuator (ATA) that provides unparalleled response time and a series of firsts in shower valve technology.

The e700 Series is the industry's first value-designed combination valve offering both temperature and pressure protection at a cost less than half traditional thermostatic shower valves and a third of traditional combination valves. The e700 Series meets the most stringent performance demands of ASSE 1016 (Type T/P) for both pressure and temperature changes within a plumbing system.

The HydroGuard T/P Series (including the e420) are the first combination valves to meet the Type T/P standard utilizing a highly efficient, single-control actuator for both pressure and temperature sensing. HydroGuard T/P responds to pressure changes of 50% or more, the same requirement placed on pressure balancing valves by ASSE 1016 (traditional thermostatic shower valves

can accommodate only 20% pressure fluctuations as defined by the standard).

The HydroGuard T/P Series features an approach temperature of only 5°F, also an industry first. This allows the mixed temperature to be within only 5°F of the hot water supply temperature – ideal for installations where hot water is distributed at lower temperatures. More importantly, the e700 does not require the readjustment of the temperature limit stop due to changes in supply water temperature. Common pressure balancing valves must constantly be readjusted.

The e700 Series is also the first combination valve to feature back-to-back installation, ideal for hotels, assisted living facilities and multi-family dwellings. Other standard features include:

- Integral checkstops for ease of service
- Exclusive 5-year warranty on the internal tempering mechanism
- Single cartridge design for simplicity of repair.
- Non-corrosive components to resist harsh water and sticking commonly associated with all metal internals
- Shallow wall installation in only 4" wall depth.

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