Scalding Water Found in Over 92% of Hotel Rooms Surveyed…Legionella also a Risk.

A recent survey conducted at major hotel chains across the U.S. has revealed a vast majority of hotel sink; bath and shower fixtures deliver water at scalding temperatures. More than 92% of hotel rooms delivered maximum hot water temperatures for showers in excess of 115ºF (46.1ºC) while 78% provided water in excess of 120ºF (48.9ºC). Conversely, 47% of rooms surveyed recorded temperatures of 124ºF (51ºC) or less – ideal for Legionella growth and proliferation. Over 96%of shower valves surveyed were pressure balancing (ASSE 1016, type P).

The ongoing survey, conducted by Powers, includes temperatures sampled at nearly 80 guest rooms, including 66 hotels and 8 major hotel chains in 27 states. The average maximum shower temperature for rooms surveyed was 125.8ºF (52.1ºC). Faucets delivered an even higher average maximum hot water temperature of 126.9oF (52.7ºC). The highest recorded temperature at a shower was 158ºF (70ºC) while the highest temperature at a lavatory was 162ºF (72ºC). At 120ºF, it takes eight minutes to produce a first-degree burn. At 140ºF, it takes only 3 seconds to sustain a first-degree burn.

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

By the Numbers (as of 5/1/04)	
Guest Rooms Surveyed	79
Hotels Represented	66
Hotel Chains Represented	8
States Represented	27
No. Of Showers with Water Temperature ≥ 116ºF	**92.4%**
Average Maximum Hot Water Temperature - Shower	**125.8ºF**
Average Maximum Hot Water Temperature - Lavatory	**126.9ºF**
Highest Temperature Recorded - Shower	**158.7ºF**
Highest Temperature Recorded - Lavatory	**162.1ºF**

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 upstream. 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 actually different levels of anti-scald protection as defined by the bather safety and performance standard ASSE 1016. The most common valve, with technology that dates back more than a half a century, is the pressure-balancing valve. The highest level of protection available comes with combination T/P technology, which not only provides protection against pressure changes but, equally important, temperature fluctuations as well.

Because 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 temperature is dramatically reduced.

Decreasing hot water temperature in a delivery system reduces the danger of scalding but increases the risk of bacteria growth. Above 124ºF legionella survive but cannot multiply, above 131ºF legionella die within 5 – 6 hours.

One solution is to distribute hotter water to sanitize the plumbing system, and to stop hot water from leaving the bathroom fixtures. Simple T/P valve technology can help address this issue.