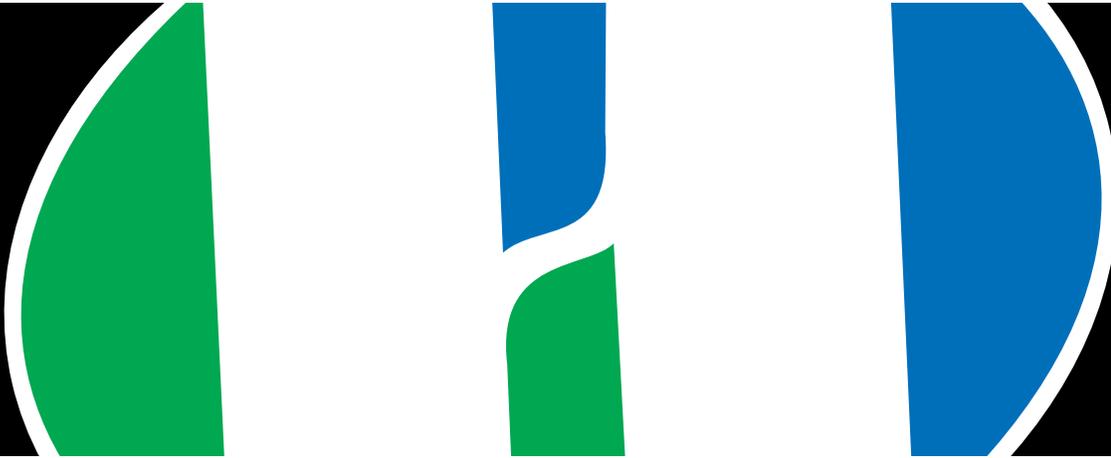


# WHITE PAPER



## ON-DEMAND HEAT FOR TEMPERED WATER

### WORKER SAFETY: ON-DEMAND HEAT FOR TEMPERED WATER

ON-DEMAND HOT WATER HEATING  
PROVIDES EMPLOYEES WITH SAFER  
WORK CONDITIONS WHILE MEETING  
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## ON-DEMAND HOT WATER HEATING PROVIDES EMPLOYEES WITH SAFER WORK CONDITIONS WHILE MEETING STRICT ANSI REQUIREMENTS.

By Casey Hayes

The ANSI requirement for providing tempered water to emergency showers and eyewashes has been part of the standard since 1998. That requirement has been successively clarified with both the 2004 and the current 2009 revisions. It's interesting to note that more than most any other new (or newly clarified) requirement we've ever seen, the adoption of tempered water capabilities at the plant level has been pretty slow. We believe this to be due to the complexity of most traditional tempered water solutions, which drives both high initial installation and operating costs. Put bluntly, it seems most specifiers are looking for a better solution...enter the new wave of system designs using instantaneous hot water heaters.

Traditional system designs use a water heater, storage tank and mixing valve(s) to provide instant access to water within the prescribed temperature range. Water is maintained at the prescribed temperature 24/7 and generally re-circulated to maintain temperature. Instantaneous heaters simplify the system design greatly. They eliminate the storage tank and mixing valve completely because hot water, at the prescribed temperature, is precisely "made" on-demand. Obviously, a less complex system is easier to design and maintain, as well as most often carrying lower capital and operating costs.

Yet another reason for moving toward on-demand hot water heating is the environmental aspect. If one considers the number of times an emergency shower or eyewash is actually used in the average safety-conscious plant operation versus the cost of heating and re-circulating hot water 24/7 in a traditional system, the "green" benefits of on-demand water heating become very clear. Your electrical demand, even factoring in the infrequent use of on-demand power consumption, is significantly lower! And, there are water use and infrastructure deterioration considerations that also become a factor. Maintaining a closed-loop water re-circulation system for what amounts to a (hopefully) very infrequent use just seems to be an approach that is destined to be replaced.

To illustrate this point, consider the following two diagrams:

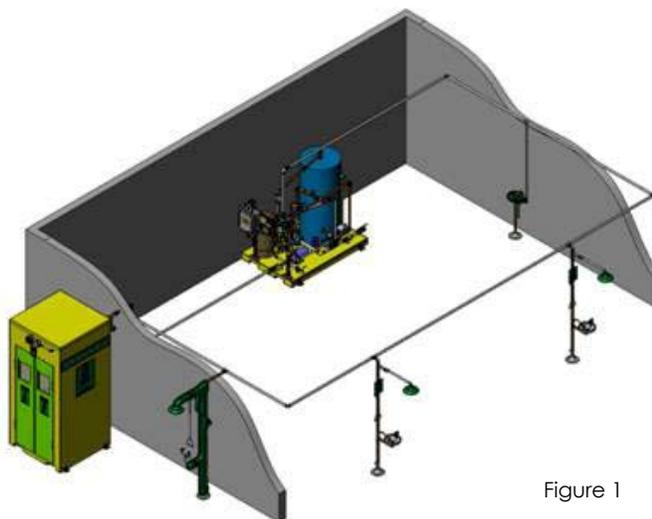


Figure 1



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In figure 1, the centralized heating and recirculation system is depicted. The complexity of piping for the heating and recirculation loop is obvious, as is the fact that the system is mostly dependent on all outlets and centralized components to operate. Most breakdowns and maintenance operations will render the system inoperative for a period of time. This detracts in addition to the cost of installation and cost of operation issues raised earlier.

Contrast that to the decentralized system shown below:

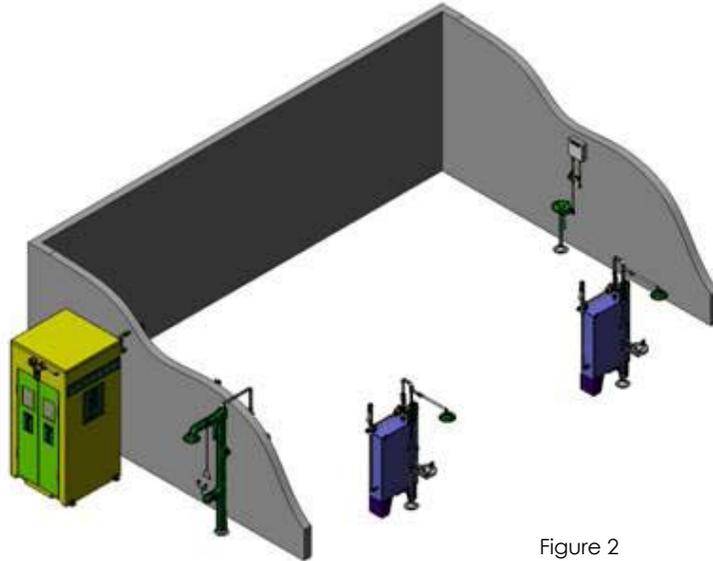


Figure 2

In figure 2, the shower and eyewash outlets are decentralized and water is only heated as needed. The lower complexity is evident, as is the ability of the system to operate when only one outlet is "down" for maintenance and/or repair.

We sincerely hope that the initial cost, system complexity and on-going maintenance savings afforded by incorporating the latest advancements in high-efficiency instantaneous water heater technologies into tempered water systems will lead to greater compliance with the current version of ANSI Z358.1. Greater employee safety and enhancement of first response capabilities will be the most worthwhile end result.

For more information on the full range of ANSI-compliant tempered water emergency shower and eyewash products visit [www.hawSCO.com](http://www.hawSCO.com). To arrange a free third-party inspection at your facility, call us at (888) 640-4297.

#### **ABOUT HAWS**

Haws Corporation designs, manufactures and distributes drinking fountains and emergency equipment that are ranked #1 in quality by specifiers in both product categories.

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