

Tempering Emergency Equipment Water

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OVER the years, great strides have been made in worker safety. Things have changed dramatically from the days when injuries, even deaths, were anticipated "costs" of progress and/or production. The true cost of worker injuries in terms of lost production, medical expenses, and human suffering eventually overtook the "you're lucky to have a job" mentality that pervaded the earlier part of the industrial age.

As a result, literally hundreds of thousands of emergency drench shower and eyewash installations are present in industrial and commercial facilities throughout the country. Starting with a forward-thinking plant manager who installed twin drinking fountain bubblers on opposing sides of a sink (making the first emergency eyewash) back around 1950, business managers have increasingly embraced the idea of providing better safeguards for the security of their workforce while providing readily accessible first aid for those who fall victim to on-the-job injury. Certainly, regulatory pressures have raised awareness of best practices and products addressing safety and first aid, but the undeniable fact remains that today's sensitivity is morally right and simply good business.

Regulatory safeguards and procedures, in the form of operating standards, are provided to industry via the American National Standards Institute (ANSI) and others. ANSI maintains specific guidelines covering emergency response equipment, including drench showers and eyewashes.

As knowledge and further experience drive changes within the ANSI Z358.1 guideline, clarifications and revisions are released. For example, in its 1998 revision, ANSI Z358.1 included a general requirement that flushing fluid be "tepid." The precise definition of that early requirement was left somewhat vague, leading to individual interpretations of the term. As a result, it means different things to different people, including the acceptability of municipally supplied water at the temperature it arrives at each commercial and/or industrial facility. The challenge comes in the fact that source water supply temperatures in most areas can be quite chilly, especially after they've run for a while.

This uncomfortable chilling can lead to cessation of the shower or eyewash use cycle prior to the required 15-minute duration. And in those instances where a victim can stand being subjected to cold water for that long, there is a real risk of hypothermia.

Conversely, weather conditions or processes used in individual plant operations can heat water left standing in piping leading to emergency equipment, making it dangerously hot if used on an injured victim. Consider how hot water becomes when left in your garden hose during a summer car-washing session. As you soap up the car, the hose lies on the ground. When you open the sprayer to rinse the car, the output water is substantially hotter than one might expect. Industrial operations can experience even more dramatic temperature changes than that simple example. Imagine an injured employee in a foundry spraying water heated by adjacent processes into his injured eyes--it's not a pretty picture.

What Z358.1 Says About Tepid Water

In ANSI's 2004 revision of the Z358.1 Standard, it further clarified the definition of "tepid" to be in the range of 60 degrees F to below 100 degrees F. Output flushing fluid must be within that range immediately at start-up of the equipment and remain there throughout the full 15-minute use cycle.

Interestingly, this clearer definition of the temperature range requirement from equipment activation through the completion of the 15-minute cycle does not seem to be "biting in." It's estimated that almost three years after the release of the 2004 revision, total eyewash/shower installations that flow tempered water remain well below 10 percent. While more and more tempering equipment and turnkey systems are sold every day, there seems to be considerable inertia in attaining substantial compliance.

Fines, Litigation for Non-Compliance

It is, in our opinion, important for users to understand that a very specific requirement is in place and local interpretation is no longer acceptable.

Delaying compliance can lead to significant regulatory agency exposure. Public records of the fines levied by OSHA for non-compliance to ANSI and other standards often reach five figures. While most of these punitive measures involve deviations beyond showers and eyewashes, they could be levied on single instances alone. It's interesting to note that fines of this magnitude often equal the cost of the changes needed to comply.

Finally, specifiers should realize that the clarity of ANSI's temperature range requirement could be considered solid proof of negligence in a lawsuit filed on behalf of an injured worker. Consider an example: An injured employee curtails his/her treatment protocol because the emergency shower water is too cold. Should a court determine that the employee sustained a more severe injury, one that could have been at least partially avoided had he or she remained engaged with the shower for the full required period, the consequences could be catastrophic.

Through its past two updates--in 1998 and 2004--ANSI Z358.1 has become more clearly specific with respect to the temperature range of emergency shower or eyewash output water. This clarity has replaced the ambiguity that led to widely varying individual interpretations of earlier iterations. Like most of the changes in the standard over time, the tempered water requirement advances the cause of injured worker security and comfort. It's a good idea and the correct thing to do. Refusing to acknowledge the change and deal with it is like sticking one's head in the sand. Remember: ANSI can still see you!