



Employee Safety

Eyewash Stations: What Plants Need to Know

James Langford | Apr 28, 2022

Eyewash fountains are somewhat like fire extinguishers: easy to overlook until they're needed, at which point the stakes are enormous. For workers exposed to a corrosive chemical, properly installed and maintained fountains can mean the difference between full recovery and vision loss or even blindness.

Job-related eye injuries affect about 2,000 U.S. employees every day, with roughly a third of those needing emergency room treatment and at least 100 resulting in one or more days away from work, according to the National Institute for Occupational Safety and Health.

The lost time is significant for employers, coming on top of about \$924 million in eye-related workers' compensation claims, according to an analysis of Labor Department data by the advocacy group Prevent Blindness.

Installing a wash station is just one piece of an effective eye-safety regimen in the workplace.

According to equipment-maker Bradley Corp. and the American National Standards Institute, a nonprofit that sets detailed guidelines often referred to by the U.S. Occupational Safety and Health Administration, other points to consider include:

Personal Wash Units: Bottled eyewash is allowed under ANSI standards as a supplement to fixtures like eyewash stations and full-body showers, not as a substitute. Portable bottles are particularly useful in extremely toxic environments since workers can turn to them in confined spaces or while en route to a flushing station.

First-Aid Practices: Consulting with a doctor on workplace hazards, especially those identified in Safety Data Sheets, before an accident can help businesses identify what types of flushing equipment are necessary: eyewash, eye and face wash or combination drench.

Waste Disposal: Planning ahead for disposing of water used in flush stations is crucial, since it will not only contain contaminants but also create a slipping hazard for workers. Activating a flushing station for 15 minutes or more may leave hundreds of gallons of liquid around showers and eyewashes, which is best disposed of by drains (simpler to install when building a new facility) or dedicated waste-containment systems. Operators should check local laws and consult with regulators when deciding on appropriate measures.

Personal Protective Equipment: OSHA requires employers to provide workers with personal protective equipment from safety glasses to bodywear such as coveralls, but ANSI Standard Z358.1-2014 makes clear that none of it serves as a substitute for flushing stations and shower equipment, which treat injuries if PPE fails.

Compliance with eye-safety standards imposed by the Occupational Safety and Health Administration, however, has the potential to curb all of those costs as well as avert thousands of dollars in fines if the agency discovers violations. Wash stations—from eyewash to eye and face wash fountains and drenching, full-body wash showers—are among a variety of eye-protection measures that OSHA requires employers to provide, including goggles that shield workers from flying debris and particles to lenses that filter out harmful wavelengths of light.

Read more: How to Pick the Right PPE: Outer Protective Gear

Nonetheless, “the percentage of facilities not complying with the rule is greater than those that are,” says Rick Kern, director of industrial sales at Bradley Corp., which manufactures eyewash stations and equipment and provides free assessments of what worksites need and how to set it up. “Some of it is willful, some of it is lack of knowledge and some of it is rolling the dice about an OSHA inspection.”

ANSI Details Wash Station Requirements

That gamble can be an expensive one: During the past year, the agency issued 223 citations totaling \$891,532 for violations of its rule governing eyewash facilities and other first-aid services.

The regulation itself is succinct, mandating that employers provide “suitable facilities for quick drenching or flushing of the eyes and body” for immediate use by people in work areas with potential exposure to injurious or corrosive materials.

For determination of what facilities are suitable, the agency relies on American National Standards Institute provision Z358.1-2014.

Its specifications call for showers and eyewashes to be located within 10 seconds or 55 feet of the hazard and supply a safe flushing liquid such as potable water or buffered saline solution.

They must be able to provide a minimum water pressure of 30 pounds per square inch for at least 15 minutes at a “tepid” temperature of 60 to 100 degrees Fahrenheit (15.6 to 37.8 degrees Celsius).

The ANSI guideline “does a good job of outlining what you should take into consideration when looking at eyewash scenarios,” Kern says.

It points to OSHA-mandated Safety Data Sheets (formerly known as Material Safety Data Sheets or MSDSs) for various substances that detail when safety equipment is required and what it should consist of: an eyewash fountain, eye and face wash equipment or a combination shower. “That’s what you use as a guide to determine where to place a product and what type,” Kern adds.

Among the most consistent challenges employers face with providing wash stations is availability of plumbed water. It’s an obvious one for outdoor operations such as construction and mining, but it also affects businesses where most work is done indoors—largely because of the distance rule.

The requirement to provide wash stations within 55 feet or 10 seconds of a hazard makes no exceptions for areas of a building lacking nearby access to water distribution lines.

Avoiding Bacterial Contamination

That, coupled with the provision that access to wash stations must be unobstructed, often requires businesses to buy portable units such as showers topped by a 500-gallon water tank.

Such tanks can’t simply be filled up and left until needed, however. The water must be changed periodically to avoid buildup of harmful bacteria that might prove just as harmful to workers as the contaminant to which they were originally exposed, Kern explains. Strains of bacteria common to poorly maintained wash stations include *Acanthamoeba*, *Pseudomonas* and *Legionella*. Exposure to them can lead to eye and neurological infections as well as diseases such as Legionnaires’, a severe and sometimes fatal form of pneumonia, OSHA says.

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Ensuring the water supply is tepid adds another layer of complexity: too hot, and it can exacerbate chemical reactions; too cold, and workers won’t use it—particularly in showers—for as long as they should.

Bradley addresses that concern for outdoor employers, particularly in northern climates, with enclosed showers offering a heated water source.

“There are people who have died because a shower outside was exposed and they didn’t want to stand under an exposed shower outside,” Kern adds. “One individual running to a locker room made it to the locker-room door and died.”

Read more: [Eye Protection Guide: Picking the Right Safety Glasses and Goggles](#)

To ensure that wash stations are operating correctly, the ANSI rule requires weekly tests by facility operators that serve the additional purpose of flushing the water lines. It also recommends a comprehensive annual inspection to evaluate modified workspaces, identify new hazards and determine whether any equipment needs maintenance or replacement.

Since runoff from stations is likely to be contaminated, employers must provide appropriate systems for collecting and disposing of it. For a non-plumbed station, that may involve corralling the water and siphoning it into a bladder.

Even with a plumbed station, however, the contaminated water shouldn’t be mixed with regular water but channeled through dedicated drains or gathered in specialized waste-containment systems, then disposed of in accordance with local laws and regulatory requirements.

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