

## How to Select Portable and Plumbed Eyewashes, Showers for Construction Sites



**Eyewashes and drench showers should be in place as part of a sound safety program at heavy construction sites.**

By Rebecca Geissler  
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**T**he U.S. construction season is in full swing, taking advantage of the warm summer months. Some workers have decades of experience, while others brought on to help with peak demand have just a few days on the job. The reality is that workers of all skill levels are at risk on heavy construction sites. In this industry, it is critical for job sites to provide emergency fixtures as protection against serious injuries and potential fatalities.

According to the U.S. Bureau of Labor Statistics, the construction industry has the highest number of fatal injuries of any major industry. In response to the significant risks to construction workers, OSHA has developed guidelines governing the use of personal protective equipment (PPE). Yet, surveys have

found that many workers are not consistently using some of the necessary safety equipment.

### The Danger Zones

Hazards on construction sites range from impact injuries to chemical exposure. Many eye injuries result from flying wood dust and other debris like paint chips, dirt and concrete particles. Safety glasses with side shields can help to prevent most eye injuries, but some particles may still reach the eyes.

Solvents, paints and adhesives used can be toxic to the eyes and skin. Protective clothing and eyewear can minimize the risk to workers exposed to the fumes, sprays and splashes from these chemicals, which could result in burns or even blindness.

When improper personal protection or no protection is used, injuries are inevitable. Even with the appropriate protection, accidents may still happen on heavy construction sites. A solid safety plan should include a back-up system to protect the eyes and skin of workers.

### Safety Standards

OSHA has indicated in past statements that general industry standards for safety equipment also should be applied to construction sites. Therefore, OSHA standard 29 CFR 1910.151 (c) would apply, requiring suitable drenching facilities wherever construction workers may be exposed to injurious corrosive materials.

Although OSHA has not officially adopted the ANSI Z358.1-2004 standard for eyewash and shower equipment, OSHA generally refers to the standard as a guide for the selection and installation of such equipment. To protect workers, products used on heavy construction sites should comply with the ANSI standard.

The standard indicates that eyewashes and drench showers should be within 10 seconds reach (approximated at 55 feet in the standard appendix). Additionally, the path to the eyewash or drench shower

must be free of hazards or obstructions. This means the person affected should not need to use stairs, go through doors or clear away items in front of the unit. On construction sites where materials and machinery can be in constant motion, careful planning is required to keep a path clear and units close to workers.

Drench showers and eyewashes should be identified with a highly visible sign and be in a well-lighted area. Other ANSI requirements include minimum flushing flow and incoming pressure to the fixture, as well as height and clearance restrictions. The eyewash or drench shower must also provide clean flushing fluid at a tepid temperature that will not shock or burn the user.

### Portable Emergency Solutions

The first step of protection can be as simple as a bottle eyewash station. Bottle eyewash provides a quick flush and can be used as a first response to chemical exposure. This allows the user to immediately rinse the affected area before moving to a full 15-minute flush station.

Another option is a portable eyewash station. These units are available in many different models, but generally provide a

### Updated Eyewash Standard

An updated American National Standard for emergency eyewash and shower equipment is available from the International Safety Equipment Association (ISEA).

ANSI Z358.1-2004 includes minimum performance requirements, testing, installation, maintenance and training specifications to help ensure that this critical equipment is installed, working correctly and used properly when needed. The publication covers plumbed and self-contained showers and eyewashes, eye/face wash equipment, combination units, personal wash units and hand-held drench hoses.

To order, contact ISEA, 1901 N. Moore St., Suite 808, Arlington, VA 22209, or 703-525-1695 or [isea@safetysitequipment.org](mailto:isea@safetysitequipment.org). A single copy is \$53; ISEA offers discounts on bulk orders.

longer eye flush. Portable, gravity-fed eyewashes are designed to provide a full 15 minutes of flushing fluid at a minimum rate of 0.4 gallons per minute. It is important to make sure the product has been third-party tested to comply with the ANSI Z358.1 standard.

Gravity-fed portable eyewashes are available in a range of shapes and sizes. Some manufacturers offer heated units, which are designed to be used in cold climates. Another type of portable unit can be mounted to a waste receptacle. These units allow for convenient flushing-fluid storage and disposal.

The most recent version of the ANSI standard permits another type of solution — drench hoses. They can now be used as an eyewash or eye/face wash when installed according to the requirements indicated. This may provide a more flexible option on construction sites, but it is important to note that drench hoses must be in a fixed location, activate with one step and remain flowing until shut off. If not installed as required by ANSI, drench hoses are considered supplemental products.

Portable pressurized tanks provide a third ANSI-approved eyewash option. These units are filled with a suitable flushing fluid and are pressurized to provide the appropriate volume and duration of flow. Again, be sure to specify units that are ANSI compliant, as many of the smaller units are approved only to be used as supplemental emergency equipment.

### Plumbed Options

On larger or longer-term construction sites, plumbed water may be accessible. For these applications, plumbed eyewash fixtures can be installed. Plumbed fixtures can range from freestanding units to those mounted on the outside of a building with piping protected on the inside. With any outdoor application, it is essential to evaluate the anticipated temperature range and select the appropriate equipment accordingly. ▶ 11

### About the Author

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Plumbed fixtures may be mounted on the outside of a building with piping protected on the inside.



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#### EYEWASH

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If chemical hazards on a site pose a risk to the body, a drench shower may be required. If a portable drench shower is chosen, make sure it provides enough water volume to fulfill the 15-minute flush requirement and has the capability to deliver the required spray pattern. A plumbed drench shower may be the best solution for most applications.

In some situations, a pallet-mounted or booth-style drench shower (possibly combined with either an eyewash or eye/face wash) may be appropriate. Many of these units include a type of water tank system. Typically, water must still be supplied to the unit, and electricity may be required to maintain a tepid water temperature in the system. ●

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