





SAFETY FIRST

EMERGENCY EYEWASHES AND SAFETY SHOWERS

BY RYAN PFUND



Colleges and universities are responsible for providing reliable health and safety protocols for students and staff. University administrators must ensure that properly plumbed emergency eyewash and safety shower equipment is part of the safety plan for campus facilities that deal with chemicals and other hazardous materials.

Plumbed emergency shower equipment is essential in all types of commercial settings that involve any types of chemical, flammable, or particulate hazards. In universities, some of these environments can include:

- Chemistry classrooms/labs
- Chemical and custodial storage areas
- Buildings and grounds chemical storage areas
- Swimming pool chlorine storage areas
- Industrial arts
- Art rooms/darkrooms

- Print shops
- Health centers
- Boiler rooms
- Kitchens

Unfortunately, some older schools still lack drench showers and eyewashes in many of these critical areas; these campuses may also have equipment that is outdated, obsolete, or fails to meet the current American National Standards Institute (ANSI) Standard. Further, few schools follow ANSI/ISEA standards for correct placement and regular testing of emergency equipment to make sure it is in proper working order.

If chemical spills or toxic fumes occur, students and employees in the area could be at risk for serious chemical burns, eye injuries or blindness, and respiratory irritation; the cause could be something as simple as cleaning staff combining bleach and ammonia—thereby releasing highly irritating fumes—or students inadvertently mixing or heating

volatile chemicals incorrectly. These types of incidents dramatically illustrate why facilities with potential hazards must provide the right emergency equipment to protect against serious injuries from chemical exposure. Plumbed drench showers and eyewash stations are usually the best solutions in these areas; when there is no access to plumbing, non-plumbed options are also available.

Hazards and Emergency Shower/Eyewash Options

To begin the selection process of emergency shower and eyewash equipment, administrators should start by identifying potential hazards on campus. Safety data sheets for hazardous substances should be carefully reviewed to ensure the proper protection and safety plans are in place for each area. Equipment should be selected based on the type and level of potential exposure to people, as well as in consideration of how many individuals could be affected. For example:

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Emergency eyewash stations

- Effective for spills, splashes, dust, or debris likely to affect only the eyes
- Provide a controlled flow of water to both eyes simultaneously
- Deliver an uninterrupted, fifteen-minute supply of tepid water. Plumbed units can supply a greater volume of water, between two and five gallons per minute

Emergency eye/face wash stations

- Used when the entire face is at risk from spills, splashes, dust, and debris
- Irrigate the eyes and face simultaneously
- Provide a large distribution pattern of water—minimum three gallons per minute—to effectively rinse the entire face

Drench showers

- Used when larger areas of the body are at risk
- Flush a larger portion of the body but are not appropriate for the eyes. A combination eyewash and drench shower may be used to



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simultaneously flush the eyes and rinse larger areas of the body.

Non-plumbed, self-contained eyewash fixtures

- Used when there is no access to a plumbed water source
- Deliver a minimum of .4 gallons per minute for a minimum of fifteen minutes
- Systems can be portable and gravity fed

Location and Accessibility

The ANSI/ISEA standard requires that such fixtures be installed within ten seconds' reach of each hazard, or no more than about fifty-five feet away. At sites where strong acids or caustics are used, the equipment should be placed immediately adjacent to where the exposure could occur. The equipment should be on the same level as the potential hazard. Drench showers and eyewash stations must supply tepid water with a temperature between 60° and 100° F and be capable of a full fifteen-minute flush.

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Conducting a walk-through of facilities with a health or safety expert can help administrators determine proper placement and types of fixtures for each location. Manufacturers often conduct free site surveys to ensure proper placement and other best practices for ANSI/ISEA compliance.

New Technology Ensures the Best Washdown Coverage

The newest generation of emergency fixtures is designed to deliver a more uniform and complete spray pattern distribution. Older shower designs push the flow of water to the outer rim of the showerhead, creating a hollow space in the center of the pattern that can miss affected areas.

Using the latest technology in fluid dynamics, new drench shower designs work in tandem with a pressure-regulated flow control and the spinning motion of water, creating an optimal spray pattern to rinse off contaminants as quickly and thoroughly as possible. The contoured shape combined with the spinning water funnels the water into a concentrated, yet gentle, deluge to ensure the most effective flush available.

New eye/face wash designs using this new technology can ensure that water is dispersed to all areas of the face, including the forehead, temples, and chin. These new types of eye/face washes provide twenty percent better washdown protection than other designs.

Swing-Activated Eyewash Models

For facilities such as classrooms, laboratory environments, and tight workspaces, a new generation eyewash model combines a sink faucet with an eyewash built in for emergency eyewash use, offering a highly efficient and convenient space-saving solution for educational facilities.

During regular faucet use, the eyewash is stored out of the way. In an emergency, the eyewash is immediately activated when it is swung out 90° over the sink. When the eyewash is activated, the swing-activated design ensures that the faucet moves out of the way, positioning the eyewash directly over the sink and allowing clear access to the fixture. With the eyewash in the optimal position over the sink, water is contained in the sink without dripping or spraying on countertops and floors, thereby limiting mess and risk of slipping and falling.

In Good Working Order

According to the ANSI/ISEA standard, emergency drench showers and eye and eye/face washes must be activated one time per week to ensure they work properly in supplying tepid water when needed. Unless the product is activated on a weekly basis, water stagnating in the supply piping may not be clean. Weekly

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activation ensures that the product is properly functioning and safe for the person to use when needed. This activation makes sure that nothing is blocking the flow of the flushing fluid and eliminates any chance of contamination from stagnant water.

Finally, administrators should regularly review safety plans to ensure that all students, faculty, and staff are protected. Even though these issues may be not top-of-mind during the daily work routines on campus, paying attention to crucial safety equipment details will result in a safer learning environment.



ABOUT THE AUTHOR: Ryan Pfund is Senior Product Manager, Emergency Fixtures, for Bradley Corporation of Menomonee Falls, Wisconsin, a USGBC and ISEA member and manufacturer of locker room products, plumbing fixtures, washroom accessories, partitions, emergency fixtures, and tankless water heaters.

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