

UA Little Rock

Emergency Eyewash and Safety Shower Protocols

In the event of harmful exposure to hazardous substances in one's eye and/or body, OSHA 29 CFR 1910.151(c) requires that emergency eyewash and shower units be installed in work areas where there is a potential for exposure to the skin or eyes with any hazardous chemical (in addition to corrosives). Thus, emergency eyewash and safety shower units are found strategically located throughout UA Little Rock buildings.

The purpose of this protocol and procedures are to ensure that all safety eyewashes, drench hoses, and safety showers supply clean, potable water and are in proper working order. This document describes UA Little Rock procedures for emergency use, selection, installation and placement, guidelines for activation, inspection, testing, and maintenance of emergency eyewash and shower equipment.

Emergency Procedures

All affected personnel are expected to know and understand the hazards associated with chemicals and other materials that may require emergency flushing and drenching. Workers must review all safety datasheets (SDS) frequently to know and understand all hazards prior to an accident happening.

Eyewashes, Drench Hoses, and Eyewash/Facewash Units

1. Assist the victim to get to the unit. Sight may be impaired.
2. Activate the unit using the hands-free valve.
3. Hold the eyelids open with the fingers if necessary.
4. Place the eyes in the stream of water.
5. Flush for 15 minutes.
6. Get medical attention.

Emergency Showers and Drench Hoses

1. Assist the victim to the shower. Do not let them slip and fall.
2. Activate the unit using the hands-free valve.
3. Put modesty aside. Remove contaminated clothing first if possible. (Rinsing contaminated clothing will wash chemicals out of the clothing and onto the skin). If this is not possible, remove contaminated clothing during the flushing process.
4. Flush for 15 minutes.
5. Get medical attention.

Notes

1. Assist the victim with procedures. Shield them using blankets or by closing doors if necessary. Provide alternative clothing (e.g., lab coats, scrubs, blankets, etc.) as necessary).
2. The contaminated water from a deluge shower or eyewash is very dilute. Use standard housekeeping precautions when cleaning the area.
3. Drains are not always installed under emergency showers intentionally. Sanitary sewer drains from any fixture (e.g., floor drains, sinks, etc.) have a P-trap that contains a small amount of water to prevent sewer gas from entering the buildings. Because of the infrequent use of an emergency shower, drains under emergency showers will go dry and allow sewer gas into the building. If one is present, pour some water down the drain at regular intervals.

Application & Installation

Because the eyes provide a rapid route of entry into the body, emergency eyewash and shower units should be installed in work areas where there is a potential for exposure to the skin or eyes with any hazardous chemical (in addition to corrosives). The OSHA definition of a hazardous chemical includes the following:

- Carcinogens
- Corrosives
- Reproductive toxins
- Irritants
- Hepatotoxins
- Sensitizers
- Nephrotoxins
- Agents which act on the hematopoietic system
- Neurotoxins
- Agents which damage the lungs, skin, eyes, mucous membranes
- Toxic & highly toxic agents

Equipment Selection

Equipment selection should be based upon the hazard. Consider the population, the frequency of activities, the nature of the activities, particulates, and the chemicals used. In general:

1. Full sized showers and eyewash stations should be used in active workplaces with daily activities generating particulates or using high hazard chemicals (i.e. large quantities and concentrated hazardous chemicals).
2. Dual purpose drench hose and eyewash installations should be used in moderately hazardous areas with daily or less frequent activities (i.e. smaller quantities and dilute solutions or less hazardous chemicals).
3. Faucet mounted eyewashes and drench hoses should be used in low hazard workplaces with infrequent activities (i.e. small quantities or low hazard chemicals).
4. Single nozzle drench hoses are intended to supplement the existing eyewash and shower facilities and are not considered a substitute in place of suitable eye and body wash equipment.
5. Gravity fed or squirt bottle eyewash stations should only be considered for field work or temporary installations where they will be replaced by plumbed fixtures. Eyewash solutions must be changed according to the manufacturer's recommendations.

Location & Placement

The emergency eyewash and shower unit must be placed in a location no more than a maximum of 10 seconds travel time for an injured person through an unobstructed pathway. All safety equipment should be located in a low hazard area of the workplace, typically near the exit away from higher hazard activities.

Specific placement requirements are listed below:

1. *Eyewash and eye/face wash units*: Nozzles must be positioned between 33-45 inches from the floor. A minimum distance of 6 inches from the nearest obstruction is required.
2. *Drench hose units*: The head of the hose must be placed 33-45 inches from the floor with a clearance of 6 inches from the wall. Dual purpose bench mounted eyewash/drench hose units should be positioned toward the front of the bench so that the user can bend over and place their eyes in the water stream in a hands-free fashion without straining to reach the back of the bench.

3. *Emergency Showers*: The distance of showerhead to the floor must be between 82-96 inches. Activator handle height must be no higher than 69 inches from the floor. Also, showers must have a clearance from obstructions 16 inches from the center of the water column.
4. *Combination Units or Safety Stations*: Refer to the dimensions above for distance and clearance of the eye/face wash and shower units.

Eye wash and shower units must be completely free from obstructions or other potential hazards such as chemical bottles that could be tipped over while locating the eyewash with impaired vision. Do not place or store any items under or near eyewash and shower stations. No electrical devices may be placed or stored near emergency eye wash and shower locations.

Signage

The location of all emergency equipment must be identified with a highly visible sign. Signs must be conspicuously posted using universal symbols or text that describes the installed equipment appropriately.



Activation/Hygiene & Flow Testing

It is important to understand that “Activation/Hygiene Testing” and “Flow Testing” are different procedures that occur at different intervals. The ANSI standard recommends weekly activation testing and annual flow testing for both eyewash and safety showers. Because of the difficulty of activating some installations, periodic activations are recommended to maintain clean water in the units. EH&S encourages and recommends weekly activation of eyewashes and showers; however, it is not mandatory by statute or OSHA regulations. **Minimally, eyewashes and drench hoses must be activation/hygiene tested monthly and safety showers quarterly and the test documented.** Unit supervisors may choose to perform these tests at shorter intervals at their discretion.

Eyewashes and Dual-Purpose Eyewash/Facewash/Drench Hoses

Monthly Activation/Hygiene Test:

1. Visual inspection of the unit:
 - a. Look for corrosion, leaks, or pipe damage and proper placement of protective covers. This should be done prior to activation in order to avoid risk of injury, damage to the unit, or creating a spill.
 - b. Ensure that the unit is clean and free of any nearby obstructions.

- c. Verify that your eyewash has been tested annually on the log or hang tag on the unit.
2. Activate unit: Ensure that the water flow is continuous, estimate that the unit can maintain flow for 15 minutes by judging adequate and continuous water pressure for at least 60 seconds, and is not over pressurized as to injure the user's eyes or face.
 - a. Valve activator must stay on unless manually turned off and must activate water flow in one second or less.
 - b. If the eye wash station has protective caps, make sure they pop off automatically when the eye wash is turned on. Return the caps to the proper position after flushing. If caps are missing, contact EH&S.
 - c. For eyewashes, controlled flow must be provided to both eyes simultaneously. Uneven flow to one eye or the other indicates a malfunction or simple blockage of the filters underneath the spray cap (remove and rinse filters or report malfunction for maintenance).
 - d. Observe the flow. Check for balance of the water stream. They should be equal; minor differences are not a problem. Each stream should be about 6 inches long and both streams should cross each other in the center. (Report low or high flow to EH&S or if you need assistance to determine flow).
3. Sanitize water supply through flushing: Activate or flush the unit until the water runs clear to discharge rust, bacteria, or other contaminants (minimum of 60 seconds).
4. Documentation: Keep an eye wash test record log in your laboratory. Record the activation/hygiene test and post it near the unit.

Annual Flow Test:

Annual flow tests will be conducted by EH&S personnel and requires specialized equipment to conduct the test.

1. Flow rate of the device will be conducted annually: Following established procedures let the water run for one minute to collect at least 1.5 liters (0.4 gallon) of water.
2. Documentation: Ensure an appropriate tag is on unit and document test with dates and initials on the unit tag after test.

Emergency Showers

Quarterly Activation:

Quarterly flush tests are to be conducted by the laboratory or workplace personnel. If requested, equipment will be provided by EH&S to collect the flushed water.

1. Visual inspection of the unit:
 - a. Look for corrosion, leaks, or pipe damage. This should be done prior to activation in order to avoid risk of injury, damage to the unit, or creating a spill.
 - b. Ensure that the unit is clean and free of any nearby obstructions. Verify actuator is attached and in position.
 - c. Verify that your shower has been tested annually on the log or hang tag on the unit.
2. Activate unit: Ensure that the water flow is continuous, estimate that the unit can maintain flow for 15 minutes.
 - a. Valve activator must stay on unless manually turned off and must activate water flow in one second or less.
 - b. Observe the flow. The unit must be capable of delivering not less than 20 gallons per minute (report low or high flow for maintenance).
3. Sanitize water supply through flushing: Activate or flush the unit until the water runs clear to discharge rust, bacteria, or other contaminants. Record the activation flushings in your record book or posted on the wall.

Annual Flow Test:

Annual flow tests will be conducted by EH&S personnel and requires specialized equipment to conduct the test.

1. Flow rate of the device will be conducted annually: Following established procedures let the water run for one minute to collect at least 75.5 liters (20 gallons) of water.
2. Documentation: Ensure an appropriate tag is on all units and document test with dates and initials on unit tag after test.

Test Failures, Malfunctions, & Deficiencies

Corrective actions must be performed when deficiencies are noted by any personnel at any time. Malfunctions or deficiencies should be noted during periodic activations, inspections, or normal daily activities and should be reported to EH&S, your supervisor and facility managers. If use of the equipment is not possible, tag the unit "DO NOT USE." The supervisor must notify EH&S for repair or replacement. Annual test failures must be corrected immediately.

Training

Prior to beginning laboratory work, workers with the potential for chemical exposure (e.g., faculty, students, staff, etc.) should also obtain formal [Safety Shower and Eyewash Training](#) on the proper procedure for use during an emergency.