

STANDARD OPERATING PROCEDURES

EMERGENCY EYEWASH AND SAFETY SHOWERS

PURPOSE

The purpose of this Standard Operating Procedure (SOP) to ensure emergency eyewash stations and safety showers provide clean, potable water, and are in proper working condition. It is developed in compliance with the American National Standards Institute (ANSI) standard Z358.1 and outlines the requirements for installation, activation, and inspection of the emergency eyewash stations and safety showers. Occupational Safety and Health Administration (OSHA) requires that emergency eyewash stations and safety showers be installed in areas where the eyes or body of any person could be exposed to hazardous materials including corrosives.

Emergency eyewash stations and safety showers are not substitution for protective clothing primary protective device for eye and face protection.

SCOPE

This SOP applies to all emergency eyewash and safety shower units installed on Spelman campus.

DEFINITIONS

Eyewash: A device specifically designed and intend to deliver flushing fluid of potable water in sufficient volume to cause the fluid to cascade over the entire body.

Flow Pressure: The pressure in the water supply pipe near the water outlet while the faucet or outlet is fully open

Hazardous Material: Any substance or compound that has the capability of producing adverse effects on the health and safety of humans.

Potable Water: Water that is suitable for drinking.

Safety Shower: A device specifically designed and intended to deliver flushing fluid in sufficient volume to cause that fluid to cascade over the entire body.

INSTALLATION REQUIREMENTS

The ANSI standard states that all emergency eyewash and shower units must be located in areas that are accessible within 10 seconds (roughly 55 feet and the path of travel shall be free from obstructions. Items such as trash cans, boxes, raw materials, or any other stored items must not block access to the flushing stations. Also, a door is considered an obstruction. If the hazard is non-corrosive, one door can be present as long as it opens in the same direction of travel as the person requiring the use of the eyewash and safety shower unit. The main purpose of eyewash and safety shower is to provide immediate flushing fluid or potable water.

Units which combine an eyewash and shower unit must accommodate simultaneous use. Therefore, both the eyewash and shower must be fully operable at the same time to properly flush the skin and eyes. Below are the requirements for the installation of eyewash and safety shower.

A. Eyewash

- a. The minimum flow eyewash unit is 0.4 gallon/minute at flow pressure 30 PSI.
- b. Unit must be capable of delivering a minimum of 15 minutes of flushing fluid.
- c. Eyewash units must be capable of being activated in 1 second or less.
- d. Installed in such a manner that, once activated, they can be used without requiring the use of operator's hands.
- e. Flushing fluids must be delivered to both eyes simultaneously.
- f. Temperature of the flushing fluid must be between 60⁰F and 100⁰F.
- g. Dust protection caps must be installed to protect the eyewash units from contaminates.
- h. Sprayheads must be positioned between 33" and 45" from the floor.
- i. Sprayheads must be positioned at least 6" from the wall or nearest obstruction.
- j. After the valve actuator is pushed to the full open position, the eyewash unit must remain active without requiring further use of the operator's hands.

B. Safety Shower

- a. The minimum flow eyewash unit is 20 gallon/minute at floe pressure 30 PSI.
- b. Unit must be capable of delivering a minimum of 15 minutes of flushing fluid.
- c. Safety showers must be capable of being activated in 1 second or less.
- d. After the pull-rod is pulled to activate the shower unit, the shower unit must remain active without requiring further use of the operator's hands.
- e. Temperature of the flushing fluid must be between 60⁰F and 100⁰F.
- f. The shower pull-rod must be installed not more than 69" from the floor.
- g. The shower sprayhead must be positioned between 82" and 96" from the floor.
- h. The diameter of the water spray-pattern must be 20" in diameter at 60" above the floor.
- i. Center of spray pattern must be at least 16" away from any obstruction.

RESPONSIBILITIES

A. Environmental Health & Safety Compliance (EHSC) Unit

- Ensure that Principal Investigators (PI's), area supervisors, staff and students working with hazardous materials are notified of this SOP.
- Maintain an updated inventory of the emergency eyewash and shower units.
- Assist with reviewing building plans and selection of emergency eyewash and shower unit during new construction or major renovations.
- Conduct weekly activation of the emergency eyewash stations and shower units and maintain a weekly activation log.

- Conduct annual inspection of all emergency eyewash and safety shower units on campus to ensure the emergency eyewash and shower unit is functioning properly.
- Ensure that inspection and activation records are recorded on inspection tags.
- Coordinate with Facility Management Services (FMS) for immediate repair of any malfunctioning equipment unit.
- Assist with the selection of emergency eyewash and shower units.
- Maintain a record for the locations of emergency eyewash and shower head units throughout campus.
- Tag emergency eyewash and shower units that fail to pass weekly activation or annual inspection with 'DO NOT USE' sign. Notify Principal Investigator and area supervisors of the deficiency in the unit.

B. Principal Investigator(PI)/Area Supervisor

- Notify EHSC Unit when new hazardous materials are introduced in the work area and may require installation of the equipment
- Ensure passageway to the equipment is clear and area around the equipment is clear of any obstructions.
- Ensure that all employees and students who may need to access emergency eyewash and safety shower are trained on their location and use.
- Notify EHSC Unit to request immediate repair of any malfunctioning unit.
- Notify EHSC Unit before removing any emergency eyewash and shower equipment.

C. Facilities Management Services (FMS)

- Conduct installation, repair and maintenance of emergency eyewash and shower equipment as required.
- Assist EHSC Unit in conducting annual flow test of the emergency shower and eyewash equipment.
- Assist EHSC Unit in conducting annual inspection of the emergency eyewashes and safety showers.
- Notify EHSC Unit after the installation of any emergency eyewash and shower equipment.
- Ensure work orders for installation, repair and maintenance of emergency eyewash and shower equipment are prioritized.

ACTIVATION AND TESTING

EHSC Unit will conduct weekly activation and annual testing of the emergency eyewash and shower equipment.

A. Emergency Eyewash Unit

- a. Weekly

i. Visual Inspection :

- Ensure that access routes to the eyewash units are clear and area around the equipment is clear of any obstructions.
- Ensure that there are no corrosion, broken parts, or leaks.
- Ensure that the protective dust covers are properly positioned on top of the eyewash nozzles, and are clean and intact.
- Ensure the eyewash sink drain is clean and free of trash.
- Valve actuator is easy to locate and readily accessible.

ii. Activation:

- Push the valve actuator to full open position (activation of the unit). Ensure the protective dust covers placed on the eyewash nozzles are automatically removed upon activation of the eyewash unit.
- Verify that the eyewash unit opens within one second of pushing the valve actuator and it remains open without operator's further assistance (hands-free) until intentionally closed.
- Use an eyewash gauge to ensure the eyewash unit provides flushing fluid to both eyes simultaneously. The flushing fluid should cover the areas between the interior and exterior lines when the gauge is lowered not more than 1.5 inches below the peak of the eyewash stream.
- Ensure the water runs clear to discharge dust, bacteria, or other contaminants.
- Pull the valve actuator to the original position to deactivate the eyewash unit.
- Record the activation on the 'Emergency Eyewash and Shower Activation and Annual Inspection Log' log posted on the wall near the eyewash unit.

b. Annually

- i. Check the flow rate of the unit to ensure the unit is capable of delivering a minimum of 1.5 liter/minute (0.4 gallon/minute) of flushing fluid for at least 15 minutes.
- ii. Check the temperature of the water from the eyewash unit to ensure it is between 60⁰F and 100⁰F. Collect a small amount of the water in a styrofoam cup and use a non-mercury thermometer.
- iii. Sprayheads are positioned between 33" and 45" from the floor.
- iv. Sprayheads are positioned at least 6" from the wall or nearest obstruction.
- v. Record the inspection on the 'Emergency Eyewash and Shower Activation and Annual Inspection Log' log posted on the wall near the eyewash unit.

B. Emergency Shower Unit

a. Weekly

i. Visual Inspection

- Ensure that access routes to the eyewash unit are clear and area around the equipment is clear of any obstructions.
- Ensure that there are no corrosion, broken parts, or leaks.
- ii. Activation
 - Place the wide end of the shower testing chute around the showerhead and the other end of the chute into a 5 gallon bucket.
 - Pull the activation rod to activate the shower. Ensure the shower remains active without the use of operator's hand until intentionally closed. Verify the shower unit activates within one second of pulling the activation rod.
 - Activate the shower for about 6 seconds. Push the activation rod towards the ceiling to deactivate the shower.
 - Check that the water level in the bucket is up to the 2 gallon mark.
 - Check the temperature of the water from the eyewash unit to ensure it is between 60⁰F and 100⁰F. Collect a small amount of the water in a styrofoam cup and use a non-mercury thermometer.
 - Ensure the water collected in the bucket is clear without any contaminants.
 - Record the activation on the 'Emergency Eyewash and Shower Weekly Activation and Annual Inspection Log' posted on the wall near the shower unit.
- b. Annually
 - i. Verify the following:
 - The shower pull-rod is installed not more than 69" from the floor.
 - The shower sprayhead is positioned between 82" and 96" from the floor.
 - The diameter of the water spray-pattern is 20" in diameter at 60" above the floor.
 - Center of spray pattern is at least 16" away from any obstruction.

If any of the emergency eyewash and shower unit does not pass the activation and inspection criteria listed above, EHSC Unit will notify FMS and the area supervisor regarding the failure of the unit. If use of a unit is not possible EHSC Unit will tag the unit 'OUT OF SERVICE'.

EQUIPMENT AND SUPPLIES

The following is a list of equipment and supplies that should be available for the inspection of emergency eyewash and shower units:

- Lab coats and protective eyewear
- 5 gallon bucket with shower testing chute
- Eyewash gauge
- Transportation cart
- Paper Towel
- Wet Mop