

## **ENVIRONMENTAL HEALTH & RADIATION SAFETY POLICY**

### **Emergency Eyewashes & Showers**

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#### **Purpose**

To establish selection, installation, maintenance, and training requirements for Emergency Eyewashes and Showers at Temple University.

#### **Scope**

This policy applies to university employees and campuses when there is a reasonable probability of exposure to a Hazardous Material to a User's eyes, face, or body.

#### **Policy**

A plumbed eyewash, eyewash/drench hose unit, or eye/face wash unit will be provided for work areas where, during normal operations or foreseeable emergencies, the eyes and/or face of an individual may be exposed to a Hazardous Material. Emergency Eyewashes must not be used in lieu of safe work practices or appropriate personal protective equipment.

A plumbed emergency shower will be provided for work areas, where, during normal operations or foreseeable emergencies, the body may be exposed to a Hazardous Material. Emergency Showers must not be used in lieu of safe work practices or appropriate personal protective equipment.

See Appendix A for a list of acceptable Emergency Eyewashes and Showers.

Work areas that require an Emergency Eyewash and Shower include:

- New construction biological (BSL 2 and above), chemical, and radiological research labs

Other areas where EHRS determines, through an assessment, that an Emergency Eyewash or Shower is required. These may include:

- Locations where corrosive materials (pH equal to or less than 2 or greater than 12.5) are used
- Areas that work with formaldehyde
- Work shops
- Mechanical rooms
- Battery charging areas
- Painting/spraying operations
- Pesticide storage
- High dust areas
- When required by a standard or regulation

## **Definitions**

- ANSI: American National Standards Institute. ANSI Z358.1 establishes minimum performance and use requirements for Emergency Eyewashes and Showers.
- Emergency Eyewash: Emergency eyewash equipment, including combination units, eye/face wash units, and eyewash/drench hose units, intended for the emergency treatment of the eyes, face, or body of a person who has been exposed to hazardous materials.
- Emergency Shower: Emergency shower equipment intended for the emergency treatment of the body of a person who has been exposed to hazardous materials.
- Hazardous Material: A substance that is corrosive, severely irritating to the skin, toxic by skin absorption, infectious, or radioactive.
- OSHA: Occupational Safety and Health Administration
- Personal Wash Unit: A supplementary device that supports plumbed Emergency Eyewashes and Showers by delivering immediate flushing fluid to the eyes or body.

## **Responsibilities**

### **Environmental Health & Radiation Safety (EHRS)**

- Policy development.
- Provides training, upon request from a Supervisor or User, on the location and proper use of Emergency Eyewashes and Showers.
- When requested, conducts an assessment to determine the need for Emergency Eyewashes and Showers.

### **Facilities Management- Operations & Maintenance (O&M)**

- Ensures that Emergency Eyewashes and Showers will be purchased, installed, and maintained according to this policy and the latest edition of the ANSI 358.1 standard or other applicable regulations.
- Ensures that annual test records and installation records are readily available for review and inspection.
- Maintains a listing of Emergency Eyewash and Shower locations.

### **Project Delivery Group (PDG)**

- Ensures that Emergency Eyewashes and Showers will be purchased and installed according to this policy and the latest edition of the ANSI 358.1 standard or other applicable regulations.
- Ensures that installation records are readily available for review and inspection.

### **Supervisor (Principal Investigator (PI), Department Heads, Managers, Designees)**

- Assesses their site and operations to determine if Emergency Eyewashes and Showers may be needed. Contact EHRS for additional guidance at 215-707-2520.
- Ensures that Users under their supervision are trained on the location and proper use of Emergency Eyewashes and Showers.
- Ensures that the requirements of this policy are followed.
- Ensures that Emergency Eyewashes and Showers, including those in common use areas or hallways, are maintained according to this policy.
- Ensures that the necessary test documents and training records are available for review upon request.
- Informs Operations & Maintenance prior to purchasing new Emergency Eyewashes and Showers to ensure that it is suitable for their workplace.
- Contacts Operations & Maintenance for maintenance and repair issues related to Emergency Eyewashes and Showers.

### **User**

- Attends required training.
- Complies with the requirements of this policy.

## **Requirements**

The following are requirements for Emergency Eyewashes and Showers at Temple University:

## Selection

Emergency Eyewashes and Showers must be designed to the latest edition of ANSI Z358.1. The selection of an eyewash/drench hose unit, installed to the eyewash requirements listed below, is preferable. The unit may be left in the mounting bracket for use as a fixed eyewash, leaving the User's hands free. Alternatively, the unit may be removed for use as a drench hose to rinse any part of User's eyes, face, or body. Eyewashes that swing across the sink should only be used if the sink is large enough to accommodate the eyewash when activated. Single nozzle drench hoses or faucet-mounted eyewashes are not acceptable eyewashes. Faucet-mounted eyewashes require two motions to operate (turn on water, pull knob to activate eyewash flow) therefore do not meet the requirements of ANSI Z358.1 as an Emergency Eyewash.

See Appendix A for examples of acceptable Emergency Eyewashes and Showers.

When plumbed Emergency Eyewashes and Showers are not available according to the installation requirements listed below, a Personal Wash Unit may be kept in the immediate vicinity of employees. The main purpose of these units is to supply immediate flushing until the employee can access a plumbed Emergency Eyewash or Shower. Personal Wash Units are not meant to replace plumbed Emergency Eyewashes or Showers. This exception does not apply to chemical, biological, and radioactive research and teaching labs where plumbed Emergency Eyewashes or Showers are required. Contact EHRS for guidance on the selection and placement of Personal Wash Units.

Contact EHRS for guidance on the selection of Emergency Eyewashes and Showers compliant with The Americans with Disabilities Act.

## Installation: General

- Emergency Eyewashes and Showers must be installed to the latest edition of ANSI Z358.1.
- Emergency Eyewashes and Showers must be located as close to the hazard as possible, but no more than 10 seconds must be required to reach the equipment from the site of the hazard.
  - For highly corrosive materials, the Emergency Eyewash or Shower must be located immediately adjacent to the hazard but far enough away from the hazard so that additional exposures do not occur while using the equipment.
- Emergency Eyewashes and Showers must be located on the same level as the hazard and the path of travel must be free of obstructions that may inhibit the immediate use of the equipment. A door is an obstruction. If the hazard is not a corrosive, one intervening door can be present between hazard and Emergency Eyewash or Shower so long as:
  - The door opens in the same direction of travel as the person attempting to reach the equipment.

- The door is equipped with a closing mechanism that cannot be locked to impede access to the equipment.
- If both Emergency Eyewash and Shower are needed, they must be located so that both can be used at the same time by one person.
- Emergency Eyewashes and Showers must be constructed of materials that will resist rusting and corrosion.
- Emergency Eyewashes and Showers must be connected to a continual source of potable water.
- Emergency Eyewashes and Showers installed in areas that are subject to freezing conditions must be designed and manufactured to be freeze-resistant.
- The water temperature in Emergency Eyewashes and Showers must be tepid. ANSI has defined tepid as water with a temperature between 60° F and 100° F.
- Emergency Eyewashes and Showers must be designed to be activated in less than 1 second.
  - Emergency Eyewashes and Showers must be designed and installed in such a manner that, once activated, they can be used without requiring the use of the operator's hands.
  - Emergency Eyewashes and Showers must be designed to remain activated until intentionally shut off.
- Provision must be made to prevent the unauthorized closure of shut off valves.
- Emergency Eyewashes and Showers must be in an area identified with a highly visible sign positioned so the sign is visible within the area served by the equipment.
- The area around the Emergency Eyewashes and Showers must be well lit.
- No items or equipment will be placed under or near any Emergency Eyewashes or Showers.
- No electrical apparatus, telephones, thermostats, or power outlets will be located within 18" of either side of the Emergency Eyewashes and Showers.

### **Installation: Emergency Eyewashes**

- The water flow is sufficiently high to allow the User to hold eyes open while rinsing.
- Spray heads are protected from airborne contaminants. Covers are removed by water flow.
- Controlled, low velocity flow rinses both eyes and is not injurious to User.
- The unit delivers at least 0.4 gallons of water per minute (GPM) for 15 minutes.
- Hands-free stay-open valve activates in one second or less.
  - A drench hose may be considered an eyewash or eye/face wash if the unit meets the performance requirements of the latest edition of ANSI Z358.1. (i.e., the User must be able to use the drench hose hands-free while it is still mounted in the bracket).
- The valve actuator is easy to locate and readily accessible to User.
- The water flow pattern is positioned between 33" and 53" from the floor and at least 6" from the wall or nearest obstruction.

- The unit washes both eyes simultaneously.

### **Installation: Emergency Showers**

- Water supply is sufficient to provide at least 20 GPM for 15 minutes.
- The height of the water column is between 82" and 96" above the floor.
- The center of the water pattern is at least 16" from any obstruction.
- The valve actuator is no more than 69" above the floor.
- At 60" above the floor, the water pattern is at least 20" in diameter.
- If provided, shower enclosure has a minimum diameter of 34".

### **Maintenance**

- Weekly maintenance of Emergency Eyewashes and Showers
  - Activate equipment at least weekly for a period long enough to verify operation.
  - Ensure that access to the equipment is unobstructed.
  - Visually inspect the equipment to ensure that there are no broken parts or leakage.
  - Verify that protective eyewash covers are properly positioned, clean and intact.
  - Check that spray heads are clean, and drains are free of debris.
  - Check that the flow is effective and continuous.
  - Maintain a log for this weekly maintenance. A log is available from the [EHRS website](#).
  - Ensure that issues identified during the weekly activation are promptly reported to Operations & Maintenance.
- Annual maintenance of Emergency Eyewashes and Showers
  - Equipment will be maintained at least annually to ensure conformance with the latest guidelines in ANSI Z358.1. Annual maintenance is required and will be performed by Operations & Maintenance.

### **Training**

- Users must be trained in the location and proper use of Emergency Eyewashes and Showers before working with hazardous materials.
- Training must include the information about whether the chemical reaction of any chemical in that work area is accelerated by the temperature of the fluid from Emergency Eyewashes and Showers.
- Training must be documented and be readily available for review upon request.
- Training records must be kept for 2 years from the training or whenever all Users on the training record no longer work in the work area, whichever is the longer period.

## References

- ANSI Z358.1 Emergency Eyewash and Shower Equipment
- OSHA 29CFR 1910.151

## Appendix A: Acceptable Emergency Eyewashes and Showers



*Figure 1 Guardian G5022 deck mounted eyewash/drench hose unit*



*Figure 2 Guardian G5014 wall mounted eyewash/drench hose unit*



Figure 3 Bradley S19-460EFW deck mounted eyewash/drench hose unit



Figure 4 Bradley S1944022ABC wall mounted eyewash/drench hose unit





*Figure 5 Guardian G1825P free-standing eyewash*



*Figure 6 Bradley S19214EW free-standing eyewash*



Figure 7 Guardian G1902P eyewash and shower combination



Figure 8 Speakman SE-697 eyewash and shower combination



Figure 9 Personal eyewash unit



Environmental Health  
and Radiation Safety