

# Standards for Safety Showers and Eyewashes

The first seconds following an injury are often most critical. To keep the injury to a minimum personal eyewash and safety showers should be kept in the immediate vicinity of employees working in a potentially hazardous area. The main purpose of these units is to supply immediate flushing. With this accomplished, the injured individual should flush the injured area with copious amount of water.

Auburn University recommends the installation of eyewash stations, safety showers or combination units at places where personnel handle substances that could be injurious their eyes or other body parts due to contact. Suitable standards describing hazard assessment, equipment selection and design specifications have been provided by American National Standards Institute (ANSI). This document provides a brief summary of the standards pertaining to the selection and installation of eyewash stations and safety showers.

Reference: ANSI Z358.1 -2004 standard.

## Definitions

### Showers (Plumbed and Self-Contained)

**Plumbed Shower:** An emergency shower permanently connected to a source of flushing fluid.

**Self-Contained Shower:** A shower that contains its own flushing fluid, and must be refilled or replaced after use.

### Eye/Face Wash (Plumbed and Self- Contained)

**Plumbed Eyewash:** An eyewash unit permanently connected to a source of flushing fluid.

**Self-Contained Eyewash:** An eyewash unit that contains its own flushing fluid and must be refilled or replaced after use.

### Supplemental Equipment

**Drench Hose:** A flexible hose connected to a flushing fluid and used to irrigate and flush face and body areas. A drench hose may be considered an eye/face wash if the device meets the requirements.

**Personal Wash Units:** A supplementary device that supports plumbed and/ or self-contained units by delivering immediate flushing fluid to the eyes or body.

## Placement and Performance Standards

### Showers

#### Positioning and Performance of Shower Head

- Positioned not less than 82 in. nor more than 96 in. from the showerhead to the standing surface.
- Shall deliver flushing fluid at a minimum of 20 gallons per minute for 15 minutes at a velocity low enough (30 psi) to be non-injurious to the user.
- Spray pattern shall have a minimum diameter of 20 in. at 60 in. equally dispersed above the standing surface.
- Center of spray pattern should be located at least 16 in. from any obstruction.

#### Control Valve

- Activates “off” to “on” in 1 second or less.
- Easily located, accessible actuator no more than 69 in. above the standing surface.
- Stay-open valve (hands-free). Valve remains on until the user intentionally shuts it off.

#### Installation

- Shower should be within 10 seconds from the hazard, on the same level as the hazard and with unobstructed travel path.
- Shower location shall be in a well-lit area and identified with a highly visible sign.
- Deliver moderately warm, lukewarm (tepid) flushing fluid. 60° – 100° F

#### Maintenance and Training

- Plumbed shower equipment should be activated on a regular basis for a period long enough to verify correct operation and ensure that flushing fluid is available.
- All who may be exposed to hazardous materials shall be instructed and trained in the location and proper use of emergency shower units.
- All shower units shall be inspected annually to assure conformance with ANSI Z358.1.

## Eye/Face Wash

### Performance of Nozzles

- Eyewash should ensure that a controlled flow is provided to both eyes simultaneously at a velocity low enough non-injurious to the user. The unit must be positioned to pose no hazard to the user. Nozzles must be protected and removal should not require a separate motion.
- Positioned not less than 33 in. and no greater than 45 in. from the surface the user stands and 6 in. from the wall or nearest obstruction.
- Capable of delivering .4 gallons per minute for 15 minutes.

### Control Valve

- Resistive to corrosion.
- Activates “off” to “on” in 1 second or less.
- Stay-open valve (hands-free). Valve remains on until the user intentionally shuts it off.

### Installation

- Eye/face wash should be within 10 seconds from the hazard, on the same level as the hazard and with an unobstructed travel path.
- Eye/face wash location shall be in a well-lit area and identified with a highly visible sign.
- Deliver moderately warm, lukewarm (tepid) flushing fluid. 60° – 100° F

### Maintenance and Training

- Plumbed eye/face wash units should be activated weekly for a period long enough to verify correct operation and ensure that flushing fluid is available.
- Self-Contained units shall be visually checked and maintained according to the manufacturer's instructions.
- All who may be exposed to hazardous materials shall be instructed and trained in the location and proper use of emergency shower units.
- All units shall be inspected annually to assure conformance with ANSI Z358.1

## Supplemental Equipment – Drench Hoses

### Performance

- Drench hoses should be designed to provide a controlled flow of flushing fluid to a portion of the body at a velocity low enough to be non-injurious to the user.
- Capable of delivering 3 gallons per minute for 15 minutes.

### Control Valve

- Activates “off” to “on” in 1 second or less.
- Resistant to corrosion.

### Installation

- Assemble per the manufacturer's instructions.
- Drench hose location shall be in a well-lit area and identified with a highly visible sign.
- Deliver moderately warm, lukewarm (tepid) flushing fluid. 60° – 100° F

### Maintenance and Training

- Drench hose units should be activated weekly for a period long enough to verify correct operation and ensure that flushing fluid is available.
- All who may be exposed to hazardous materials shall be instructed and trained in the location and proper use of emergency drench hose units. Note: Hand-held drench hoses support shower and eye/face wash units but should not replace them.
- All shower units shall be inspected annually to assure conformance with ANSI Z358.1.

## Supplemental Equipment - Personal Wash Units

### Performance

- Personal Wash Unit should be designed to deliver immediate flushing fluid to a portion of the body at a velocity low enough to be non-injurious to the user. Personal wash Units do not meet the criteria of plumbed or self-contained eyewash equipment.
- Personal Wash Units shall deliver moderately warm, lukewarm (tepid) flushing fluid. 60° – 100° F
- Instructions and expiration date shall be permanently affixed to the unit.

### Maintenance, Training and Storage

- All personal wash units shall be inspected and maintained in accordance with the manufacturer’s instructions.
- All who may be exposed to hazardous materials shall be instructed and trained in the location and proper use of emergency personal wash units.
- All shower units shall be inspected annually to assure conformance with ANSI Z358.1.