Emergency Shower and Eyewash Performance Requirements

Purpose

This standard is intended to provide uniform minimum requirements for equipment performance, installation, test procedures, and maintenance of emergency eyewash and shower equipment. It establishes minimum performance requirements for eyewash and shower equipment for the emergency treatment of the eyes and body of a person who has been exposed to injurious materials. It covers the following types of equipment: emergency showers, eyewash equipment, eye/face wash equipment, hand held drench hoses, and combination shower and eyewash or eye/face wash.

All emergency related equipment supplied by a manufacturer (i.e. shower head units, eyewash equipment, etc.) within the scope of these standards must be ANSI Z358.1.

Emergency (Safety) Showers

- Performance of Shower Heads

Emergency shower heads shall be designed and located so that the shower head is not less than 208.3 cm (82 inches) nor more than 243.8 cm (96 inches) in height from the surface on which the user stands. The spray pattern shall have a minimum diameter of 50.8 cm (20 inches) at 153.2 cm (60 inches) above the surface on which the user stands, and the center of the spray pattern shall be located at least 40.6 cm (16 inches) from any obstruction. Emergency shower heads shall be capable of delivering a minimum of 113.6 liters per minute (30 gpm) of water at a velocity low enough not to be injurious to the user. The water shall be substantially dispersed throughout the pattern.

- Performance of Control Valve

The valve shall be designed so that the water flow remains on without requiring the use of the operator's hands and shall remained activated until intentionally shut off. Valve activation shall be simple and go from "off" to "on" in less than 1 second.

- Installation

Emergency showers shall be in accessible locations that require no more than 10 seconds to reach and should be within a travel distance no greater than 30.5 meters (100 feet) from the hazard. Each emergency shower location shall be identified with a highly visible sign. The area around the emergency shower shall be well lit. The shower shall be assembled according to manufacturer's instructions.

- Testing
The shower shall be tested according to the following procedures with campus safety personnel present:

- A. With unit correctly connected to the water source and the valve closed, visually check the piping and connections for leaks.
- B. Open the valve to the full on position. The valve shall remain open without requiring further use of the operator’s hands.
- C. Ensure that the above previously mentioned specifications for spray pattern is met.

- Location of Safety Showers
  - The emergency safety shower and/or emergency eyewash station must be installed within 10 seconds walking time from the location of a hazard. The path of travel from the hazard to the equipment should be free of obstructions and as straight as possible. Remember, doors are a concern and may hinder a user accessing safety shower emergency equipment.

Plumbed Eyewash Equipment

- Performance

Velocity of water shall be capable of flushing both eyes simultaneously without causing injury to the user. Nozzles shall be protected from air borne contaminants. Whatever means is used shall not require a separate motion from the user while activating the unit. The equipment shall be capable of delivering not less than 1.5 liters per minute (0.4 gpm) for 15 minutes.

- Performance of Control Valve

The valve shall be designed so that the water flow remains on without requiring the use of the operator’s hands and shall remain activated until intentionally shut off. Valve activation shall be simple and go from "off" to "on" in less than 1 second.

- Installation

The unit shall be positioned with the water nozzles 83.8 cm (33 inches) to 114.3 cm (45 inches) from the floor and 15.3 cm (6 inches) minimum from the wall or nearest obstruction. Units shall be installed in an accessible location that requires no more than 10 seconds to reach and within 100 feet of the hazard. The eyewash area shall be identified by a highly visible sign and the area around the unit shall be well lit.

Eye/Face Wash Equipment

- Performance
The eye/face wash shall meet the specifications and requirements listed in the eye wash section. In addition to these requirements, the eye/face wash shall be capable of delivering water to the eyes and face not less than 11.4 liters per minute (3.0 gpm) for a period of 15 minutes. The supply line shall provide an un-interruptible supply of water at 30psi flow pressure.

- **Performance of Control Valve**

The valve shall be designed so that the water flow remains on without requiring the use of the operator’s hands and shall remained activated until intentionally shut off. Valve activation shall be simple and go from "off" to "on" in less than 1 second

- **Installation**

The unit shall be positioned with the water nozzles 83.8 cm (33 inches) to 114.3 cm (45 inches) from the floor and 15.3 cm (6 inches) minimum from the wall or nearest obstruction. Units shall be installed in an accessible location that requires no more than 10 seconds to reach and within 100 feet of the hazard. The eyewash area shall be identified by a highly visible sign and the area around the unit shall be well lit.

**Hand Held Drench Hoses**

- **Performance**

Drench hoses shall deliver a minimum of 11.4 liters per minute (3.0 gpm) of water to the eyes or portion of the body at a velocity low enough not to be injurious to the user. Drench hoses are not allowed as a replacement of safety showers but are meant to support them.

- **Performance of Control Valve**

The valve shall be designed so that the water flow remains on without requiring the use of the operator's hands and shall remained activated until intentionally shut off. Valve activation shall be simple and go from "off" to "on" in less than 1 second.

- **Installation**

The drench area shall be identified by a highly visible sign and the area around the unit shall be well lit.

**Combination Units (shower/eyewash)**

- **Performance**

Individual components of a combination unit must be able to operate individually. Performance of individual components must meet the standards in their corresponding sections.

- **Installation**
Units shall be installed in an accessible location that requires no more than 10 seconds to reach and within 100 feet of the hazard. The eyewash area shall be identified by a highly visible sign and the area around the unit shall be well lit.