
Emergency Eyewash & Shower

When should you provide an emergency eyewash and/or emergency shower?

- A means to quickly flush the eyes and body in the work area is required, if the eyes or body may be exposed to **injurious or corrosive** materials.
- When employees' eyes and/or skin are exposed to contact from hazardous chemical liquids, sprays, splash gas/vapors
- When employees' eyes and/or skin are exposed to airborne particulates (e.g., dust, aerosol, fiber), an eyewash should be provided. A shower should also be provided if the airborne material is toxic or corrosive to or through skin.

What constitutes a suitable emergency shower and eyewash?

Suitable facilities are considered to be plumbed or self-contained emergency shower and/or eyewash equipment meeting the design specifications of the American National Standard for Emergency Eyewash and Shower Equipment (*ANSI Z 358.1-1998*).

- **Self-contained eyewashes** should be capable of delivering to the eyes not less than 0.4 gallons per minute for 15 minutes and must store a minimum of six gallons.
- **Self-contained showers** should be capable of delivering a minimum of 20 gallons per minute for 15 minutes and must store a minimum of 300 gallons.
- A **cold-water pipe** (carrying potable water at pressure not to exceed 25 PSIG) equipped with a quick-drenching valve and hand-held drench hose or standard hose that is at least 48 inches long and not smaller than $\frac{3}{4}$ -inch in diameter is considered to be "suitable facilities."

The above facilities are also subject to the following "performance guidelines:"

Eyewash and Shower Performance Guidelines

Reference - ANSI Standard Z358.1-1998
Emergency Eyewash & Shower Equipment

Flushing Fluid - any of potable (drinking) water, preserved water, preserved buffered saline solution or other medically acceptable solutions.

Flushing Time - ANSI Z358.1-1998 says that the affected body part must be flushed immediately and thoroughly for at least 15 minutes using a large supply of clean fluid under low pressure. Longer flushing times, such as 60 minutes for penetrating corrosive materials, are recommended by other sources.

Emergency Eyewash:

- Be able to deliver fluid to both eyes simultaneously at a volume of not less than 0.4 gallons/minute for 15 minutes
- Velocity of fluid should not be high enough to cause eye injury.
- Mounted 33 to 45 inches from the floor
- Mounted a minimum of 6 inches away from the wall or obstructions
- Activation time of 1 second or less and the unit should remain in operation without the need for continued activation
- Actuating valve or lever should be in an easily located area and be highly visible
- Must have nozzle caps to prevent foreign material from accumulating in the nozzle area.
- Nozzle caps should automatically separate from the nozzles when the eyewash is activated.

Emergency Shower:

- Be able to deliver a pattern of water with a diameter of at least 20 inches at 60 inches.
- Shower head be between 82 to 96 inches from the floor.
- Minimum volume of spray is 20 gallons/minute for a minimum time of 15 minutes.
- Shower activation time must be 1 second or less and not require continuous engagement of controls for continued operation.
- Actuating valve or lever should not be more than 69 inches from the floor.

Water temperature - The 1998 ANSI standard states that water be "tepid" but does not give a specific temperature range. In general, water temperatures in the range about 80-95F. Install temperature control valves. Consider that the initial temperature of the flushing water will be the ambient temperature of the piping system. Recirculation systems will keep water temperature at required range.

Signs & Lighting - highly visible signs must be posted in the area of emergency eyewash and shower stations. The location should be well lit.

Location of Equipment - ANSI requires that a person must be able to reach the equipment within 10 seconds after chemical exposure. Where a highly corrosive chemical is used, an emergency shower and eyewash station should be as close as 10-20 ft from the hazard. General guidelines for locating include:

- Located as close to the hazard as possible
- No separation by a partition from the hazardous work area
- Unobstructed path from hazard to the eyewash or shower
- Located where easily visible
- Located on the same floor as the hazard
- Near emergency exit to allow emergency response personnel to easily reach an exposed employee
- Located in a non-hazardous area to prevent further contamination
- Drainage system to remove excess water
- Not near electrical equipment that could become wet
- Freeze protection for outdoor units

TESTING AND MAINTENANCE - The ANSI standard recommends a complete inspection on an annual (yearly) basis. *OHSA recommends inspection at least monthly.*

- Inspect & maintain in accordance with manufacturers recommendations
- Keep a record of all inspections and maintenance
- Put a tag on the station, initial as inspected each month, by a competent person