

SCOPE

- I 1.1 This practice covers the design and installation of emergency shower and eyewash facilities for the emergency treatment of the eyes or body of a person who has been exposed to dangerous material.
Installations in laboratory buildings are not covered in this practice.
- I 1.2 **An asterisk (*)** indicates that additional information is required. If a job is contracted, this additional information is furnished in the Job Specification.

SUMMARY OF ADDITIONAL REQUIREMENTS

- I ↕ 2.1 **Table 1** lists the practice and code which shall be used with this practice.

TABLE 1

PRACTICE	
IP 3-9-1	Winterizing and Protection Against Ambient Temperatures
CODE	
ANSI	
Z358.1 - 1990	Emergency Eyewash and Shower Equipment

- I 2.2 **The facilities described herein** apply to installation in the USA, and in countries with no comparable standards. Where compliance with any code or standard by a local jurisdiction is mandatory, the requirements prescribed therein shall also be met.

DEFINITIONS

- I * 3.1 **Dangerous materials**, as used herein, **include only** the following:
 - a. **Acutely toxic** materials such as phenol.
 - b. **Highly corrosive** materials such as acid and caustic.

SYSTEM DESIGN

WATER SUPPLY

- S 4.1 The **supply water** to the facilities shall be **constant**. All **block valves** in the system shall be **car sealed open**.

TEMPERATURE CONTROL

- S ↕ * 4.2 The **design** shall be **suitable** for the **climate zone** specified (see IP 3-9-1). Where the **effect of solar radiation** is a consideration, exposed piping shall be **insulated**.
- S 4.3 The **water temperature at the shower and eyewash** shall be maintained between 60°F and 95°F (15°C and 35°C) based on 15 minutes continuous operation of the shower.
- S 4.4 **If a hot water heater tank is used**, it shall have an electric immersion type heating element and thermostatic control. The minimum capacity of the tank shall be 150 gal (568 L).

MATERIALS AND EQUIPMENT

- S ↕ * 5.1 **All materials of construction** shall be **corrosion resistant** to prevent rust or scaling. **Piping** shall be **brass, copper, stainless, or galvanized steel**. The use of aluminum or plastic shall be approved by the Owner's Engineer.
- S * 5.2 **Enclosures for electrical equipment** shall be suitable for the specified electrical area classification and environmental exposure.

IP 17-3-1	Emergency Shower and Eyewash Facilities	
Page 2 of 3		
Rev. 0 March 1998		

SHOWER AND EYEWASH EQUIPMENT

- S **5.3** Equipment shall be the **combination eyewash and shower type** conforming to **ANSI Z358.1** Section 9 and the following:
- * a. Either a walk-on treadle valve or pull rod shall operate the emergency shower. Either a foot treadle or push lever shall operate the eyewash, as specified by the Owner's Engineer.
 - b. **The operating valves shall remain open** until intentionally shut off. The **operating valves** shall be **self-draining** for outdoor locations in **Climatic Zones B, C and D**.
 - * c. When specified, actuation of the shower or eyewash shall **trigger an alarm light** in a manned control house.
 - * d. **Hand drench hoses** shall be provided only if specified.
 - ◆ * e. Identification and signage shall be per site standard.

ENCLOSURES

- S **5.4** Where **enclosed facilities** for shower and devices are required, the enclosures shall be **designed as follows**:
- a. The **minimum unobstructed area** inside the enclosure shall be 48 in. (1200 mm) in diameter.
 - b. The **enclosure** shall be constructed of **materials** which will not support combustion, such as masonry or insulated metal panels.
 - c. **Electric heat** shall be provided to maintain a minimum temperature above freezing in the enclosure.
 - d. A 30 in. x 80 in. (750 x 2000 mm) **double swing door with** a 12 in. x 12 in. (300 x 300 mm) **safety glass panel** shall be provided. The door shall have a friction catch.

INSTALLATION PROCEDURE

- S **6.1** **Installation procedure** shall be per **ANSI Z358.1** Section 9, and the additional requirements specified herein.

LOCATION

- S ◆ *** 6.2** **Emergency shower and eyewash** shall be **provided in areas where dangerous materials are handled and personnel exposure may result in skin burns or eye injury**.
- ◆ **Note:** Sources of exposure normally involve pumps, sample points, areas where frequent maintenance activity is expected, tank truck/tank car loading/unloading connections, open hatch loading positions, outside battery rooms, and other locations handling dangerous materials, including elevated locations.
- S ◆ *** 6.3** The **shower and eyewash** shall be in an **accessible location** which requires not more than 10 seconds to reach and a **travel distance of not more than 100 ft (30 m) from the source(s) of exposure** and shall be in an area which is free of the contaminant. This should be outside the toe wall (if one exists) which surrounds the source(s) of exposure. There should be an unobstructed path from the source(s) of exposure to the shower and eyewash. Stairs or ladders shall not be used to reach the facilities. The **final locations of the shower and eyewash** shall be approved by the Owner's Engineer.

GRADE LEVEL INSTALLATIONS

- S ◆ **6.4** The area beneath **unenclosed shower and eyewash facilities** installed **at grade level** shall be **paved** with concrete and sloped toward a catch basin so that water will not collect and become a freezing or housekeeping problem. **Enclosed shower and eyewash facilities** shall be installed on a concrete paving with a **drain and trap connected to a sewer**.
- S **6.5** For an **outdoor shower in Climatic Zone B or C**, when possible, the **location** should be **next to a building wall** with the valves operable from the outside but installed inside to prevent freezing. If this is impractical, the operating valves and exposed water lines to the shower and eyewash shall be made **self-draining**.