

Element D Services

Plumbing

D201001 Emergency Shower and Eye Wash Equipment

PART 1 - GENERAL

1.01 OVERVIEW

- A. This section addresses emergency shower and eye wash equipment and associated accessories. Refer to Owner's Master Construction Specification Sections for additional requirements.

PART 2 - DESIGN CRITERIA

2.01 GENERAL

- A. Where the eyes or body of any person may be exposed to injurious corrosive or infectious materials, suitable fixed facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.
- B. Emergency shower and eyewash equipment design, installation and location shall meet current ANSI Z358.1, NFPA 99 -11.6 and OSHA 29 CFR 1910.151 standards and deliver clean water to users.
- C. Emergency equipment location shall be based on the estimated time of travel for a person with compromised vision. Safety drenching equipment shall be located in accessible locations on the same level as the hazard and the path of travel shall be free of obstructions that may inhibit the immediate use of the equipment. A door is considered to be an obstruction. If the hazard is not a corrosive, one intervening door can be present between hazard and emergency equipment so long as:
1. The door opens in the same direction of travel as the person attempting to reach the emergency equipment.
 2. The door is equipped with a closing mechanism that cannot be locked to impede access to the emergency equipment.
- D. Emergency equipment shall be located within 10 seconds travel distance and not more than 75 feet of where toxic chemicals or infectious materials are used. For strong acids or caustics, the unit shall be located immediately adjacent to the hazard but far enough away from the hazard so that additional exposure to the hazard or exposure does not occur. The A/E shall utilize Material Safety Data Sheets in determining hazard of chemicals or materials.
- E. Coordinate location of all safety drenching equipment with structural members, walls, doors, windows, ceilings or other building components that may interfere with the installation. This task shall be accomplished during the schematic design phase of the Project.
- F. Coordinate location of safety drenching equipment on upper levels with spaces below to avoid areas where water leakage would cause major property loss or contamination, including but not limited to computer data centers, MRI rooms, electrical rooms, telecommunications

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rooms, food preparation, food storage, food serving, critical patient care areas, etc. This task shall be accomplished during the schematic design phase of the Project. The A/E shall insure that all holes in floor slabs are sealed to prevent water from flowing to lower floors due to discharge of emergency equipment.

- G. Safety drenching equipment shall not be located within eighteen inches of electrical apparatus, telephones, thermostats, or power outlets.
- H. Emergency shower heads shall be positioned 82 inches to 96 inches from the floor and shall have a spray pattern of a minimum diameter of 20 inches at 60 inches above the floor. The center of the spray pattern shall be located at least 16 inches from wall or nearest obstruction.
- I. Emergency eyewash nozzles shall be positioned 33 inches to 45 inches from the floor and at least 6 inches from the wall or nearest obstruction.
- J. The emergency equipment location must provide a level surface area for user.
- K. A hand held drench hose or personal eyewash station may be installed in laboratory or shop areas as a supplement, not a substitute, for eyewash devices.
- L. The water temperature in emergency eye wash and shower equipment shall be "tepid." "Tepid water" is defined as water with a temperature between 60 degrees F and 100 degrees F. In circumstances where chemical reaction is accelerated by flushing fluid temperature, the A/E shall consult with the Owner's EH&S Department to determine the optimum temperature for each application.
- M. Safety drenching equipment shall be identified with a highly visible sign and area lighting shall be adequate to facilitate use.
- N. Combination showers with eye and eye/face wash shall be connected to a potable water system capable of supplying adequate flushing fluid to meet the requirements of each component when all components are operated simultaneously. Combination units shall be positioned so they can be used simultaneously by the user under the shower.
- O. Provide an accessible ball type shutoff valve in individual water supply line serving safety drenching equipment. Valves shall be labeled for identification and locked in the open position.
- P. Provide Code compliant drainage to evacuate water during emergency equipment usage and testing.

PART 3 - SPECIAL CONTRACT DOCUMENT REQUIREMENTS

3.01 GENERAL

- A. All emergency shower and eyewash equipment and trim shall be scheduled on Contract Drawings indicating manufacturer's model numbers and sufficient additional information to allow cross referencing to other acceptable manufacturer's products.

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- B. Modify Owner's Master Construction Specifications as required to ensure conformity between drawing schedules and specifications.
- C. Include a fixture rough in schedule on Contract Drawings identifying minimum service pipe sizes required by code and as recommended by the manufacturer for all fixtures and trim to be installed within the Project.
- D. Include schedules and/or detail elevations on Contract Drawings identifying required mounting heights for all fixtures and trim to be installed within the Project.
- E. Clearly designate on Contract Drawings that a four square feet area under emergency showers be identified with, "Keep area clear" for the use of the emergency shower. Identification shall utilize a distinctive pattern and color to facilitate promoting a clear path of access.

PART 4 - PRODUCTS

4.01 GENERAL

- A. Refer to Master Construction Specifications.
- B. Final selection of emergency equipment and trim shall be determined by close coordination with Owner's EH&S representative and Project Manager to determine functionality and aesthetic requirements for selection of appropriate equipment types. Requirements may vary from facility to facility and even from department to department.
- C. Emergency shower and eyewash equipment, trim and accessories of any one type shall be by the same manufacturer.
- D. All emergency equipment shall meet American with Disabilities Act (ADA) accessibility requirements for activation of controls and height of eye/face outlets with the following exceptions:
 - 1. Equipment within boiler rooms or central plants.
 - 2. Eye/face outlets located in countertops that are not required to be accessible.
- E. Emergency equipment activation devices shall be designed so that the flushing water remains on without requiring the use of the operator's hands. The valve shall be designed to remain activated until intentionally shut off.
- F. Shower head flow rate shall be 20 gallons per minute at a minimum 30 pounds per square inch water pressure.
- G. Eye Wash unit shall provide flushing fluid at 0.4 gallons per minute at a minimum 30 pounds per square inch water pressure.

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- H. Face Wash unit shall provide flushing fluid at 3 gallons per minute at a minimum 30 pounds per square inch water pressure.

PART 5 - DOCUMENT REVISION HISTORY

Issue	Date	Revision Description	Reviser
	20190301	Original Issuance	

END OF ELEMENT D201001