ANSI Standard Z358.1-2004
Emergency Eyewash & Shower Equipment

Scope and Application:
This standard establishes minimum use and performance requirements for eyewash and shower equipment for the emergency treatment of the eyes or body of a person who has been exposed to hazardous materials. It covers the following types of equipment:
- emergency shower,
- eyewash equipment,
- eye/face wash equipment, and
- combination shower and eyewash units.
This standard also includes performance and use requirements for personal washes and drench hoses, which are considered supplemental to emergency eyewash and shower equipment.

Purpose:
This standard is intended to provide a basis for common understanding among owners, users, service personnel, the general public and the regulatory community as to the minimum requirements for the performance, use, installation, test procedures and maintenance of emergency eyewash and shower equipment.

Definitions:
- **Drench Hose**: A supplemental device consisting of a flexible hose connected to a flushing fluid supply, used to provide fluid to irrigate and flush face and body areas.
- **Flushing Fluid**: Potable water, preserved water, preserved buffered saline solution or other medically acceptable solution manufactured and labeled in accordance with applicable government regulations.
- **Freeze Protection**: A means to protect water in an apparatus from freezing and rendering it inoperable. This can be achieved through several means including mechanical valves and electrical heat tracing.
- **Potable Water**: Water that is suitable for drinking.
- **Tepid**: Moderately warm; lukewarm.

General Considerations:
- Plumbed and self-contained eye/face & shower equipment shall be constructed of materials that will not corrode in the presence of flushing fluid.
- Stored flushing fluid shall be protected against airborne contaminants.
- All equipment shall be installed, maintained and inspected annually as per the manufacturer’s instructions.
- This equipment shall be in accessible locations that require no more than 10 seconds to reach and shall be located on the same level as the hazard.
- All eye/face and shower equipment shall deliver tepid flushing fluid (60 – 100˚ F) and be activated weekly for a period long enough to verify operation and ensure that flushing fluid is available.

Plumbed and Self-Contained Emergency Showers:
A means shall be provided to ensure that a controlled flow of flushing fluid is provided at a velocity low enough so as not to cause injury to the user (75.7 liters per minute (20 gpm) for a minimum of 15 minutes). The spray pattern shall have a diameter of 50.8 cm (20 in.) at 152.4 cm (60 in) above the surface on which the user stands, and the center of the spray pattern shall be located at least 40.6 cm (16 in) from any obstruction. Installation, use and maintenance shall be conducted as per the following:
- a) Performance of Plumbed and Self Contained Showers.
- b) Performance of Control Valve
- c) Shower Enclosures
- d) Performance Testing Procedures
- e) Installation
- f) Maintenance & Training

(Over)
Plumbed & Self-Contained Eyewash Equipment:
Plumbed & self-contained eyewash equipment shall be capable of delivering flushing fluid to both eyes of no less than 1.5 L per min. (0.4 gpm) for 15 min. For strong acid or caustic, the eye/face wash should be immediately adjacent to the hazard. Installation, use and maintenance shall be conducted as per the following:
   a) Performance of Plumbed & Self-Contained Eyewash Units
   b) Performance of Control Valve
   c) Performance Testing Procedures
   d) Installation
   e) Maintenance & Training

Eye/Face Wash Equipment:
Eye/Face wash units shall be capable of delivering flushing fluid to both eyes of no less than 11.4 liters per minute (3.0 gpm) for 15 minutes. For strong acid or caustic, the eye/face wash should be immediately adjacent to the hazard. Installation, use and maintenance shall be conducted as per the following:
   a) Performance of Eye/Face Wash Units
   b) Performance of Control Valve
   c) Performance Testing Procedures
   d) Installation
   e) Maintenance & Training

Combination Units:
All combination units shall meet the performance requirements in the above stated sections.
   a) Performance of Combination Units (shower/eyewash units, eye/face wash units)
   b) Performance of Control Valve
   c) Performance Testing Procedures
   d) Installation
   e) Maintenance & Training
   f) Supplemental Equipment

Supplemental Equipment:
Supplemental equipment, such as portable eyewash units and drench hoses, shall provide immediate flushing to support plumbed and self-contained equipment but shall not replace them. All supplemental equipment shall be installed, maintained and inspected annually as per the manufacturer’s instructions.
   a) Personal Wash Units
   b) Performance of personal Wash Units
   c) Maintenance, Training & Storage
   d) Drench hoses
   e) Performance of Drench Hoses
   f) Performance of Control Valves
   g) Installation
   h) Maintenance & Training

This bulletin contains a summary of excerpts taken from the Standard, for general information purposes only. This bulletin is not reflective of the complete requirements that the Standard prescribes.

Note: Manitoba Regulation M.R. 217/2006 Section 1.4 inconsistency:
If there is an inconsistency between this regulation and a requirement contained in a publication, code or standard referenced in this regulation, the provisions in this regulation prevail.