

OSH INFORMATION MEMORANDUM 06 x 57 (Rev)

TO: All SCOSH Personnel

FROM: Dorothy Ison, Administrator

SUBJECT: Guide for Citing Eyewashes and Showers

DATE: August 1, 2006

PURPOSE

The purpose of this memorandum is to provide guidance in citing for emergency eyewashes and showers.

BACKGROUND

Many questions have arisen in regards to eyewashes and showers such as: When is an eyewash or eyewash and shower required? What is an injurious material? What is the maximum travel distance allowed? Where should the eyewash station be located? Should the violation be cited serious or other than serious?

There are many injurious materials used in the workplace that may cause irreversible or temporary damage to the skin and/or eyes.

Appendix A of the Hazard Communication standard addresses some of the chemicals, i.e. organic solvents, acids, ketones, chlorinated compounds, that can cause either irreversible or temporary damage.

When injurious materials get into the eye or on the skin, emergency first aid, (immediate flushing with water), is the most widely recognized course of action to be taken to prevent further injury.

Although there are some specific standards, such as 1910.1048(i), which address eyewashes and/or showers, the general standard upon which SCOSH may rely is Subpart K – Medical and First Aid, 1910.151(c).

Since the OSHA standards provide little guidance, this memorandum was developed to provide a uniform enforcement policy.

GUIDELINES

1. As outlined in the South Carolina Occupational Safety and Health standards there are several requirements concerning eyewash fountains and safety showers. The standards are as follows:
 - a. Subarticle 6, Section 1910.151(c): Where the eyes or body of any person may be exposed to injurious corrosive materials suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use.
 - b. Subarticle 6, Section 1910.124(g)(2): Near each tank containing a liquid which may burn, irritate, or otherwise be harmful to the skin if splashed upon the worker's body, there shall be a supply of clean cold water. The pipe (carrying a pressure not exceeding 25 pounds) shall be provided with a quick opening valve and at least 48 inches of hose not smaller than three-fourths inch, so that no time may be lost in washing off liquids from the skin or clothing. Alternatively, deluge showers and eye flushes shall be provided in cases where harmful chemicals may be splashed on parts of the body.
 - c. Subarticle 6, Section 1910.261(g)(18)(i): Quick operating showers, bubblers, etc. shall be available for emergency use in case of caustic soda burns.
 - d. Subarticle 6, Section 1910.262(pp): Wherever acids or caustics are used, provision shall be made for a copious and flowing supply of fresh clean water.
 - e. Subarticle 6, Section 1910.268(b)(2): ...Facilities for quick drenching or flushing of the eyes and body shall be provided unless the storage batteries are of the enclosed type and equipped with explosion proof vents, in which case sealed water rinse or neutralizing packs may be substituted for the quick drenching or flushing facilities.
 - f. Subarticle 6, Section 1910.111(b)(10)(iii): Stationary storage installations shall have an easily accessible shower or a 50-gallon drum of water
 - g. Subarticle 6, Section 1910.111(b)(10)(iv): Each vehicle transporting ammonia in bulk except farm applicator vehicles shall carry a container of at least 5 gallons of water...
 - h. Subarticle 7, Section 1926.441(a)(6): Facilities for quick drenching of the eyes and body shall be provided within 25 feet of battery handling areas.
 - i. Subarticle 6, Section 1910.1048(i)(2): If an employee's skin is splashed with solutions containing one (1) percent or greater formaldehyde, the employer shall provide a quick drench shower.
 - j. Subarticle 6, Section 1910.1048(i)(3): If an employee's eyes may be splashed with solutions containing 0.1 percent or greater formaldehyde, the employer shall provide an acceptable eyewash facility.
2. Definitions

- a. Corrosive – A corrosive is defined in Appendix A of the Hazard Communication standard. (1910.1200 and 1926.59)
- b. Irritant – Irritant is defined in Appendix A of the Hazard Communication standard.
- c. Minimal Acceptable Apparatus.
Unless allowed by a specific OSHA standard, the minimal acceptable apparatus is as follows:
 - (i) Eyewash – a fixed commercially available apparatus designed specifically for an eyewash. See Attachment #2, Illustration #9.
 - (ii) Shower – a plumbed commercially available apparatus designed specifically as a safety shower.
 - (iii) Combination eyewash and shower.
See Attachment #3, Illustration 11. The recommended dimensions for installation are found in Attachment #4.
 - (iv) Drench Hose – a commercially available apparatus under limited conditions is acceptable in combination with an eyewash. See Attachment #5.
 - (v) Self-contained eyewash – A commercially available unit that is not permanently installed and must be refilled or replaced after use. These units must provide a continuous flow for fifteen minutes.
- d. Location.
All required eyewash and safety shower apparatus must be located in the work area for immediate use and on the same level if feasible; the distance from the point of hazardous exposure shall be in accessible locations that require no more than 10 seconds to reach.
The path shall not be impeded by door, equipment, stock, or have a change in elevation or any tripping hazards.
- e. Water Flow.
All facilities must provide a copious flow of water for a minimum of 15 minutes.
- f. Temperature.
The temperature of the water for eyewash and showers must be greater than 60 degrees Fahrenheit and less than 100 degrees Fahrenheit.
- g. Verification of Operation.
The employer shall ensure that the apparatus is protected from freezing, deterioration, and physical damage.

3. Assessment of Need

- a. The number of hazardous substances and the number of work environments in which they are used are too numerous to address in this memorandum. Generally, an eyewash or an eyewash and shower combination as well as personal protective equipment will be cited when:
 - (i) A material safety data sheet and/or container label indicated the need.

- (ii) The health effects indicate that the substance will cause moderate to severe injury to the eyes or skin. If the material safety data sheet is not available, the compliance officer must consult other sources such as NIOSH criteria documents, the condensed chemical dictionary, and *“Toxicology of the Eye”*.
- b. In assessing the hazard, the compliance officer must determine the class and type of injurious material being used, the quantity being used, and the minimum type apparatus required.

- (i) Determine the type and class of injurious material as follows:

<u>CLASS</u>	<u>TYPE OF INJURY</u>
1	Cause minor to mild irritation to eyes and/or skin
2	Temporary impairment/Reversible injury
3	Serious to severe destruction to skin/or eyes

- (ii) One method to determine the type and class of injurious materials is by the pH value.

The pH is a measure of acidity and alkalinity. The pH scale goes from 0 to 14. At pH 7, the mid point, there is a balance between acidity and alkalinity. Such a solution is neutral.

If the solution has excess acid, the balance is shifted so that the scale reads a number lower than 7 – the greater the acid strength, the lower the pH value.

Similarly, a solution that is alkaline has a pH that is higher than 7, and the greater the alkali strength, the higher the pH value up to 14.

Each point on the pH scale actually represents a 10-fold difference in acid activity. Thus, pH 4 is ten times as acidic as a pH 5 solution. A pH 3 solution, in turn has ten times the acid activity of the pH 4 solution and 100 times the acidity of the pH 5 solution.

The pH scale of 0 to 14 is derived from the chemical properties of water and this pH scale cannot be used with other solvents such as alcohol, oils and other non-aqueous systems.

For non-aqueous materials the type and class must be determined by some other method such as researching MSDSs,

contacting the manufacturer, researching “*Toxicology of the Eye*” and similar text and then documented on worksheets.

- (iii) Determine the minimum type eyewash/shower apparatus required as follows:
- (1) CLASS 1: mild-minor irritant. When a chemical is determined to be a mild eye irritant or mild skin irritant, the compliance officer shall recommend a self-contained eyewash unit and/or drench hose.
 - (2) CLASS 2: temporary impairment/ reversible injury. If the injurious material is used in laboratory quantities, an eyewash/drench hose combination is required.

If the amount of the injurious material exceeds laboratory quantities, the compliance officer must exercise professional judgment to determine which combination, eyewash/drench hose or eyewash/shower, is needed.

- (3) CLASS 3: serious/severe injury; destructive to skin and/or eyes.

For materials in this class, a standard eyewash/shower combination is required regardless of the amount used.

Any deviation of this policy shall be discussed with supervisor.

CITATION POLICY

3. Violations for lack of eyewash/shower and personal protective equipment, i.e. goggles, gloves, apron, may be grouped in accordance with grouping policy.
4. Guidelines for classifying violations as serious or other are as follows:
 - a. CLASS 3 – These will always be serious even if PPE is provided and used.
 - b. CLASS 2 – If no PPE is used cite as serious; cite other than serious if proper PPE is used.
 - c. CLASS 1 – No citation will be issued, but a written letter of recommendation will be documented.

DOCUMENTATION

Documentation of violations must include:

Name of materials used
Amount used
How used
Location
Number of employees exposed/frequency
Splash distance
Nearest water source
Photos
Information on label
Copy of MSDS if available (ask manufacturer to fax)

If litmus paper is used to determine pH include the following:

The type paper used, numerical reading and color, an employer statement and verification of pH.

Note: Litmus paper must be read instantaneously.

EXCEPTIONS

The apparatus under minimum requirements in Attachment #1, will be the minimal acceptable apparatus unless there is a different requirement in a specific standard or OSH Information Memo.

Exceptions are as follows:

1. 1910.124(g)(2)
2. 1910.268(b)(2)
3. 1910.111(b)(10)(iii)
4. 1910.111(b)(10)(iv)
5. OSH Information Memo 80 x 39
6. OSH Information Memo 80 x 41
7. A faucet-mounted eyewash may be used when only an eyewash is required

SUMMARY

A summary of the type of injurious material, pH, class, minimum apparatus required and violation classification is shown in Attachment #1.

EFFECTIVE DATE

The revised memorandum becomes effective immediately and will remain in effect until cancelled or superseded.

ATTACHMENT 1

<u>CLASS</u>	<u>TYPE HAZARD</u>	<u>pH</u>		<u>MINIMUM REQUIREMENT</u>	<u>VIOLATION CLASSIFICATION</u>
		<u>Acid</u>	<u>Alkaline</u>		
1	Mild Irritant - Eye	6 to 6.5	8 to 9	Self - Contained Unit Min. of 15 Min. Flow	De Minimis
	Mild Irritant - Skin			Drench Hose	De Minimis
<hr style="border-top: 1px dashed black;"/>					
2	Moderate - Temporary Impairment/Reversible Injury to Eyes and/or Skin	3 to 5	10 to 12	Plumbed Unit Drench Hose for Laboratory Quantities, Shower for Larger Quantities	Other If No PPE, Cite as Serious
<hr style="border-top: 1px dashed black;"/>					
3	Serious to Severe - Destructive to Skin and/or Eyes	0 to 2	12 to 14	Plumbed Unit	Serious
				Plumbed Shower	Serious

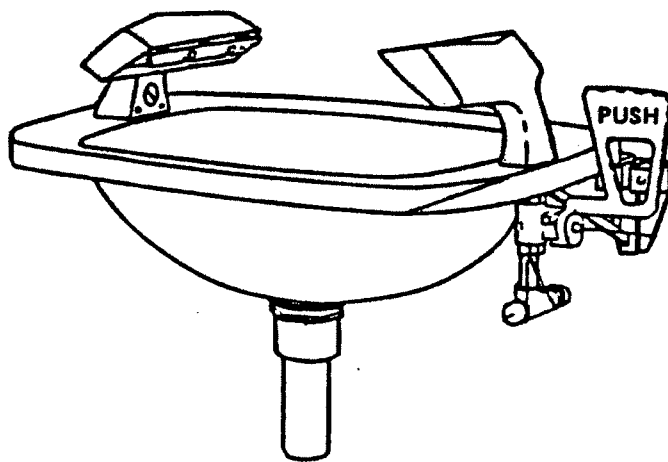


Illustration 9
Eye/Face Wash

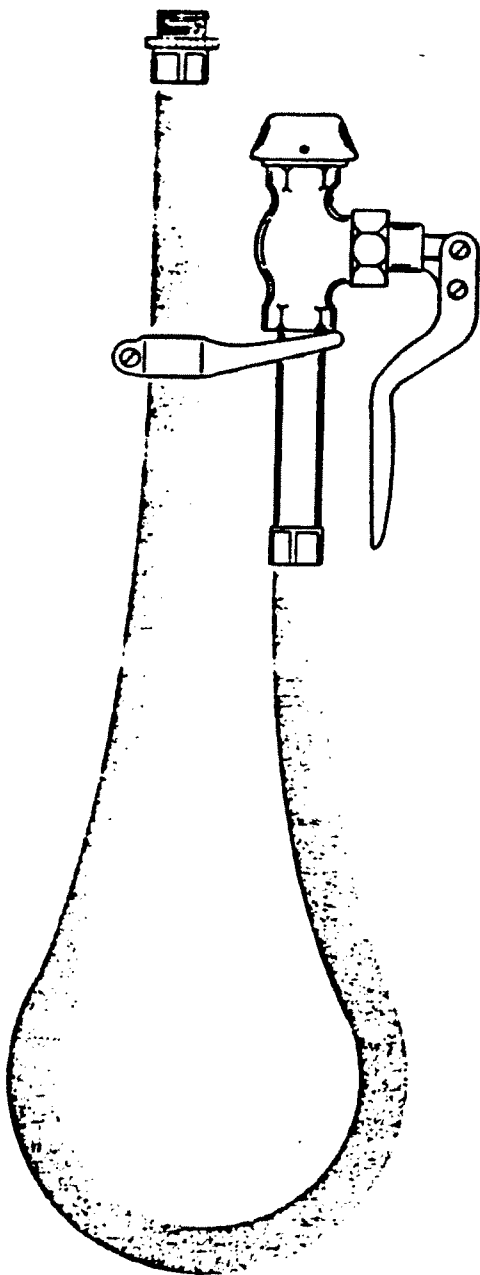


Illustration 10
Drench Hose

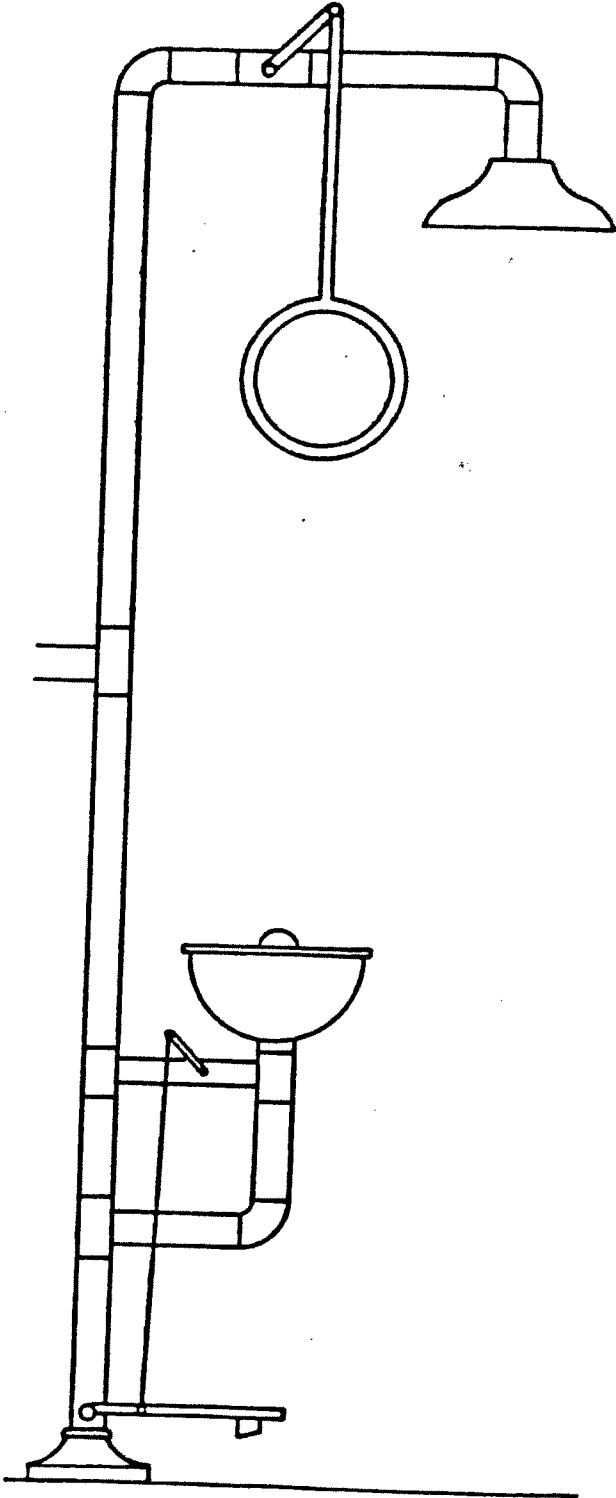
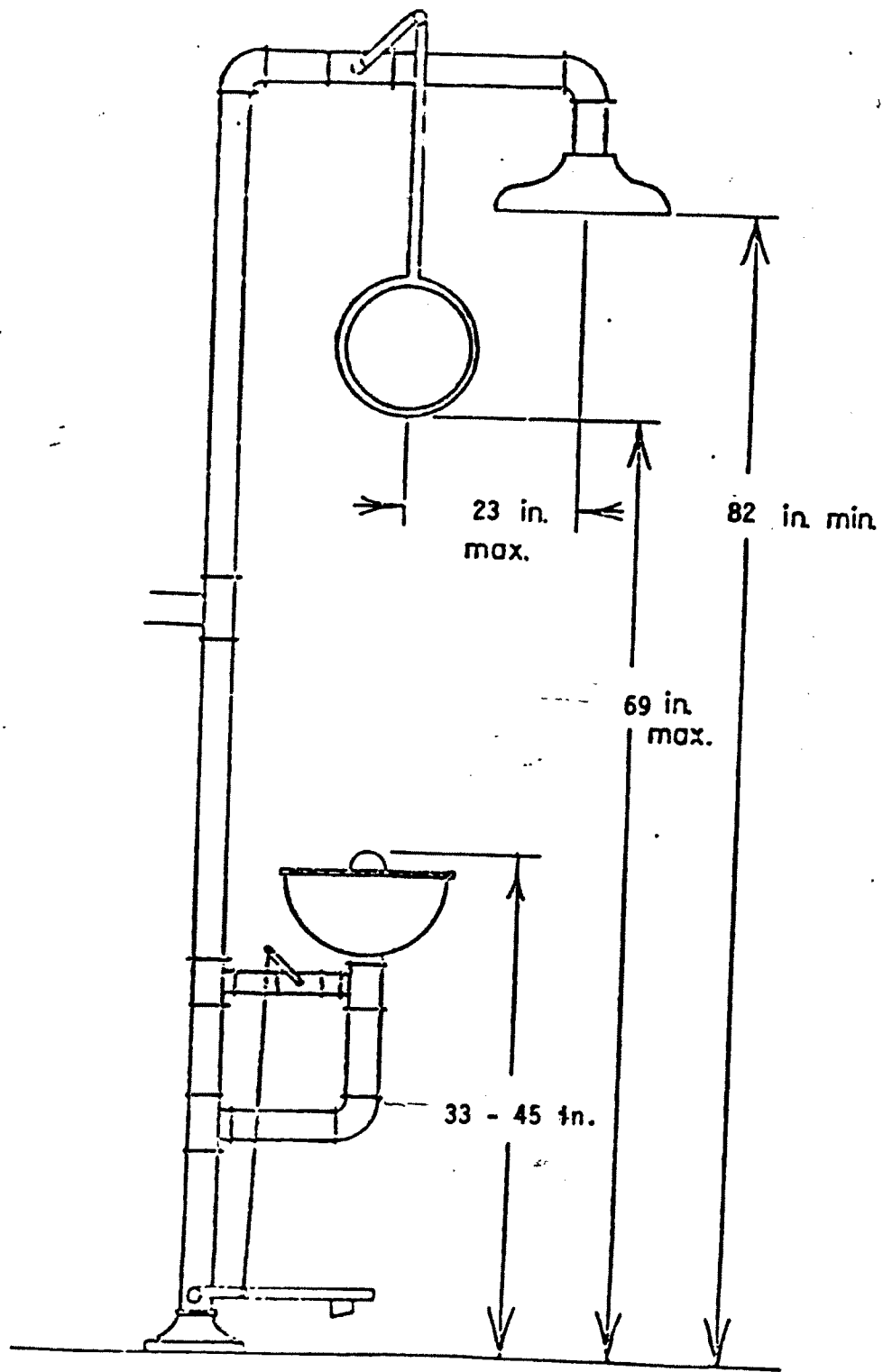
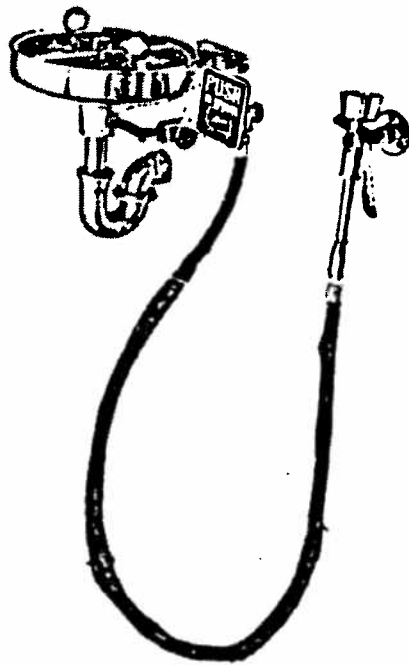


Illustration 11
Combination Shower and Eyewash

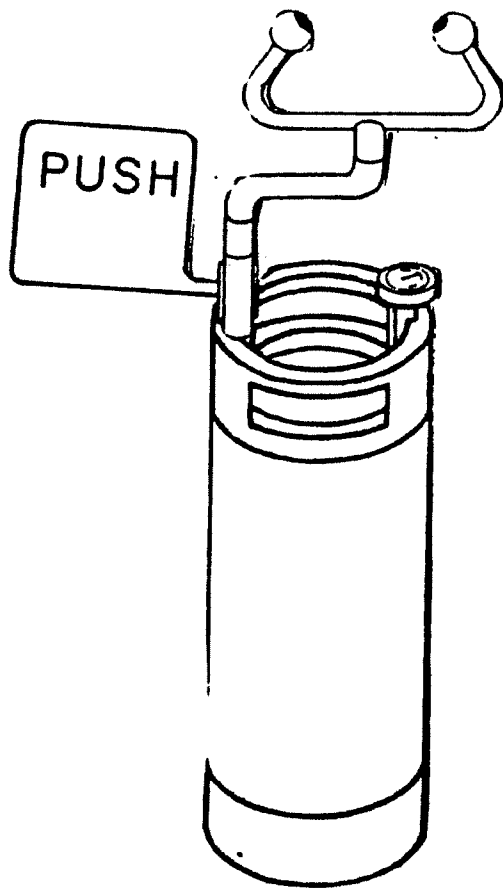


Attachment #4

Height of Controls, Shower Head and Eye Wash



ATTACHMENT #5



ATTACHMENT #6