



Title: **Emergency Shower and Eyewash Installation, Use, Testing and Maintenance**

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PURPOSE: To identify areas that require emergency showers and eyewashes, and to provide procedures on proper use, testing and maintenance.

SCOPE: University wide: Laboratories (academic and research) and non-laboratory areas, such as but not limited to Art Studios, Maintenance, Campus Operations and Maintenance (CO&M), and Shops.

PROCEDURE:

I. Responsibility

1. Department of Environmental Health & Safety
 - a. Determine areas that require emergency showers and eyewash stations.
 - b. Provide the specification for the type of emergency showers and eyewash stations.
 - c. Provide proper installation, maintenance and testing criteria.

2. Campus Operations & Maintenance
 - a. Maintain an inventory of locations of all emergency showers and eyewash stations in Stony Brook University buildings, including locations of all shut-off valves.
 - b. Test all emergency showers and eyewash stations annually for compliance with ANSI Z358.1 *American National Standard for Emergency Eyewash and Shower Equipment*.
 - c. Make any and all necessary repairs to emergency showers and eyewash stations so that they operate according to the current standards and regulations. If the equipment cannot be repaired, CO&M must replace the existing equipment with new equipment that complies with the current ANSI Z358.1 standards. CO&M is responsible for all repairs and replacements in kind of existing equipment.
 - d. Maintain records of all testing results and repairs completed by CO&M.

3. Departments
 - a. Departments must ensure that all staff are instructed in the location, use and limitations of the emergency showers and eyewash stations.
 - b. Department staff must test eyewash stations weekly. Records of test will be maintained by the Department. See Appendix 1 for recommended testing form.
 - c. Department staff must inspect personal wash units (eyewash bottles) weekly for expiration date.
 - d. The Department must contact CO&M (632-6400) if the emergency shower and/or eyewash station are not working properly and need repair.

- e. Departments are responsible for purchasing replacement emergency showers and/or eyewash stations that cannot be repaired by CO&M.
- f. Departments must purchase and install any new emergency showers and/or eyewash stations that may be required due to changes in work or requirements.
- g. Prior to purchasing this equipment, the Department must confirm with Environmental Health and Safety (632-6410) the type of equipment required. Installation can be accomplished by contacting Facilities Design and Construction (FD&C).

II. Required Locations

1. Any area that uses corrosive materials, including but not limited to battery charging areas, and any laboratory using hazardous chemicals must have an emergency shower and eyewash plumbed to the building water supply lines. Hazardous chemicals that require a plumbed eyewash include: formaldehyde, methylene chloride, and any of the carcinogens cited by OSHA in 29 CFR 1910.1000: Asbestos, alpha-Naphthylamine, Methyl chloromethyl ether, 3,3'-Dichlorobenzidine (and its salts), bis-Chloromethyl ether, beta-Naphthylamine, Benzidine, 4-Aminodiphenyl, Ethyleneimine, beta-Propiolactone, 2-Acetylaminofluorene, 4-Dimethylaminoazobenzene, N-Nitrosodimethylamine, Vinyl chloride, Inorganic arsenic, Cadmium, Benzene, 1,2-dibromo-3-chloropropane, Acrylonitrile, Ethylene oxide, Methylenedianiline, 1,3-Butadiene, 4-Nitrobiphenyl, alpha-Naphthylamine, methyl chloromethyl ether, 3,3'-Dichlorobenzidine (and its salts), bis-Chloromethyl ether, beta-Naphthylamine, Benzidine, 4-Aminodiphenyl, Ethyleneimine, beta-Propiolactone, 2-Acetylaminofluorene, 4-Dimethylaminoazo-benzene, and N-Nitrosodimethylamine
2. Newly installed emergency showers and eyewash stations must be located within 50 feet (no more than 10 seconds travel time) from the hazard that requires the installation. They must be located on the same level as the hazard and the path of travel must be free of obstructions that may inhibit the immediate use of the equipment. There can be no doors between the hazard and the emergency shower or eyewash station.
3. All emergency shower and eyewash station locations must be identified with a highly visible sign positioned so the sign is visible within the area served by the emergency equipment.

III. New Equipment Installation Requirements

1. All emergency showers and eyewash station must be purchased and installed to comply with the latest ANSI Z358.1 *American National Standard for Emergency Eyewash and Shower Equipment*.
2. All new equipment and replacement equipment must be approved by EH&S and be acceptable to the CO&M "parts list" (see Appendix 2 for approved equipment).
3. All emergency showers and eyewash stations must remain "on" once activated without requiring further use of the operator's hands until intentionally closed.
4. All new installations must deliver tepid flushing fluid (moderately warm or lukewarm potable water supply). Temperatures must not exceed 100°F and not be lower than 60°F.

5. All emergency showers and eyewash stations must be installed away from other hazards, such as but not limited to electrical outlets. If an electrical outlet is within 6 feet of the emergency shower or eyewash station, the outlet must be protected with a ground fault circuit interrupter (GFCI). The eyewash station must be installed to provide enough room to allow the eyelids to be held open with the hands while the eyes are in the flushing fluid stream.

IV. Use

1. All Stony Brook University staff working in laboratories where hazardous chemicals are used, or are working with corrosive materials, formaldehyde, methylene chloride or a carcinogen, must be instructed on the location, proper use and limitations of emergency showers and eyewash stations (see Appendix 3 for training handout).
2. Protective equipment (chemical splash goggles and lab coats) must be worn when working with hazardous chemicals as the first line of defense. Emergency showers and eyewash stations are not a substitute for proper primary protective devices.
3. Staff must be instructed to flush contaminated eyes and body for a minimum of 15 minutes. The eyelids must be held open to allow for proper flushing. Remove all contaminated clothing, including shoes, while under the emergency shower. Another staff must contact University Police (911 campus phone or 631-632-3333 cell phone) for emergency medical assistance. Anyone who becomes contaminated with hazardous chemicals and uses the emergency shower and/or eyewash station must receive medical attention at University Hospital Emergency Department or other healthcare provider.
4. Personal eyewash bottles are not to be substituted for plumbed eyewash stations. These bottles do not provide enough water to flush contaminated eyes for 15 minutes. These bottles may be kept in the immediate vicinity of staff working in a potentially hazardous area to supply immediate flushing. After this initial flushing, the injured individual must then proceed to a plumbed eyewash and flush the eyes for the required 15 minute period.

V. Testing and Maintenance

1. All emergency eyewash stations must be tested weekly by the user for a period long enough (at least 3 minutes) to verify operation, ensure that flushing fluid is available and to clear the supply line of any sediment build-up that could prevent fluid from being delivered to the head of the device and minimize microbial contamination due to sitting water. Testing is to be performed in a safe manner that will contain the water and not cause flooding. Any water on the floor must be immediately cleaned up. Contact CO&M (2-6400) if flooding occurs. After testing, replace the covers that protect the heads from dust and other airborne contaminants.
2. All personal wash units (eyewash bottles), where permitted, must be checked weekly by the user for the expiration date and to determine if it has been used. Dispose of any opened or expired eyewash bottles.
3. All emergency showers and eyewash stations must be inspected annually by CO&M to assure conformance with ANSI Z358.1.

4. If any emergency shower or eyewash station is found to not work properly, the user must immediately contact CO&M for repair.

INQUIRIES/REQUESTS:

Environmental Health and Safety
110 Suffolk Hall
Zip 6200
Main Office: 632-6410
FAX: 632-9683

RELATED FORMS:

Weekly Inspection Log (Appendix 1)
Approved Units (Appendix 2)
Emergency Eyewash training handout (Appendix 3)

RELATED DOCUMENTS:

ANSI Z358.1-2004 *Emergency Eyewash and Shower Equipment*
Occupational Safety and Health Agency (OSHA):
<http://www.osha.gov>
29 CFR 1910.151 *Medical and First Aid*
29 CFR 1910.1003, *13 Carcinogens*
29 CFR 1910.1048, *Formaldehyde*
29 CFR 1910.1052, *Methylene Chloride*
29 CFR 1910.1450, Appendix A, *Occupational Exposures to Hazardous Chemicals in Laboratories*
29 CFR 1926.441, *Batteries and Battery Charging*

Weekly Inspection Log

Purpose: The intent of the weekly testing is to ensure that there is a flushing fluid supply at the head of the device and to clear the supply line of any sediment build-up that could prevent fluid from being delivered to the head of the device and minimize microbial contamination due to sitting water.

Dept.: _____ Building: _____ Room: _____

Weekly Eyewash Testing Instructions:

1. Run eyewash for at least 3 minutes, weekly.
2. The eyewash is running properly if there is sufficient water flow from the eyepiece.
3. Record inspection data on log.
4. If eyewash is not functioning properly, contact CO&M (2-6400) and note corrective action.

Date	Functioning Properly		Initial	Corrective Action	Date	Functioning Properly		Initial	Corrective Action
	Yes	No				Yes	No		
Wk 1					Wk 1				
Wk 2					Wk 2				
Wk 3					Wk 3				
Wk 4					Wk 4				
Wk 1					Wk 1				
Wk 2					Wk 2				
Wk 3					Wk 3				
Wk 4					Wk 4				
Wk 1					Wk 1				
Wk 2					Wk 2				
Wk 3					Wk 3				
Wk 4					Wk 4				
Wk 1					Wk 1				
Wk 2					Wk 2				
Wk 3					Wk 3				
Wk 4					Wk 4				
Wk 1					Wk 1				
Wk 2					Wk 2				
Wk 3					Wk 3				
Wk 4					Wk 4				

Appendix B. Approved Units

In order to standardize the emergency shower and eyewash units on campus, the following equipment and replacement parts have been approved by EH&S and CO&M:

Company: Speakman Company
P.O Box 191
Wilmington, DE 19899
Phone: 800-537-2107
www.speakmancompany.com

Units:

Product Number SE-927

Description: Drench hose/eyewash, twin spray head, stay open valve, 6' hose, deck mounted.

http://www.speakmancompany.com/project_images/products/tech_sheet/SE-927.PDF



Product Number SE-579-SD

Description: Deck mounted, swing down aerated eyewash.

http://www.speakmancompany.com/project_images/products/tech_sheet/SE-579-SD.PDF



Appendix 3. Eyewash Safety Training Handout

Eyewash Safety

Follow these guidelines to make sure that you will have a working emergency eyewash available when you need it!

1. Make sure that everyone who works in the lab knows where the emergency eyewash and shower are located and how to use them.
2. Test the eyewash weekly by running the water for at least 3 minutes. This will ensure that there is sufficient water flow and no sediment build-up in the plumbing lines.
3. Check any eyewash bottles weekly for expiration date. Discard any opened bottles.
4. Contact Campus Operations & Maintenance (2-6400) if your eyewash is not working.
5. Always use protective eyewear* when working with chemicals.
6. In case of a chemical splash to your eyes:
 - Immediately flush skin or eyes with water. DO NOT RUB!
 - Hold your eyelids open with your hands and roll your eyes while using the eyewash to be sure water reaches the eyes and under your eyelids.
 - Keep your eyes in the water stream for 15 minutes.
 - Don't let contaminated water run into the non-contaminated eye.
 - Immediately wash off even small amounts of chemicals.
 - Get medical assistance immediately following flushing.
 - If possible, continue flushing while on way to medical help.
 - Know the effects of chemicals with which you are working. Read, ask questions about, and understand material safety data sheets for each chemical with which you work. Bring the MSDS with you when going for medical help!
 - Know how to help others reach showers or eyewashes and how to help them get medical assistance.
 - Complete an Accident Report for all chemical contamination incidents.

*Use chemical splash goggles when working with corrosive liquids, chemicals with an "eye" hazard or a "SKIN" designation. Safety glasses are good for incidental exposures but will not protect from splashes. Use a faceshield with chemical splash goggles under shield when pouring corrosives greater than 1 liter or filling/dispensing liquid nitrogen. Contact EH&S for more information on protective eyewear or other lab safety issues. See [EH&S Policy 1-8 *Emergency Shower and Eyewash Installation, Use, Testing and Maintenance*](http://www.stonybrook.edu/facilities/ehs/policy/campus.shtml) for more information on eyewashes (<http://www.stonybrook.edu/facilities/ehs/policy/campus.shtml>).