

May 13, 2009

**LOCATION, SELECTION, INSTALLATION, MAINTENANCE, AND TESTING OF  
EMERGENCY EYEWASH AND SHOWER EQUIPMENT**

**1. PURPOSE:** This Veterans Health Administration (VHA) Directive provides policy and procedures for the location, selection, installation, maintenance and testing of emergency eyewash and shower equipment.

**2. BACKGROUND**

a. VHA employees routinely perform work using a variety of substances that may pose a threat to their health and safety because they can cause corrosion, severe irritation, permanent tissue damage, or be absorbed through the skin and eyes. In the case of accidental chemical exposures to the eyes, a quick and effective response is essential to prevent lasting damage or a loss of sight.

b. In order to prevent or minimize injuries to eyes and skin, the Occupational Safety and Health Administration (OSHA) 29 CFR 1910.151(c) requires that suitable facilities for quick drenching or flushing of the eyes and body be provided in work areas for immediate emergency use when exposure to corrosive materials occurs. In addition, OSHA requires that emergency eyewash and showers be available when handling blood and potentially infectious materials and specified chemicals including, but not limited to, formaldehyde, methylene chloride and select carcinogens.

c. Emergency eyewashes and showers are first aid rather than preventative measures. Emergency eyewash and shower equipment is not to be used in lieu of appropriate personal protective equipment (PPE). Evaluation of areas for emergency eyewashes and showers, however, must be conducted as if PPE was not used.

d. A lack of definitive guidance on eyewash installation, maintenance and testing has resulted in confusion and a lack of action in the field. Although OSHA requires that "suitable facilities" be provided "for immediate emergency use", specific guidance is not provided. The voluntary American National Standards Institute (ANSI) Z358.1 "American National Standard for Emergency Eyewash and Shower Equipment" provides detailed information regarding the installation and operation of emergency eyewash and shower equipment. Although OSHA has not formally adopted the standard, they have often referred employers to ANSI Z358.1 as a source of guidance for protecting employees who may be exposed to injurious corrosive materials.

**3. POLICY:** It is VHA policy to provide employees, students, and volunteers with emergency eyewash and shower stations where there is a reasonable probability of injury to the eyes or skin occurring as a result of exposure to hazardous chemicals or materials.

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#### 4. ACTION

a. **Director, Office of Construction and Facilities Management (CFM)**. The Director, CFM is responsible for ensuring;

(1) ANSI-approved eyewash and shower equipment is included in all design specifications, and

(2) Eyewashes and showers are installed in accordance with the equipment manufacturer's specifications and the most recent version of ANSI-Z358.1.

b. **Chief Consultant, Occupational Health, Safety and Prevention Strategic Healthcare Group (13D)**. The Chief Consultant, Occupational Health, Safety and Prevention Strategic Healthcare Group (13D), advises VHA staff on public and occupational health issues related to eye hazards.

c. **Director, Safety, Health, Environmental and Emergency Management (10NS)**. The Director, Safety, Health, Environmental and Emergency Management (10NS), provides administrative management and technical support to Veterans Integrated Service Networks (VISNs) and VHA facilities in complying with Federal, state, and local regulations regarding eye hazards, and eyewash and shower equipment.

d. **VISN Director**. Each VISN Director is responsible for:

(1) Providing adequate resources for the implementation of this Directive.

(2) Ensuring that VISN Safety and Health staff evaluates the emergency eyewash and shower program during the facility Annual Workplace Evaluations (AWEs).

e. **VISN Safety and Health Office Staff**. VISN Safety and Health Office staff is responsible for:

(1) Providing technical assistance to facility staff on the implementation of this Directive.

(2) Reviewing and approving the Equipment Installation and Replacement Plan for each facility in the VISN.

(3) Evaluating the emergency eyewash and shower program during each facility AWE.

(4) Reporting program deficiencies in the AWE report.

(5) Tracking program deficiencies to correction.

f. **Facility Director**. Each VHA facility Director must:

(1) Provide adequate resources for the implementation of an Equipment Installation and Replacement Plan. Plans must be submitted to the VISN staff for approval by July 15, 2009. Severity of the hazards requiring the eyewash and shower, as well as funding available from the VISN, will be considered in approval of the plan. Progress toward achieving the abatement plan will be evaluated by VISN staff during the AWE.

(2) Ensure the implementation of a written Emergency Eyewash and Shower Program in accordance with this Directive (see Att. A through Att. F).

(3) Designate a coordinator to administer the emergency eyewash and shower program.

(4) Ensure that facility management:

(a) Consults with facility Safety and Health staff on the selection and location of emergency eyewashes and showers.

(b) Executes all work orders for the installation or repair of emergency eyewash and shower equipment on a high priority basis.

(c) Conducts annual flow rate testing and compliance assessment (see Att. E).

(d) Maintains written records of flow rate testing and compliance assessment.

(e) Designates employee(s) to perform flushing of emergency showers.

(f) Removes emergency eyewashes and showers that have been identified for removal by the facility Safety and Health staff.

(5) Develop a program for ensuring the availability of suitable eyewash and shower facilities. The following steps are required:

(a) Written Program. Develop and implement a written Emergency Eyewash and Shower Program that addresses the location, selection, installation, maintenance, and testing of emergency eyewash and shower equipment. **NOTE:** *Attachments A through F contain mandatory elements that must be incorporated into the facility policy.*

(b) Hazard Assessment. An eyewash and shower hazard assessment will be conducted in all areas of the facility in accordance with Attachment A. Sample hazard assessment tools can be found in the General Safety Guidebook on the Center for Engineering and Occupational Safety and Health (CEOSH) Web site at: <http://vaww.ceosh.med.va.gov/>.

(c) Strategies for Minimizing the Number of Required Eyewashes. These strategies include, but are not limited to:

1. Eliminating or minimizing the use of caustic and corrosive chemicals, i.e., those having a pH less than 2 or greater than 11.

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2. Centralizing the use of concentrated caustic and corrosive chemicals to designated areas. For instance, restrict the mixing of cleaning agents to a centralized area equipped with an eyewash and or shower, as appropriate.

3. Implementing engineering controls to reduce the potential for exposure, e.g., use of closed or automatic chemical dispensing systems, splash guarding, or long handle spraying and cleaning tools.

4. Requiring the use of “green” chemical products, especially cleaning products, where available. *NOTE: Environmentally-safe green products may be less corrosive than traditional cleaners and reduce the potential risk for eye injury.*

5. Eliminating, where feasible, or reducing the number of sites that use chemicals that OSHA specifically states require an eyewash, e.g., methylene chloride, formaldehyde.

(d) Equipment Installation and Replacement Program. Eyewash and shower equipment that is no longer required, based on the Hazard Assessment, is to be tagged with a “DO NOT USE” sign, the water supply turned off, and the unit removed as soon as possible. *NOTE: ANSI-approved equipment that is removed will be retained for inspection and possible installation in areas where units are needed.*

1. The placement and design of eyewash and showers must meet the accessibility requirements and standards to the extent compelled by the Architectural Barriers Act when applicable, for the protection of all employees working in the immediate area.

2. A prioritized list must be prepared by the facility Safety and Health staff, in consultation with Facilities Management staff, using the results of the Hazard Assessment. This list, based on the severity of the hazard present in the area, will give priority ranking for installation and replacement of eyewashes and showers.

3. Existing eyewashes and showers determined to be necessary must immediately be evaluated to ensure that the installation and operation of those units meet ANSI standards. Units that do not meet ANSI standards must be scheduled for reinstallation, repair, or replacement (see Att. E).

4. Installation of appropriate equipment will be scheduled for areas where equipment is not currently available.

5. Until plumbed or self-contained eyewashes can be installed, interim measures must be taken to protect employees. *NOTE: Acceptable temporary substitutes include personal eyewash bottles (see Att. F) and portable ANSI-approved eyewashes.*

6. When deemed necessary by the hazard assessment, ANSI-approved emergency eyewashes and showers must be installed in newly constructed areas. All unapproved eyewashes and showers must be replaced with ANSI-approved units during renovation projects (see Att. C).

(e) Training. All personnel assigned to install, perform repairs, flush and test eyewashes and showers must be trained on the manufacturer's specifications and on ANSI performance standards for the specific device.

1. Supervisors must be trained in the use, maintenance, operation, and inspection of emergency eyewash and shower equipment.

2. Employees assigned to flush emergency eyewashes must be trained in flushing and visual inspection requirements.

3. Employees working in areas where emergency eyewashes and showers are required must be trained:

a. In the proper operation and effective use of the emergency equipment, and

b. In assisting other employees in using the eyewash and shower.

(f) Correction of Deficiencies. If the emergency unit is not operating to ANSI specifications, the area supervisor must tag the unit with a "DO NOT USE" sign and contact Facilities Management for repair or replacement (see Att. E).

g. **Facility Safety and Health Office Staff.** Facility Safety and Health Office staff is responsible for:

(1) Conducting hazard assessments in all areas of the facility, including areas with existing eyewashes, using the guidance provided in Attachment A.

(2) Conducting new assessments every time the workplace conditions change.

(3) Maintaining written hazard assessment records for all areas of the facility.

(4) Evaluating and approving personal eyewash bottles (see Att. F).

(5) Identifying emergency eyewashes and showers that are no longer needed and submitting a request to Facilities Management for their removal.

(6) Reviewing project specifications for all new construction and renovation projects to determine the need for eyewash and shower units, including proper selection and installation.

(7) Providing technical assistance to Facilities Management and other personnel in the selection, installation, maintenance, and testing of emergency eyewashes and showers.

(8) Conducting an annual review of all elements of the emergency eyewash and shower program.

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(9) Maintaining a written evaluation of the annual review.

(10) Including eyewash and shower inspections in Environmental and Hazard Surveillance rounds.

(11) Providing training to employees and supervisors in the use, inspection, maintenance, and testing of emergency eyewash and shower units.

h. **Facility Supervisor.** Each facility supervisor is responsible for:

(1) Maintaining responsibility for the emergency eyewash and shower program in the assigned work areas and processes, to include associated equipment.

(2) Assisting Safety and Health staff in performing hazard assessments of work areas to determine where eyewashes and showers are needed.

(3) Notifying facility Safety and Health staff of changes in work areas or work processes and practices that require a Hazard Assessment to evaluate the need for new installations, or for the removal of existing emergency eyewashes or showers.

(4) Ensuring designated employee(s) perform eyewash and shower flushes, and ensuring this designated employee maintain appropriate records of eyewash and shower flushing.

(5) Maintaining an inventory of, and regularly inspecting, all eyewash bottles used by service employees.

(6) Training, and maintaining a record of training for all employees regarding hazards, which require emergency eyewashes and showers, and in the use of the equipment, including eyewash bottles.

(7) Ensuring that any employee who uses an emergency eyewash or shower is provided medical care as soon as possible.

## 5. REFERENCES

a. General Safety Guidebook, VHA Center for Engineering and Safety and Health,  
<http://vaww.ceosh.med.va.gov/ceosh/Guidebooks/GenSafety/!SSL!/WebHelp/2006GenSafe.htm>

b. OSHA Standard 29 CFR 1910.151 Medical Services and first Aid  
[http://www.osha.gov/pls/oshaweb/owadisp.show\\_document?p\\_id=9806&p\\_table=STANDARD\\_S](http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9806&p_table=STANDARD_S)

c. OSHA Standards Interpretations for 1910.151(c)  
[http://www.osha.gov/pls/oshaweb/owalink.query\\_links?src\\_doc\\_type=STANDARDS&src\\_uniq ue\\_file=1910\\_0151&src\\_anchor\\_name=1910.151\(c\)](http://www.osha.gov/pls/oshaweb/owalink.query_links?src_doc_type=STANDARDS&src_uniq ue_file=1910_0151&src_anchor_name=1910.151(c))

- d. American National Standards Institute (ANSI), Z358.1-2004, "American National Standard for Emergency Eyewash and Shower Equipment". <http://www.ansi.org/>
- e. College of American Pathologists, Laboratory Accreditation Program, GEN.72500 [http://www.cap.org/apps/docs/education/lapaudio/pdf/111908\\_handout\\_format.pdf](http://www.cap.org/apps/docs/education/lapaudio/pdf/111908_handout_format.pdf)
- f. Enforcement of Non-Discrimination on the Basis of Handicap in Programs or Activities Conducted by the Department of Veterans Affairs. Title 38 Code of Federal Regulations (CFR), Part 15, sections 15.101 through 15.170. <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=11ecaeea5acd6fecf56ef39f53b934ce&rgn=div5&view=text&node=38:1.0.1.1.17&idno=38>
- g. What standards must facilities subject to the Architectural Barriers Act meet? 41 CFR §§102-76.65 through 76.95. <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=11ecaeea5acd6fecf56ef39f53b934ce&rgn=div5&view=text&node=41:3.1.1.3.24&idno=41>
- h. Americans With Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines. 36 CFR part 1191, Appendices C and D. <http://ecfr.gpoaccess.gov/cgi/t/text/text-idx?c=ecfr&sid=11ecaeea5acd6fecf56ef39f53b934ce&rgn=div5&view=text&node=36:3.0.9.1.6&idno=36>
- i. United States Access Board: <http://www.access-board.gov/index.htm>
- j. General Services Administration (GSA): [http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA\\_OVERVIEW&contentId=18888&noc=T](http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=18888&noc=T) and [http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA\\_OVERVIEW&contentId=8106](http://www.gsa.gov/Portal/gsa/ep/contentView.do?contentType=GSA_OVERVIEW&contentId=8106)

**6. FOLLOW-UP RESPONSIBILITY:** The Deputy Under Secretary for Health for Operations and Management (10N) is responsible for the contents of this Directive. Questions may be directed to the Director, Safety, Health, Environmental and Emergency Management (10NS) at (202) 266-4547.

**7. RESCISSIONS:** None. This VHA Directive expires May 13, 2014.

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DISTRIBUTION: E-mailed to VHA Publications Distribution List 5/13/2009

## ATTACHMENT A

### EMERGENCY EYEWASH AND SHOWER LOCATION (MANDATORY)

#### 1. Hazard Assessment

- a. A hazard assessment will be performed in all areas of the facility to determine where emergency eyewashes and showers are needed.
- b. A current record of the hazard assessments conducted in each area of the facility must be available for review.
- c. The VHA General Safety Guidebook contains an example of a Hazard Assessment that may be used in documenting the assessment. The General Safety Guidebook is available on the Center for Engineering and Occupational Safety and Health (CEOSH) Web site at: <http://vaww.ceosh.med.va.gov/>. *NOTE: This is an internal Web site and is not available to the public.*
- d. Hazard assessments must be repeated whenever a change in processes, chemicals, or controls could result in the need for new emergency eyewash or shower equipment or the removal of existing equipment. Supervisors in charge of the subject work area are responsible for requesting updated hazard assessments when processes, work practices, or chemical(s) used change.

*NOTE: A chart identifying some areas and agents that need to be evaluated is included in the General Safety Guidebook. This is not a comprehensive list of all areas requiring emergency flushing units. Additionally, the listing of an agent does not mandate installation of emergency equipment, but it does indicate that an assessment must be conducted.*

**2. Accessibility.** Generally, the distance from the worker's location to the emergency eyewash or shower is not to exceed 10 seconds walking distance. American National Standards Institute (ANSI) recognizes that the average person travels about 55 feet in 10 seconds. In areas where extremely corrosive chemicals are used, that distance may be reduced. The Material Safety Data Sheet (MSDS) for chemicals must be consulted when determining travel distances to emergency equipment.

- a. Emergency flushing equipment must be located on the same floor level as the hazard.
- b. The emergency eyewash or shower units are not to be located in an area where employees must pass through a locked or latched doorway or weave around equipment to obtain access.
- c. For substances that are gaseous or highly volatile, the emergency eyewash or shower may be located outside of the immediate area of the potential release.



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### **3. Priority Ranking**

a. All new, replacement and existing emergency eyewashes and showers must be ranked based on the severity of the hazard in the work area. ***NOTE:** Several examples of Hazard Assessment forms are available in the General Safety Guidebook. Each form results in the generation of a priority ranking. The same type of Hazard Assessment form should be used throughout the facility.*

b. The Priority Ranking scores must be maintained as a part of the hazard assessment.

c. The Priority Ranking scores must be used to develop the Equipment Installation and Replacement Plan.

**ATTACHMENT B**

**EMERGENCY EYEWASH AND SHOWER SELECTION (MANDATORY)**

1. Only the American National Standards Institute (ANSI)-approved emergency eyewashes, showers, and drenching equipment may be purchased and installed in Veterans Health Administration (VHA) facilities. Emergency equipment must be installed in accordance with the manufacturer's specification to maintain the ANSI approval. *NOTE: ANSI-approved portable eyewash and shower equipment is available from manufacturers for field or remote locations.*
2. Selection of the emergency eyewashes and equipment must be approved by the facility Safety and Health staff. *NOTE: When necessary, Occupational Health personnel need to be consulted for assistance.*
3. Equipment selection must take into consideration space required to install and operate equipment, plumbing connections, accessibility, availability of drains, and hazards that might result from equipment operation.
4. ANSI-approved self-contained eyewashes are acceptable, especially in areas where a tepid water supply is not available.
5. Drench hoses used as eye or face washes must meet the ANSI performance requirements for those devices.
6. Use of personal eyewash bottles is allowed, but must be strictly controlled. Personal eyewash bottles may be used as a supplement to eyewash units, but can not be used as a substitute for an ANSI-approved eyewash. Eyewash bottles may be kept in the immediate area where hazardous chemicals are used to supply immediate interim flushing until the employee can proceed to an ANSI-approved eyewash (see Att. F).

**ATTACHMENT C**

**EMERGENCY EYEWASH AND SHOWER INSTALLATION (MANDATORY)**

1. Emergency eyewashes and showers must be installed in accordance with manufacturer's specifications and American National Standards Institute (ANSI) installation standards.
2. All units must be in accessible locations, free from obstructions. Units that do not meet minimum requirements must be evaluated by the facility Safety Officer and a written approval for continued use or a work order for modification or upgrade generated. A copy of this approval must be maintained in the work area and in the Safety Office.
3. The location of this equipment must be identified with a highly visible sign.
4. The equipment must be installed on a system that is capable of delivering the quantity and pressure of water required by the manufacturer's specification to comply with the requisite ANSI Z358.1 approval.
5. All emergency eyewash and showers need to deliver tepid water (60-100 degrees Fahrenheit).  
*NOTE: The General Safety Guidebook provides information on methods of achieving tepid water.*
6. Exceptions for tepid water provisions must be approved by the facility Safety Committee.
7. Freeze protection must be provided, when needed.

**ATTACHMENT D**

**EMERGENCY EYEWASH AND SHOWER MAINTENANCE (MANDATORY)**

1. All personnel assigned to perform repairs and testing of emergency eyewashes and showers must be trained on the manufacturer's specifications and on American National Standards Institute (ANSI) performance standards for the specific device.
2. Emergency equipment must be maintained in accordance with the manufacturer's specifications.
3. Modifications to emergency equipment that voids the ANSI approval of the device are prohibited.
4. Plumbed emergency eyewashes, eye and face washes (stand-alone and combination units), and drench hoses must be activated weekly by a person designated to flush the line and ensure proper operation. The duration of flush must be adequate to flush the line back to the first active service connection; the supply line must be cleared of sediment and microbial contamination due to sitting water; and there must be an adequate water supply at the head of the unit.
5. Plumbed emergency showers (stand-alone and combination units) must be activated on a monthly basis by designated personnel. The duration of flush must be adequate to flush the line back to the first active service connection; the supply line must be cleared of sediment and microbial contamination due to sitting water; and there must be an adequate water supply at the head of the unit. If examination of fluid flushed from the shower reveals discoloration or sediment, the frequency of flushing must be increased until the problem is corrected or until the shower is replaced.
6. Self-contained showers and eyewashes must be checked weekly to ensure that the flushing fluid is full and in good condition. Self-contained units must be maintained in accordance with the manufacturers' recommendations, such as the cleanliness and expiration date of fluid.
7. A written record of the activation of emergency units must be maintained at or near the device. Records must be kept on a tag or label attached to the eyewash or shower, or on an inspection checklist maintained on file, or by an electronic method that provides a permanent record.

**ATTACHMENT E**

**EMERGENCY EYEWASH AND SHOWER TESTING (MANDATORY)**

*NOTE: A sample “Emergency Eyewash and Shower Equipment Survey and Inspection Form” is included in the Veterans Health Administration (VHA) General Safety Guidebook.*

1. Facilities Management is responsible for:
  - a. Testing all emergency equipment after installation to ensure that it meets the manufacturer’s installation requirements.
  - b. Testing all devices annually using the manufacturer’s inspection procedures to ensure continued conformance with American National Standards Institute (ANSI) 358.1.
  - c. Maintaining a written record of the procedures used and the testing date.
2. Units that fail testing must be repaired immediately. If deficiencies cannot be immediately corrected, the area supervisor must be notified and the unit must be tagged “DO NOT USE”. The area supervisor must notify all affected employees and the facility Safety Office when emergency equipment is out of service. A portable unit may be temporarily required to meet the need for an emergency eyewash and shower.
3. A written record of the activation and inspection of emergency units must be maintained at or near the device. Records must be kept on a tag or label attached to the eyewash or shower, or on an inspection checklist maintained on file, or by an electronic method that provides a permanent record.

**ATTACHMENT F**

**PERSONAL EYEWASH BOTTLES (MANDATORY)**

1. Eyewash bottle stations are not authorized for use in areas where plumbed eyewash installations are feasible.
2. Eyewash bottles and sealed portable eyewash units have a finite water supply and are considered interim first aid, not as a replacement for additional eye washing or medical care. The main purpose of these units is to supply immediate flushing. The injured person needs to proceed to a plumbed or self-contained eyewash to flush their eyes for the required 15-minute period.
3. Personal eyewash bottles may be considered for use:
  - a. During an interim period until permanent eyewashes can be installed.
  - b. For activities remote to facilities that do not allow immediate access to plumbed eyewashes.
4. For remote field operations, eyewash bottles may be made available at the immediate job site to be used in conjunction with sealed portable eyewash units available on the work vehicle or truck.
5. For highly mobile operations within facilities, personal eyewash bottles may be supplied on work carts for immediate first aid. Employees must be trained on the locations of the closest permanent eye wash stations to be used for sustained flushing in each work area.
6. Where eyewash bottles are allowed, a formal eyewash bottle program must be administered that includes:
  - a. **Hazard Assessment.** Selection and use of eyewash bottles must be evaluated and approved by the designated Safety Manager. Factors to consider in the evaluation include, but are not be limited to:
    - (1) The physical and chemical characteristics of the chemical, including the risk of injury.
    - (2) Contingencies for cold temperatures and potential for eye wash solution freezing. Electrical heating units may be required.
    - (3) Volume of solution required for operations with a high risk of eye injury and remoteness to a plumbed eyewash to allow for longer flushing times.
  - b. **Approval.** Upon approval, eyewash bottles must be assigned to individual users.

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c. **Master List.** The Safety Manager must maintain a list of designated eyewash bottle users, including the number of eyewash bottles assigned to the service, and the expiration dates of the eyewash solutions.

d. **Training.** All designated users must be:

(1) Trained in the proper use of the eyewash bottle, including a demonstration of actual use of the eyewash bottle.

(2) Informed of the necessity of quickly accessing a plumbed eyewash, or reporting to the emergency care unit, whichever is closer.

e. **Inspection.** Supervisors are responsible for inspecting eyewash bottles weekly to ensure that all bottles are sealed and have not reached their expiration dates.