

**North Carolina Department of Labor
Division of Occupational Safety and Health**

Raleigh, North Carolina

Field Information System

Operational Procedure Notice 143

Subject: Suitable facilities for drenching or flushing the eyes or body.

A. **Purpose.**

The purpose of this operational procedure notice (OPN) is to provide guidance in evaluating/determining what constitutes an acceptable/suitable facility for quick drenching or flushing the face, eyes or body. In this OPN the terms, appropriate, suitable, adequate and other like terms may be used interchangeably.

B. **Standards.**

1. **29 CFR 1910.111(b)(10)(iii)** states, "Stationary storage installations shall have an easily accessible shower or a 50-gallon drum of water."
2. **29 CFR 1910.111(b)(10)(iv)** states, "Each vehicle transporting ammonia in bulk except farm applicator vehicles shall carry a container of at least five gallons of water."
3. **29 CFR 1910.124(g)(2)** states, "An emergency shower and eye-wash station close to the dipping or coating operation. In place of this equipment, you may use a water hose that is at least 4 feet (1.22 m) long and at least 3/4 of an inch (18 mm) thick with a quick-opening valve and carrying a pressure of 25 pounds per square inch (1.62 k/cm²) or less."
4. **29 CFR 1910.151(c)** states, "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."
5. **29 CFR 1910.261(g)(18)(i)** states, "Quick operating showers, bubblers, etc., shall be available for emergency use in case of caustic soda burns."
6. **29 CFR 1910.262(pp)** states, "Wherever acids or caustics are used, provisions shall be made for a copious and flowing supply of fresh, clean water."
7. **29 CFR 1910.268(b)(2)(i)** states, "... 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."
8. **29 CFR 1910.1003(d)(2)(v)** states, "Emergency deluge showers and eyewash fountains supplied with running potable water shall be located near, within sight of, and on the same level with locations where a direct exposure to Ethyleneimine or beta-Propiolactone only would be most likely as a result of equipment failure or improper work practice."

9. **29 CFR 1910.1030(e)(3)(i)** states, "Each laboratory shall contain a facility for hand washing and an eye wash facility which is readily available within the work area."
10. **29 CFR 1910.1030(e)(4)(i)** states, "Each work area shall contain a sink for washing hands and a readily available eye wash facility. The sink shall be foot, elbow, or automatically operated and shall be located near the exit door of the work area."
11. **29 CFR 1910.1048(i)(2)** states, "If employees' skin may become splashed with solutions containing 1 percent or greater formaldehyde, for example, because of equipment failure or improper work practices, the employer shall provide conveniently located quick drench showers and assure that affected employees use these facilities immediately."
12. **29 CFR 1910.1048(i)(3)** states, "If there is any possibility that an employee's eyes may be splashed with solutions containing 0.1 percent or greater formaldehyde, the employer shall provide acceptable eyewash facilities within the immediate work area for emergency use."
13. **29 CFR 1910.1052(i)(1)** states, "If it is reasonably foreseeable that employees' skin may contact solutions containing 0.1 percent or greater MC (for example, through splashes, spills or improper work practices), the employer shall provide conveniently located washing facilities capable of removing the MC, and shall ensure that affected employees use these facilities as needed."
14. **29 CFR 1910.1052(i)(2)** states, "If it is reasonably foreseeable that an employee's eyes may contact solutions containing 0.1 percent or greater MC (for example through splashes, spills or improper work practices), the employer shall provide appropriate eyewash facilities within the immediate work area for emergency use, and shall ensure that affected employees use those facilities when necessary."
15. **29 CFR 1917.95(c)** - states, "When employees are exposed to hazardous substances which may require emergency bathing, eye washing or other facilities, the employer shall provide such facilities and maintain them in good working order."
16. **29 CFR 1926.50(g)** states, "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."
17. **29 CFR 1926.441(a)(6)** states, "Facilities for quick drenching of the eyes and body shall be provided within 25 feet of the work area for emergency use."

C. **Discussion.**

Recent case file reviews and discussions with the attorney general's office indicate a need to provide additional guidance for CSHOs to properly evaluate existing body flushing facilities in North Carolina workplaces. In many instances, CSHOs are automatically

citing an employer whenever an ANSI approved facility is not provided by the employer, instead of evaluating existing flushing facilities to determine whether they are suitable. Additionally, CSHOs are not fully documenting why an existing facility is not considered suitable. CSHOs should not rely solely on the fact that a facility is not ANSI approved as the basis for determining a violation of a standard exists. ANSI standards become mandatory OSHA standards only when they are adopted by OSHA; ANSI Z358.1 was not adopted by OSHA. In contrast to the OSHA standard 29 CFR 1910.151(c) and 1926.50(g), ANSI Z358.1 provides detailed information regarding the installation and operation of emergency eyewash and shower equipment. Therefore, OSHA often refers employers to ANSI Z358.1 as a source of guidance for protecting employees who may be exposed to injurious corrosive materials.

D. **Action.**

As mentioned above, the standards listed in Section B of this OPN do not require that an employer provide ANSI Z358.1 approved eyewash, face wash, or shower facilities in their place of business. After it is determined that suitable flushing facilities are required, either by evaluation of the chemical hazards or because a specific standard requires it, the CSHO must evaluate available water sources in the work area that an employer says will be used to flush the eyes, face or body. This evaluation is to determine whether the water sources present would be suitable facilities for the intended use, in that specific work environment.

Appendix A provides a list of questions that may be used to evaluate existing facilities. The adequacy of each facility must be made on a case-by-case basis. The CSHO will take pictures of all facilities that they determine were not suitable and will document in detail why they determined the facilities were not suitable. The questions in Appendix A may also be used to assess facilities in standards which contain more specific requirements (other than 1910.151 and 1926.50).

If an employer has installed an ANSI Z358.1 approved flushing facilities to address hazards associated with splashes, those facilities will typically be deemed "suitable" per the OSHA standards. However, the CSHO may still need to assess the location, operation, temperature and maintenance of the facilities against the criteria in Appendix A to determine whether they are adequate. If ANSI approved facilities are not installed in the workplace, the CSHO will use the information gathered from Appendix A to determine whether a citation is appropriate. The CSHO will discuss this with their supervisor, the bureau chief and/or the attorney general's office, if necessary.

The CSHO must document in the case file why a particular facility is not considered suitable. Additionally, the alleged violation description (AVD) for any citation must contain specific information about why the facility is not suitable. This information must be in detail to support the citation. The CSHO may reference all or specific parts of ANSI Z358.1 in the AVD as an acceptable means of abatement.

The CSHO will cite the general standard, such as 29 CFR 1910.151(c) or 29 CFR 1926.50(g). For the specific standards, such as 1926.441(a)(6), the CSHO may consider citing NCGS 95-129(1) "in the alternative" or alone when the specific standard does not address all the conditions which make the facility suitable.

OPN 143 cont'd.

E. **Effective Date.**

Standards Notice 46B is canceled. This OPN is effective on the date of signature. It will remain in effect until revised or canceled by the director.

Signed on Original

Susan Haritos

Health Standards Officer

Signed on Original

Allen McNeely

Director

11/14/2013

Date of Signature

Appendix A: Suitable Facilities for Flushing Eyes, Face & Body

The following questions should be used as necessary to help evaluate whether existing facilities are adequate. This is not an all inclusive list of questions, nor does every question on this list need to be asked. The CSHO will evaluate the facilities on a case-by-case basis. The CSHO should take pictures and measurements of all facilities and issues that are not considered suitable and document this information in the case file.

General Questions:

Ask the employee what they will do if they get a chemical in their eyes or on their face or skin.

Ask the employee if the employer has informed them what to do if there is a chemical splash to their eyes, face or skin.

Ask the employee where the eye and face wash and shower facilities they are expected to use are located.

Ask where other nearby water sources are located.

Ask the employer what assessments were made to determine if eye and face wash or showers are necessary.

Ask the employer what things were considered in determining the adequacy of the facility.

Accessibility - Location, Activation and Availability of Facility at Time Needed:

What is the distance to the closest facility? (Measure it if possible.)

How long does it take to walk at a normal pace to the closest facility? (Walk the length.)

Is the room where the facility is located locked or can it be locked at the time it is needed (such as a bathroom or closet)?

How long does it take for an employee to turn the facility on? (Have someone demonstrate.)

Does the facility remain on after it is turned on?

If the facility does not remain on, what must the injured employee do to keep the water flowing? (Have someone demonstrate.)

If using a facility that has other intended use (such as a kitchen sink, shower or hose), is the facility available at all times needed? (e.g. Is the hose in use somewhere else at the time it might be needed for rinsing the eyes such that the injured employee cannot use it? Is the sink full of dishes at a time that an employee might need it to rinse such that it is not able to be used as eyewash?)

Is the facility located in a relatively direct path from the hazard so that the employee can reach it without circumventing moving machinery or other dangerous equipment, use stairs or open doors? (Walk the path of the closest facilities, take photos of obstructions.)

Do employees work alone?

Water Spray Pattern, Volume, Temperature & Pressure:

Is the spray pattern appropriate for the expected use of the facility and hazards present?

Is water pressure high enough that the water reaches the employee's eyes or face?

Is the water pressure so high that it could cause eye injury or prevent the employee from keeping their face or body in the water stream?

Is the volume of water available sufficient to flush the face or body for 15 minutes?

Is the temperature mild enough that an employee will keep their face in the water stream and not suffer hypothermia or burn their skin? (Temperatures between 60 & 90 degrees are ideal and recommended by ANSI.)

Is hot water connected to the facility?

Can hot water only be turned on due the faucet type?

What is the temperature of the water?

Is there a temperature regulator?

From the Burn Foundation Website:

Hot Water Causes Third Degree Burns...

- ...in 1 second at 156°
- ...in 2 seconds at 149°
- ...in 5 seconds at 140°
- ...in 15 seconds at 133°.

From the U.S. Consumer Product Safety Commission (CPSC) pamphlet - *Avoiding Tap Water Scalds*:

The CPSC urges all users to lower their water heaters to **120 degrees Fahrenheit**. Most adults will suffer third-degree burns if exposed to 150 degree water for two seconds. Burns will also occur with a six-second exposure to 140 degree water or with a thirty second exposure to 130 degree water. Even if the temperature is 120 degrees, a five minute exposure could result in third-degree burns.

Facility Maintenance:

Are the facilities activated on any schedule to determine whether they are working and to flush lines? What is the schedule? (Have someone turn on facilities that have drains.)

Is the water source potable? (Water is normally considered potable if it is connected directly to public water source.) If connected to a well, consider taking a sample of the water or asking the employer for a water report.

If using an ANSI approved or other standalone unit which contains the water source in a tank, how is the water maintained "potable?"(e.g. is it purified?)

Evaluating a Hose:

Does the water sit stagnant in the hose or is the hose drained? (If hose water is stagnant, considering taking a sample from the hose.)

If the water hose has water in it, is it sitting in the sun? If so, the water may be scalding hot. Has this been considered by the employer?

How long does it take for the water to run until the water temperature is cool?

If evaluating a hose, the hose length and any other running water in the workplace may affect the water pressure. Has this been considered when the hose will be used for a water source as a wash?

Evaluating a Sink:

Does the sink have a separate sprayer?

Does the employee have to place their face/eyes under a faucet?

What type faucet exists? (Take a picture.)

Does the faucet have separate hot and cold water handles or a single handle?

If separate, how is the water temperature regulated?

Is the faucet tall or the sink deep enough that the employee can get their face/eyes under the faucet?

If both eyes and/or the face are injured, is the spray pattern of the faucet or sprayer sufficient to rinse both eyes and/or the entire face at once?

Evaluating a shower/bathtub:

Is it a tub/shower combo?

How does the employee step into the tub/shower?

Are there doors on the shower? How do they open?

Does the shower have separate hot and cold water handles or a single handle?

If separate, how is the water temperature regulated?

Does the water come out of the faucet immediately or does the employee have to pull a separate knob to activate the shower head? (Have someone demonstrate how to activate the shower head.)

Is the shower head high enough to accommodate the tallest worker?