Testing Eyewashes and Emergency Safety Showers

Introduction

Don't wait for an emergency to find out that your eyewash or emergency safety shower doesn't work properly. Regular inspections and maintenance are required to ensure that this important safety equipment is always ready for immediate use.

Eye Washes

Properly working eyewashes must:

- Treat both eyes simultaneously with clean, potable, tepid (60–100 °F) water at a rate of 0.4 gallon/minute and for at least 20 minutes.
- Be unobstructed, highly visible, and immediately available to all occupants in a laboratory.
- Be within 5 seconds (about 25 feet) of unobstructed travel from all work areas in the laboratory.
- Have an activation valve that will turn on the water within one second and remain on without being hand-held to allow both hands to be used to hold eyes open.

Federal guidelines (ANSI Z358.1–2014) state that eyewash units must be activated weekly to flush the line and verify operation. State or local regulations may be less stringent and may take precedence at your school. Microbial contamination can occur in plumbed eyewash stations and is becoming more of a concern in many schools. Regular flushing of the eyewash will reduce most microbial contamination. If microbial contamination is suspected, disinfect the eyewash components with a dilute bleach solution, and then thoroughly rinse them with water.

The following inspection procedure is recommended for all eyewashes.

1. Ensure access is unobstructed.
2. Verify that protective eyewash covers are properly positioned, clean, and intact.
3. Check that bowl and spouts are clean and free of trash.
4. Place a dishpan or bucket under the drain pipe to collect water (if necessary).
5. Check that flow is effective and continuous by pressing the hand paddle.
   a. Verify that protective eyewash covers come off when activated.
   b. Check that water flows from both eyepieces.
   c. Evaluate for adequate flow. The streams of water should cross.
   d. Verify that flow continues until the paddle is moved to its resting position.
6. Check that water drains from the bowl.
7. Document the inspection date and initial.

To test water flow, prevent rust or hard water deposits, and inhibit the build-up of pathogenic microorganisms, a 3-minute flush is recommended. To test the efficiency of the eyewash and ensure that the water will properly wash both eyes, use the simple transparency device described in Figure 1. Documentation of the inspection is as important as the actual inspection. Keep an inspection log book or attach an inspection tag to the eyewash. Always note any problems with the operation then initial and date the log (e.g., OK, TAM, 12/20/10).

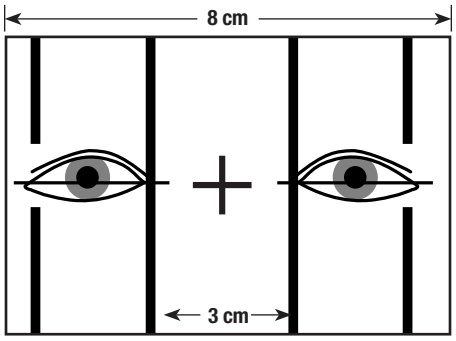

Figure 1. Draw a pair of eyes onto a clear plastic (overhead transparency) sheet, using the pattern shown above. Turn the eyewash on and place the sheet over the eyewash as if it were your face. You'll be able to see instantly if you're getting the proper eyewash coverage.

Emergency Safety Shower

Emergency safety showers may include body showers, drench hoses, and combination eyewash/safety shower units. Properly working emergency safety showers must be able to do the following:

- Have a spray pattern of at least 20 inches in diameter and provide clean, potable, tepid (72–92 °F) water at a rate of

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20 gallons/minute for at least 15 minutes.

- Must be unobstructed, highly visible, and immediately available to all occupants in the laboratory.
- Be within 10 seconds (about 50 feet) of unobstructed travel from all work areas in the laboratory.
- Have an activation valve that will turn on water within one second and will remain on until manually turned off.
- Must be at a height of 82–92 inches above the floor.

Manual testing of emergency safety showers is messier than eyewash inspections but should still be performed on a regular schedule. The following inspection procedure is recommended.

1. Ensure access is unobstructed.
2. Inspect the pipes for leaks.
3. Place a 5-gallon bucket underneath the safety shower and a shower curtain around the shower head and inside the bucket to catch all the water.
4. Check that flow is effective and continuous by activating the pull handle.
   a. Evaluate for adequate flow. Water should flow out of all showerhead holes.
   b. Verify that the water flow is steady, strong, but not too strong.
   c. Verify that flow continues until the pull handle is turned off.
5. Document the inspection date and initial.

Even better than a 5-gallon bucket may be the bottom of a 10- or 15-gallon wet/dry Shop Vac. Shop Vacs normally have wheels, a drain valve, and are larger than a bucket.

Conclusions

Eyewash and emergency safety showers are for the teacher's and student's protection. It is a teacher's responsibility to inspect the safety equipment on a regular basis to ensure it is in good working order. The inspection procedure and frequency of inspections should be clearly stated in the school's Chemical Hygiene Plan. Documentation of the inspection is as important as the actual inspection. All problems should be reported to the administration immediately so the safety equipment can be quickly repaired and returned to working order.

Materials for *Testing Eye Washes and Emergency Safety Showers* are available from Flinn Scientific, Inc.

Catalog No.	Description
SE1055	Safety Shower Tester

Consult your *Flinn Scientific Catalog/Reference Manual* for current prices.