



Feature Article

Keep An Eye on the Maintenance

Routine testing and maintenance of emergency equipment helps reduce risks to workers.

by Heather Koehn



An alarm sounds. An emergency fixture is activated, and a rusty fluid begins gurgling through the pipes. An injured worker uses the emergency unit, not suspecting the water used to flush his body and eyes has been collecting sediment for months or even years. Only later is it learned that the contaminated fluid severely worsened the worker's condition and caused long-term health damage.

This situation and what happens next is all too common: a costly and reputation-damaging lawsuit brought on by the employer's negligence.

AltaVista
Babel Fish

To translate this page,
click a flag!

Print this Page

[Click here](#) to email this page to a friend.

The Importance of Ongoing Maintenance

Beyond installing the emergency fixtures, these units must be regularly maintained to guarantee employees a safe working environment and fast treatment in the event a work-related accident occurs. According to the American National Standard for Emergency Eyewash and Shower Equipment, Z358.1-2004, plumbed emergency fixtures must to be tested weekly to ensure the units are in good working order and the flushing fluid is readily available.

When the equipment is not in use, sediments build up in the water supply or plumbing system. The sediment is dangerous for the user; it can also damage your unit. When the unit is tested weekly, it should be inspected for any leaks, obstruction of flow, or damaged parts. As the unit is tested, the plumbing system is simultaneously lubricated. Without weekly testing, sitting water can result in microbial contamination. Buyers beware: Some units include an internal strainer that needs to be cleaned and emptied regularly. Without this regular maintenance, bacteria and sediment can build up even when these fixtures are tested regularly.

When purchasing a unit, be sure the manufacturer provides operation, inspection, and maintenance instructions and that installation manuals are readily accessible to the appropriate personnel. Maintenance also needs to track when units are

inspected and tested to have a record for OSHA if an incident does occur. All fixtures need to be inspected annually to assure conformance to ANSI Z358.1.

When conducting an annual test, watch the clock to make sure the proper flow rate and pressure are maintained. Each unit needs to be supplied a minimum water pressure of 30 pounds per square inch. When testing drench showers, 20 gallons per minute (gpm) is required, while a minimum flow of 0.4 gpm for eyewashes and 3.0 gpm for eye/face washes is necessary. While being tested, the units should activate in one second or less and the valve should stay open until manually turned off. Check the water temperature and supply. It is a good idea to inspect the spray pattern and fixture height to meet the ANSI requirements. The final steps are visually inspecting all components and fully documenting the inspection.

The final steps are visually inspecting all components and fully documenting the inspection.

While conducting the inspection, remember that fixtures must be placed no more than 10 seconds away from a potential contaminant. An injured person could be visually impaired and barely able to identify his surroundings, which creates a need for bright, highly visible emergency stations. It is imperative that if equipment and workstations have been relocated, the plumbed emergency fixtures and portable gravity-fed or bottled eyewash be close at hand to minimize injury to the workers.

Emergency Thermostatic Valves

Thermostatic mixing valves are often used to regulate water temperature. This is important because ANSI requires that emergency fixtures supply tepid water in order to prevent extreme water temperatures that could be harmful in an emergency. While each situation must be evaluated individually, general guidelines for tepid water range are between 60 degrees F and 100 degrees F. Thermostatic valves can be used with all types of plumbed emergency equipment.

Each time an emergency valve is tested, the thermostatic mixing valve is tested. If the discharge temperature is not accurate, then maintenance is needed on the valve. Temperature can be adjusted by altering the valve's setting. If any problems occur, inspect the emergency valve's check stops to ensure they move freely and are not clogged. Be sure to inspect the mixing chamber to verify the mixing mechanism is free of debris, allowing the valve to operate smoothly.

A safety feature unique to the emergency thermostatic valve is a cold-water bypass that ensures cold water always will be available, even if the thermostat fails or the valve loses its hot water for any reason. Regular testing of this valve feature is absolutely necessary and can be as simple as closing off the incoming hot water and observing the flow from the valve. If cold water flows, the safety feature is working.

Purchasing a valve with components that can be removed as assembled parts makes them easier to work on. Ready access to the internal workings of the valve allows them to be quickly replaced and repaired, minimizing downtime. Also, look for emergency thermostatic valve that offers a stainless steel mixing mechanism because it is more durable and less likely to calcify and stick.

Gravity-Fed Portable Eyewashes

When eyewashes are required but a plumbed water supply is not available, self-contained, portable gravity-fed eyewashes can be used to protect workers. These units have a sufficient amount of water to provide a full 15-minute flush of the

Ads by Goooooogle

OSHA Safety Training

On-Site Services -
Nationwide 10 & 30
Hour Course;
Confined Space
www.metro-safety.com

Osha Forklift

Find Industrial
Carts & Trucks -
Search, Compare
& Contact
Suppliers
www.globalspec.com

Online Safety Training

OSHA 10-hr,
500/501,
HazWoper \$1 to
Katrina Fund After
Purchase
www.oshacampus.com

HAZWOPER 40 hr & 8hr

On-line ES&H
training from the
industry leader -
OSHA compliant!
www.natlenrtrainers.com

eyes--just be sure to check that equipment is certified to the ANSI standard if it is being used in place of a plumbed eyewash station.

Similar to plumbed units, portable gravity-fed eyewashes need to be evaluated and maintained weekly. Every three months, the units should be refreshed with water preservative to remain free of bacteria, fungi, and algae. Clear models are the best choice when inspecting a unit for floating debris because opaque models may have unknown substances floating in a remote corner. After each inspection, remember to document the procedure, accurately marking inspection tags and affixing them to the unit. New tags can be ordered from the manufacturer. Most important is documenting the maintenance of any product, noting any difficulties with the unit and the steps that were taken to resolve these difficulties.

Water should be changed as required and new solution added per the manufacturer's instructions. Water preservatives can be purchased in easy-to-store, 8-ounce bottles. Some units require purchase of an entirely new sterile bag and may be bulkier to replace because the product is pre-mixed water and preservative. Sterile bags should be replaced every two years or when tampered with, punctured, or when the eyewash has been used.

Water preservative in combination with potable water is necessary to maintain units that don't require sterile bags. These portable models can be as light as 7 gallons, which makes it easier to dump and replace water and solution. When replacing the fluid, it is often convenient to have a waste cart that is compatible with your unit. A good waste cart will allow the user to move the unit easily and dispose of the fluid through a spout at the bottom of the waste cart.

Bottled Eyewash

Although gravity-fed eyewashes provide an excellent source of relief, workers can find a more immediate level of protection with bottled eyewashes. These traditionally have been used as a first step to minimize work-related injuries.

While bottled eyewash is a more universal and accessible option for employers who frequently change operation locations, bottled eyewash should not replace a full 15-minute flush and never should be the only treatment available. When supplying bottled eyewash to employees, it is critical the bottle remains sealed to preserve sterility.

Bottled eyewash should not replace a full 15-minute flush and never should be the only treatment available.

There are a wide range of bottled eyewashes on the market, and their ease of use varies greatly. Look for products that have a one-step design that can be pulled off the wall and used without twisting or unscrewing caps. It is equally as important to maintain bottled eyewash as it is to maintain plumbed and gravity-fed units. In addition to being sealed, bottles should be printed with an expiration date. Once the expiration date has passed, be sure to purchase new product to ensure a viable solution. Additional stock should be made readily available in case of an emergency.

Replacement Parts

Contact your supplier to quickly replace aging or damaged product or to order replacement parts. New products and improved parts are regularly released by a wide variety of manufacturers, so evaluate your current product against new merchandise in the marketplace. Every purchase decision you make when repairing or replacing emergency fixtures is an investment in your company and the safety of its employees.

When completing the weekly inspection, ensure all damaged and broken

equipment is repaired immediately. A reliable and expedient supplier is absolutely necessary. Also essential are quality replacement parts that will sustain a reasonable amount of use. When repairing an emergency fixture, be sure to use approved parts; those that are not compatible with your unit can compromise how your product functions at a critical time. Depending on the extent of the damage, a product upgrade may make sense.

Employee Morale

Emergency fixture maintenance may not receive daily recognition as a critical accomplishment. However, if an unforeseen tragedy occurs, your company will be prepared with clean, functional, and well-documented equipment that will protect both your workers and your business. Employees who know their company cares about their well-being are more likely to create an environment of camaraderie and increased productivity, serving their employer well into the future.

This article appears in the July 2005 issue of *Occupational Health & Safety*.

Heather Koehn is the Assistant Product Manager for Emergency Fixtures at Bradley Corporation, a manufacturer of plumbing fixtures, washroom accessories, partitions, emergency fixtures, and solid plastic lockers. She can be reached at Bradley Corp., W142 N9101 Fountain Blvd., Menomonee Falls, WI 53052-0309. For more information, call 800-BRADLEY or visit www.bradleycorp.com.

AEDSuperstore
.com

[Home](#) | [Features](#) | [News](#) | [Products](#) | [NEW Employment Forum](#) | [Discussion](#) | [Links](#) | [OHS Online ECard](#)
[Search](#) | [Subscribe](#) | [Free Newsletter](#) | [Free Product Info](#) | [Advertise](#) | [Contact Us](#)

© Copyright 2005 [Stevens Publishing Corporation](#)
5151 Beltline Road, 10th Floor, Dallas, Texas 75254
Reproduction in whole or in part in any form or medium without express permission of Stevens Publishing Corporation is prohibited.
[Privacy Policy](#) | [Reprints](#)
Contact the [webmaster](#)