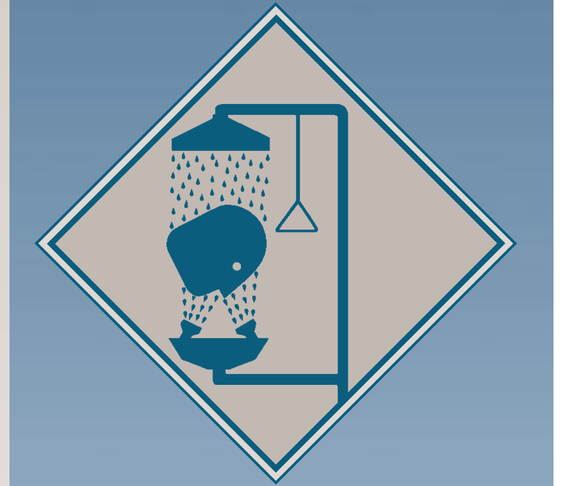
W ▸ H ▸ S ▸ C ▸ C

Emergency Showers and Eyewash Stations



WHSCC
All accidents are preventable

Workplace Health, Safety
and Compensation Commission
of New Brunswick

Emergency showers and eyewash stations

Thousands of New Brunwickers work near hazardous chemicals every day. Although safety practices have improved over the years, accidents involving chemical splashes and spills can still happen. Knowing what to do in these kinds of situations is critical; and having the proper emergency equipment at the workplace is not only necessary, it's the law.

New Brunswick employers are required by law to install special equipment called emergency showers and eyewash stations if there is any danger that workers' eyes or skin may be exposed to contamination from chemical materials in the course of their work. *(General Regulation 91-191,* section 11, *Occupational Health and Safety Act.)* These units are used to quickly flush out any chemical contaminant on the skin or in the eyes, which helps prevent serious, irreversible damage.

There are many kinds of eyewashes and emergency showers on the market. WHSCC staff can't recommend the use of a specific model, but we can tell you what features to look for and what water flow is necessary to effectively help the injured worker. This pamphlet is designed to help you do just that.

Setting the standard

There are no Canadian standards that govern emergency showers and eyewash stations; however, there is an American standard that will soon be made law in New Brunswick. The American National Standards Institute (or ANSI) has published the Standard ANSI Z358.1-1998 (Emergency Eyewash and Shower Equipment) that describes the specifications and requirements for this type of equipment.

How long should the flushing last?

Medical and industrial experience has shown that the eyes and skin should be flushed for at least 15 minutes. The sooner the flushing starts, the better the chances are of eye and skin recovery. The flushing should start within 15 seconds of the chemical splash to minimize tissue damage. If the injured worker is taken directly to the hospital for first aid without flushing at the worksite, the chemical may have time to cause permanent eye or skin damage.

Emergency eyewashes - what they are and how they work

An eyewash station consists of a catch basin with two water nozzles pointing towards the middle. The system is usually activated by a lever or a pedal and is equipped with a valve that allows water to run continuously until it's turned off. This ensures the unit will not shut off prematurely and allows the injured worker to use both hands to keep the eyelids open.

The ANSI standard calls for at least 1.5 litres of water per minute to be flushed through the eyewash unit. The water should be supplied at a low enough velocity to avoid eye injury.

Most eyewash stations are plumbed-in; however there are self-contained, gravity-fed units on the market as well, which are useful in work areas where there is no plumbing. These eyewashes are acceptable only if their tanks are large enough to meet the ANSI standard: they must hold enough water to flush the eyes for at least 15 minutes, using at least 1.5 litres of water per minute.

There are other kinds of eyewashes, but most are meant to be used in addition to the proper eyewash station. Here are two examples:

1. hand-held squeeze bottles;
2. plumbed units such as faucet mount units and drench hoses (usually installed next to a sink).

These types of eyewashes are used in temporary work areas or locations where water access is impractical. Most won't provide 15 minutes of water flow or the adequate flow rate of 1.5 litres per minute; as a result, they can't be used to replace proper eyewash stations. What they can do is provide immediate flushing in a highly hazardous area while the injured worker is being taken to a permanent eyewash.

The flushing fluid used in these units must be designed for this purpose and replaced according to the manufacturer's recommendations. Replace or refill eyewash bottles immediately after use.

Emergency showers - what they are and how they work

An emergency shower is a specially-designed shower head that will provide an overhead flow of water to the entire body. It's usually activated with a pull chain that hangs from the unit itself. The shower should be equipped with a stay-open ball valve that allows water to flow continuously until it's turned off. Some models come equipped with an attached eyewash.

Photos appear courtesy of Guardian Equipment

The ANSI standard calls for at least 75.7 litres of water per minute to flow through the shower unit.

How you can help

The injured worker may panic. If the eyes are affected by the chemical splash or by the vapour of the chemical, the injured worker may not be able to see. Your help and guidance will be critical.

If only the eyes have been affected, guide the injured worker to the eyewash station; tell him/her to hold the eyelids open in the flow of water. If the body was splashed, guide the injured worker to the emergency shower; tell him/her to remove any contaminated clothing after turning the shower on.

Make sure the area stays safe for you and the injured worker, who may be in shock and should be treated accordingly.

And remember: an injured worker should always see a doctor immediately after the 15 minute flushing period.

Location, location

The best place to set up an emergency shower or eyewash depends on the space configuration of your workplace. As a general rule, the eyewash station shouldn't be located more than 30 metres from the most likely point of contamination. It shouldn't take more than 10 seconds for a worker to get there.

The greater the danger of contamination, the closer the emergency shower and eyewash should be to the work area. But don't install the units directly in the space that is most likely to be contaminated if a spill or an accident happens.

If it's practical, set up the emergency shower and eyewash near an exit, in case an evacuation is ever necessary.

Hot or cold?

There is no law that specifies proper washing temperature for an emergency shower or eyewash. Using cool water will prevent a heat-releasing reaction from some chemicals during flushing; but remember that a person who has been splashed with a chemical may quickly develop symptoms of shock. Using cold water - especially in winter - may speed up the process, making the injured worker's condition even more severe.

Check out the CCOHS website, www.ccohs.ca., or call 1 800 263-8466 for health and safety information

Dos and don'ts

- Make sure the path leading to the emergency shower and eyewash is clear of obstruction; keep the immediate area neat and easy to get to.
- Store some loose clothing (such as a hospital gown) and/or blankets near the emergency shower; they can be used to cover the injured worker on the way to the hospital.
- Leave the dust covers that are supplied with the eyewash in place; they prevent dust and debris from falling inside the eyewash heads and becoming projectiles when the unit is turned on.
- Test the emergency shower and eyewash regularly, to be sure the units are working well.
- Don't use a residential shower stall as an emergency shower. Residential shower stalls don't deliver an adequate volume of water to deactivate a chemical contaminant.
- Make sure all workers are trained how to use the emergency shower and eyewash stations, and that everyone knows how to get to the stations quickly.
- A modesty curtain may be installed, but make sure it doesn't get in the way of someone trying to help the injured worker.
- Remember: emergency showers and eyewashes aren't a substitute for safe work practices. When there's a possibility of a chemical splash, proper handling techniques must be used. Personal protective devices, such as face shields and/or goggles, gloves and aprons must be worn.

For more information,
contact WHSCC Prevention Services at
(506) 453-2467 or **1 800 442-9776** (toll-free).