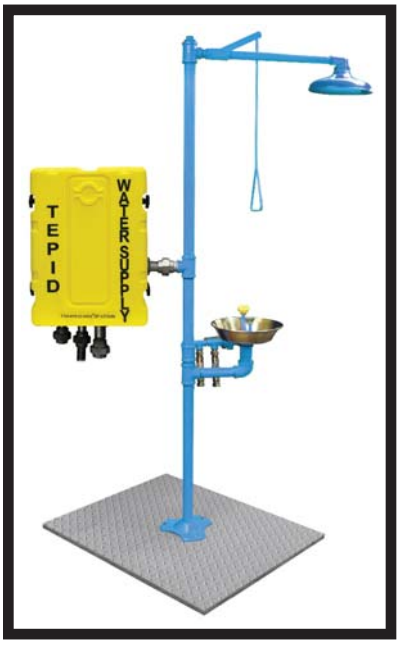
Regulate Water Temperature

Avoid permanent injury, freeze damage and corrosion.

In brief:

- *Federal regulations require you to flush supply lines to emergency showers and eyewash stations weekly.*
- *The water passing through these devices must be at a temperature between 60°F and 100°F.*
- *The showers/eyewashes must be placed strategically, depending on the plant's physical layout.*

Regulations and standards are intended to help keep employees and processes safe. Water temperature can mean the difference between whether an employee incurs permanent injury in an accident, whether outdoor processing facilities avoid expensive freeze damage, and whether a plant can keep operating without extensive maintenance. These matters are critical to operating a safe, compliant and efficient plant.



Be safe

In many manufacturing plants, there's a danger of accidents that result in chemical spills. The ANSI Z358.1-2009 standard helps plant managers comply with OSHA and establishes the universal minimal performance required for emergency shower and eyewash equipment used in plants. It states that emergency equipment must be located in easy-to-reach areas, with the eyewash station or shower accessible within 10 seconds. This has become referred to as the 10-second rule and plant managers should use a stopwatch to test the time it takes to reach these emergency stations. Furthermore, eyewash and shower stations must be installed in a well-lit area with visible signs and the path of travel to this equipment must be free of obstacles. Additionally, flow rates for eyewash stations must be at least 0.4 gpm at 30 psig, and safety showers must flow at least 20 gpm at 30 psig.

Imagine your skin is exposed to a hazardous chemical and you rush to the nearest safety shower. Instead of a deluge of tepid 85 °F water, freezing cold water engulfs your body. In this scenario, two options avail themselves: You jump out of the shower before having the chance to rinse the chemical off or you stay under the water for the designated 15 minutes and go hypothermic.

Ensuring that wastewater in drains complies with regulations is of extreme importance.

Both outcomes could cause more harm than the initial injury. This is why eyewash stations and safety showers must deliver "a flushing fluid temperature conducive to promoting a minimum 15-minute irrigation period. A suitable range is 60 °F to 100 °F" — tepid water. For example, pulp and paper mills must provide quick-operating deluge showers and eye fountains to flush the skin and eyes of harmful lime or acid burns.

According to the ANSI Z358.1-2009 standard, supply lines should be flushed of sediment weekly to ensure the showers and eyewashes are compliant and operational. Ensure there are a sufficient number of showers and they're placed appropriately and maintained regularly.

Prevent freezing

The winter of 2011 was difficult. Snow, frost, and freezing temperatures hit even the most southern states. Plants in Texas and Florida had problems caused by freezing temperatures they had never even considered. Outdoor processing plants need to plan and prepare for the dangers of cold.

There's a danger of freezing anywhere in a plant that uses water. When water freezes, it can burst pipes, ceasing operations and causing a nightmare for the plant manager. It also means an expensive cleanup, cost of pipe repair, loss of revenue, and wasted product.

Manage wastewater

Ensuring that wastewater in drains complies with regulations is of extreme importance as it ensures building integrity and employee safety. Not adhering to code can cause drainage system corrosion. The International Plumbing Code, 2006, paragraph 701.7 reads, “Wastewater when discharged into the building drainage system shall be at a temperature not higher than 140 °F. When higher temperatures exist, approved cooling methods shall be provided.” It’s imperative that plant managers be aware of this standard because violations can be costly and time-consuming.

Water can be the most dangerous and expensive liability, but the challenges it presents often are overlooked. Accurate and consistent temperature control can make all the difference in whether a plant is safe, within regulation, and profitable.

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