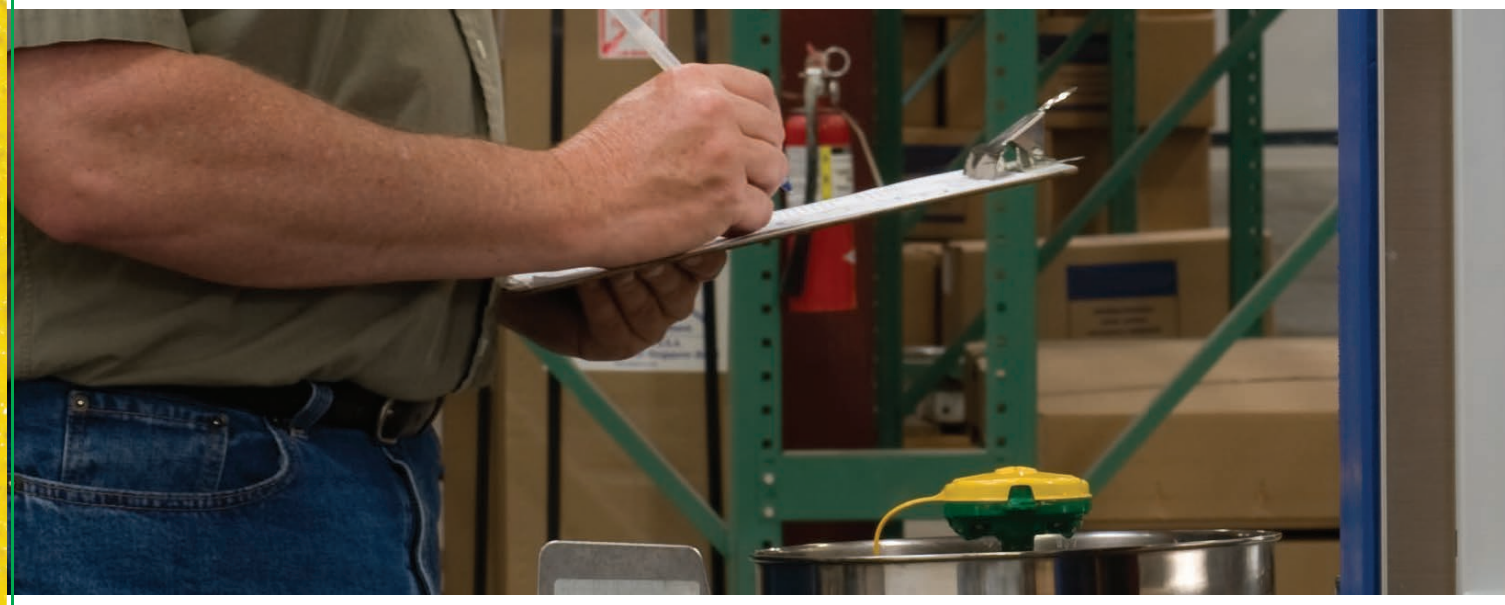
ANSWERS ABOUT ANSI



YOUR CHECKLIST FOR COMPLIANCE

Haws Integrated™

ENGINEERED SOLUTIONS® FOR SAFETY

ANSWERS ABOUT ANSI. YOUR CHECKLIST FOR COMPLIANCE.

By Casey Hayes
Director of Haws Integrated

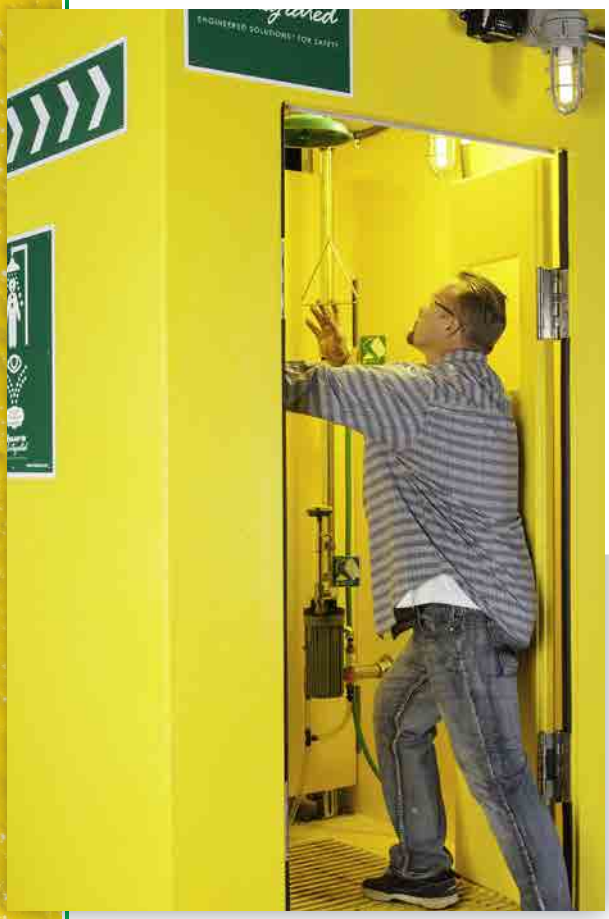
Workplace safety has seen impressive improvements over the past several decades due in part to evolving regulations that identify acceptable risk parameters, along with standards that address requirements for personnel safeguards and emergency response. To meet current safety standards, emergency showers and eyewashes have advanced to a new state-of-the-art. Recent innovations include enhanced water drench patterns, eyewash units designed to deliver inverted water flow for a medically superior wash, and advanced remote management enabled by System Infrastructure Management Applications (SIMA).

BETTER METHODS :: BETTER RESULTS

Current technology helps minimize injury associated with industrial chemical exposure.

Emergency shower and eyewash requirements – ***Location, Function, Maintenance*** – are identified in ANSI Z358.1–2009. In its current form, ANSI Z358.1 provides the most specific and useful guide for preparing to meet most workplace spill, splash and blown particulate incidents. This document provides an abbreviated checklist to help identify some of the significant requirements included in ANSI Z358.1; it is not intended to be an interpretation of the entire ANSI standard.

Current standards (ANSI Z358.1 sections 4.6.2 & 4.6.5) require weekly activation of emergency showers and eyewashes to confirm proper operation, along with a thorough annual inspection. Many companies opt to contract with outside firms for routine and annual inspections as an added measure of assurance and risk mitigation.



While ANSI Z358.1 establishes many additional requirements, the standards identified above are commonly overlooked. Each month, OSHA publishes a recap of noted violations and related fines levied against companies; financial penalties for non-compliance often begin at $100,000 and can exceed $1 million. However, a claim for excessive injury due to a non-compliant drench shower or eye/face wash presents significantly higher risk: incurring a $213,000 OSHA fine for a "blocked eyewash" is a small fraction of the risk exposure if an employee were permanently injured due to improper emergency response equipment.

COSTLY ERRORS

In today's "lawsuit lottery" business climate, even a rich imagination is no match for jury-based settlements.

The American National Standards Institute (ANSI) introduced tepid water as an emergency wash requirement in ANSI Z358.1-1998. ANSI further clarified tepid water standards in 2004 and identified a specific temperature range in 2009. Even though the most current ANSI standard dates to 2009, most emergency shower/eye/face wash units across North America do not yet comply with significant code provisions for tepid water.

Tepid water is essential for emergency shower/eye/face washes to provide medically suitable results. When drench water is outside of the required operating temperature, an injured worker is unlikely to utilize the full 15-minute wash cycle. A shortened cycle does not provide the thorough 15-minute rinse specified on most MSDS documents. Failing to rinse away chemicals and other contaminants causes prolonged worker exposure to injurious material causing more severe injuries and longer recovery times and hospital stays.

Why tepid water? If an emergency wash unit provides water that is too hot or too cold (above 100°F or below 60°F), an injured worker may be exposed to additional serious injury.

TOO HOT = SCALDED

If the water is too hot the biological response is for pores in the skin to open, potentially causing increased contaminant absorption. Excessively hot water may also cause severe scalding and trigger an increased chemical reaction, an example of this is the delicate eye tissue which can be damaged at temperatures above 105°F.

TOO COLD = HYPOTHERMIA

If the water is too cold, a worker exposed to hazardous material is unlikely to stay in long enough for a medically effective decontamination or may compound their chemical exposure with severe hypothermia.

JUST RIGHT = BEST RESULTS

ANSI Z358.1-2009 Standard for Emergency Eyewashes and Shower Equipment defines tempered (tepid) water as "A flushing fluid temperature conducive to promoting a minimum 15-minute irrigation period. A suitable range is 16-38°C (60-100°F)".

Today, simply providing emergency showers and eyewashes is not enough. It is necessary to inspect, test, and monitor emergency wash system readiness and performance. Each unit must be accessible, usable, and tepid-water equipped. Are you providing tepid water?

For more information on a full range of ANSI-compliant emergency shower/eye/face wash solutions and water tempering systems, visit www.HawsIntegrated.com.

To arrange for a detailed inspection of your emergency wash systems, call us at 888.640.4297.

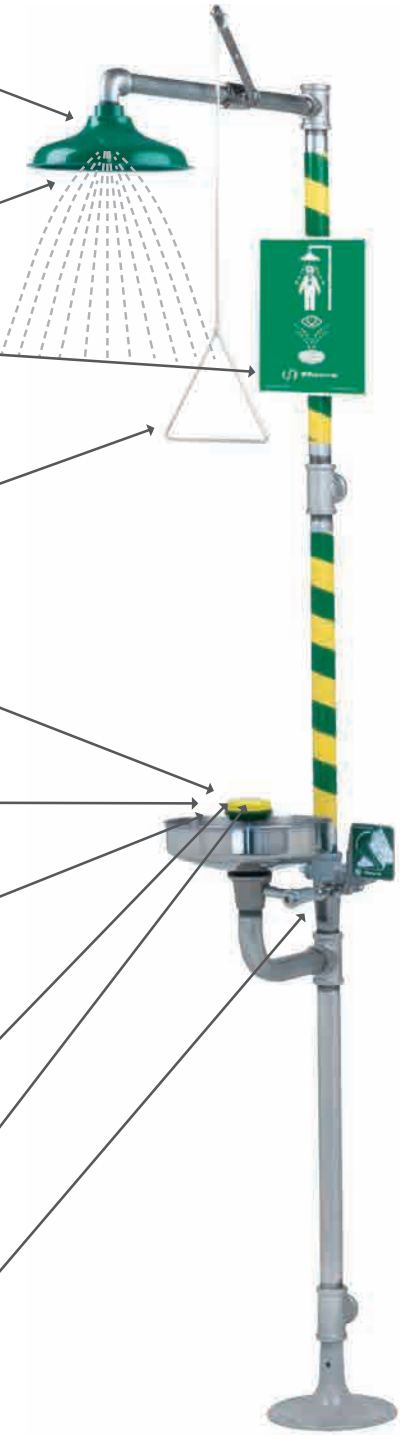
ANSI Z358.1 SAFETY EQUIPMENT
MINIMUM PERFORMANCE CHECKLIST

Testing Flow Pressure is 30 psi to 30.5 psi at the water inlet of the test unit.

- ☐ Safety station shall be accessible within 10 seconds of hazard. (Sec. 4.5.2, 5.4.2, 6.4.2, 7.4.2)
- ☐ Safety station shall be located on the same level as the hazard and the path of travel shall be free of obstructions. (Sec. 4.5.2, 5.4.2, 6.4.2, 7.4.2)
- ☐ All employees subject to exposure to hazardous material should be instructed in the location and proper use of emergency equipment. (Sec. 4.6.4, 5.5.4, 6.5.4, 7.5.4)
- ☐ Emergency equipment shall be activated weekly. (Sec. 4.6.2, 5.5.2, 6.5.2, 7.5.2) All shower units shall be inspected annually to assure conformance with ANSI Z358.1. (Sec. 4.6.5, 5.5.5, 6.5.5, 7.5.5)
- ☐ Combination unit components shall be capable of operating simultaneously and shall be positioned so that components may be used simultaneously by the same user. (Sec. 7.3, 7.4.4)
- ☐ Drench hose must deliver a controlled flow of flushing fluid at a velocity low enough to be non-injurious. (Sec. 8.2.1)
- ☐ A drench hose can only be considered an eyewash – eye/face wash if it meets performance requirements in Sec. 5 and/or 6.
- ☐ Deliver tepid flushing fluid.* (Sec. 4.5.6, 5.4.6, 6.4.6, 7.4.5)

  **Suggested temperature range – above 60°F (16°C) and below 100°F (38°C).*

- ☐ Showerhead must be 82 to 96 inches (208.3 cm - 243.8 cm) above surface floor of user. (Sec. 4.1.3, 7.1)
- ☐ Shower must deliver minimum of 20 gallons (75.7L) per minute and provide a column of water 20 inches (50.8 cm) wide at 60 inches (152.4 cm) above surface floor of user. (Sec. 4.1.2, 4.1.4, 7.1)
- ☐ Emergency equipment location shall be well lit and identified with a highly visible sign. (Sec. 4.5.3, 5.4.3, 6.4.3, 7.4.3)
- ☐ Valve shall be designed so that the flushing flow remains on without the use of the operator's hands. The valve shall be simple to operate and go from "off" to "on" in one second or less and actuator can not be more than 69 inches (173.3 cm) from surface floor of user. (Sec. 4.2, 7.2)
- ☐ Must provide a means of controlled flow to both eyes simultaneously at a velocity low enough to be non-injurious. (Sec. 5.1.1, 6.1.1, 7.1)
- ☐ Eye/face wash equipment must deliver minimum of 3 gallons (11.4 L) per minute of water for 15 minutes. (Sec. 6.1.6, 7.1) Eyewash only must deliver minimum of .4 gallon (1.5 L) per minute of water for 15 minutes. (Sec 5.1.6, 7.1)
- ☐ The flushing fluid of an eyewash – eye/face wash shall cover the areas between the interior and exterior lines of a gauge at some point less than 8 inches (20.3 cm) above the eyewash nozzle. (Sec. 5.1.8, 6.1.8, 7.1)
- ☐ Outlets shall be protected from airborne contaminants. (Sec. 5.1.3, 6.1.3, 7.1)
- ☐ Flushing fluid nozzles should be 33 to 45 inches (83.8 cm – 114.3 cm) from floor and minimum of 6 inches (15.3 cm) from wall. (Sec. 5.4.4, 6.4.4, 7.1)
- ☐ Valve shall be designed so that the flushing flow remains on without the use of the operator's hands. The valve shall be simple to operate and go from "off" to "on" in one second or less. (Sec. 5.2, 6.2, 7.2)



ANSI QUESTIONS

And Answers

1. Does OSHA use the ANSI standard?
OSHA requires the employer to provide suitable facilities for quick drenching or flushing of the eyes. While OSHA has not formally adopted ANSI Z358.1, they refer employers to the standard as a source of guidance. It is the employer's responsibility to assess the particular conditions related to the needs of the site to ensure the eye/face wash and shower unit(s) provide suitable protection for employees.

2. Does the annual testing require a full 15-minute flow?
Yes. The importance is to ensure tepid water throughout the full 15 minutes as well as maintaining the pressure and shower patterns.

3. What is the difference between an eye/face wash and just an eyewash?
An eyewash is specific to eyes, and the water flow rate is designed to hit only the eye surface, while an eye/face wash will cover the eyes and a portion of the face. In addition, an eyewash has a .4 gp minimum flow rate and an eye/face wash has a 3.0 gp minimum flow rate.

4. With the 2009 change to the ANSI standard, are existing eyewash, shower, and drench hose stations required to meet the guidelines?
Yes. There is no grandfather clause in the Z358.1 Standard that allows equipment to be exempt. As the standard changes, existing shower equipment needs to be updated.

5. Does the simultaneous requirement for shower activation apply to multiple stations?
Those responsible for the health and safety of the area will determine what the potential is for an accident and how many people could be exposed. Once that number is determined, a system is designed for that number of showers and eyewashes to run simultaneously. Example: if a facility has ten showers within a specific area and are required to have two running at the same time, then two showers must be designed to simultaneously activate properly.

6. Are there guidelines for placement of eye/face wash stations within a building?
The ANSI standard states that the eye/face wash needs to be 10 seconds away from where an accident could occur and needs to be on the same level with no obstructions.

7. Is there a distance conversion?
The current ANSI Standard states that the drench equipment must "be in accessible locations that require no more than 10 seconds to reach." The appendix of the ANSI Z358.1 - 2009 Standard clarifies by stating "that the average person covers a distance of approximately 55 feet in 10 seconds."

8. Is it a requirement to change out the old Haws eye/face wash heads with AXION MSR™ heads?
The standard today does not state how to flush the eyes, but that there must be individual flows that go into each eye to remove contaminants. Haws Corporation® re-engineered the eyewash to be *Medically Superior* with AXION®. The medical industry demonstrates that the correct way to irrigate your eyes is from the inside-out, not from the outside-in. Irrigating from the outside-in has the potential to introduce the chemicals into the nasal cavity which can then be pushed into lungs and cause further internal damage. We recommend that non-AXION equipment be upgraded. *Haws* offers an AXION Advantage™ upgrade kit. Learn more at www.AxionAdvantage.com.

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