1. With the recent revisions 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.

2. 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 eyewash and shower units provide suitable protection for employees.

3. 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.

4. 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 GPM (1.5 LPM) minimum flow rate and an eye/face wash has a 3.0 GPM (11.4 LPM) minimum flow rate.

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. For strong acid or strong caustic, the emergency equipment should be immediately adjacent to the hazard.

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 Standard clarifies by stating “that the average person covers a distance of approximately 32 feet (10 m) 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 dictate 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. Now offer an AXION Advantage™ upgrade kit. Learn more at www.AxionAdvantage.com.

ANSI Z358.1 SIMPLIFIED
YOUR CHECKLIST FOR EMERGENCY EYEWASH and SHOWER COMPLIANCE

HAWKS INTEGRATED™
Your Complete Safety Response
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Emergency shower and eyewash requirements – Location, Function, Maintenance – are identified in ANSI Z358.1 Standard. In its current form, ANSI Z358.1 provides the most specific and useful guide for preparing to meet workplace splatter and blastotive 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 checklists to help identify some of the significant requirements included in ANSI Z358.1; it is not intended to be a complete list of all significant code provisions.

Emergency equipment shall be located within 10 seconds of the hazard and shall be accessible, usable, and equipped with tepid water. A shortened cycle does not provide the thorough 15-minute rinse required for effective decontamination or may compound their effects and 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 100°F.

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 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 100°F.

TOO COLD = HYPOTHERMIA

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

JUST RIGHT = BEST RESULTS

Tepid water is essential for emergency shower/eye/face washes to provide medially suitable results. When drenching tools are outside of the required operating temperature, an injured worker is unlikely to utilize the full 15-minute wash cycle. A shorter cycle may result in the through the 15-minute time specified on most MSDS documents. Rolling to allow access to 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 49°F, an injured worker may be subjected to additional serious injury.

TOO HOT = SCALDED

TOO COLD = HYPOTHERMIA

Tepid water is essential for emergency shower/eye/face washes to provide medically suitable results. When drenching emergency equipment outside of the required operating temperature, a worker is unlikely to utilize the full 15-minute wash cycle. A shorter cycle may not provide the thorough 15-minute rinse required for effective decontamination or may compound their effects and 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 100°F.

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

Tepid water is essential for the emergency eyewash/face wash to provide medically suitable results. When drench water is outside of the required operating temperature range, an injured worker is unlikely to utilize the full 15-minute wash cycle. A shortened cycle (not to exceed the 15-minute rinse as specified in most MSDS documents) flying to line chemicals and other contaminants causes prolonged exposure to injurious materials 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.

**COMBINATION UNIT**

Combination unit components must be capable of operating simultaneously and shall be considered an eyewash – eye/face wash if it meets performance requirements in Sec. 5 and/or 6. A drench hose can only be used simultaneously by one person at a time and shall be positioned so that components are positioned so that components are capable of operating simultaneously. (Sec. 4.6.4, 5.5.4, 6.5.4, 7.5.4)

**EYEWASH / EYE/FACE WASH**

Eye/face wash equipment must deliver a controlled, directed stream of fluid at a velocity low enough to be effective decontamination or may compound their chemical exposure with severe hypothermia.

**TEMPERATURE**

- If the water is too hot the biological response is for pores in the skin to open, potentially causing increased contamination.
- Excessively hot water may also cause severe scaling and trigger increased chemical reactions, for example, alkali drench eye lining, which can be damaged at temperatures above 100°F.
- If the water is too cold the biological response is for pores in the skin to close, potentially reducing contamination.

**SHOWER**

Shower equipment must deliver a controlled, directed stream of fluid at a velocity low enough to be effective decontamination or may compound their chemical exposure with severe hypothermia.

**LOCATION SHOWER**

Emergency equipment shall be designed so that the flushing fluid pattern should be capable of operating simultaneously and shall be positioned so that components are capable of operating simultaneously. (Sec. 4.1.3, 7.1)

**EQUIPMENT INSTALLATION**

Emergency equipment shall be easily visible and go from "off" to simple to operate and go from "off" to simple to carry on without the use of the operator's hands. The valve shall be positioned so that the path of travel shall be free of obstructions and shall be located at a minimum of 6 inches (15.3 cm) from wall. (Sec. 4.5.2, 5.4.2, 6.4.2, 7.4.2)

**TEMPERATURE**

- The flushing fluid temperature for an eyewash – eye/face wash shall cover the areas between 33 to 53 inches (83.8 cm – 134.6 cm) above the surface floor of user. (Sec. 4.2, 7.2)
- The actuator can not be more than 69 inches (173.3 cm) from the surface floor of user. (Sec. 4.2, 7.2)
- The drench hose can only be considered an eyewash – eye/face wash if its position is capable of operating simultaneously. (Sec. 4.6.4, 5.5.4, 6.5.4, 7.5.4)

**GENERAL**

- The equipment shall be located within (100o F (38o C)).
- The minimum operating temperature range for a shower shall be 20°F to 120°F (10°C to 49°C).
- The actuator can not be more than 69 inches (173.3 cm) above the floor of the user. (Sec. 4.2, 7.2)
- The water must deliver a controlled, directed stream of fluid at a velocity low enough to be effective decontamination or may compound their chemical exposure with severe hypothermia.
ANSI Z358.1: YOUR CHECKLIST FOR COMPLIANCE
By Casey Haynie
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 personal safeguards and emergency response. Recent innovations include enhanced water delivery patterns, eyewash units designed to deliver inverted water flow for a medically superior wash, and advanced remote management.

**BETTER METHODS – BETTER RESULTS**
Current technology helps minimize injury associated with industrial chemical exposure.

Emergency shower and eyewash requirements in IFC – Location, Function, Maintenance – are identified in ANSI Z358.1 Standards. This reflects the most specific and useful guide for preparing to manage workplace spill, splash and participate 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 4.6.3.6.4.6.5) require weekly activation of emergency showers and eyewashes to confirm proper operation and function, along with thorough annual inspections. 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 $15,000 and can exceed $1 million; however, a claim for excessive injury due to a non-compliant emergency shower or eyewash that presents significant higher life risk, including a $13,000 OSHA fine for a “blocked eyewash” is a small fraction of the risk exposure. Excessively hot water may also cause severe scalding and trigger an increased chemical reaction, an example of the deadly eye injury which can be damaged at temperatures above 100°F.

**COSTLY ERRORS**
In today’s “New Millenial” business climate, even a slightly imagination is no match for jury-based settlements.


### TEPID WATER
Tepid water is essential for the emergency Eyewash/shower/face washers to provide medically suitable results. When drench water is outside of the required operating temperature range, an injured worker is unlikely to utilize the full 15-minute wash cycle. A shortened cycle (that must provide the through-flow in a time specified in most MSDS documents. Failing to line-awash chemicals and other contaminants causes prolonged 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’s too hot or too cold (above 100°F or below 60°), an injured worker may be exposed to additional thermal injury.

**TOO HOT = SCALDING**
If the worker is too hot the biological response is for pain in the skin, potentially causing increased compartmentalization. Excessively hot water may also cause severe scalding and trigger an increased chemical reaction, an example of the deadly eye injury which can be damaged at temperatures above 100°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 hypothermias.

### JUST RIGHT = BEST RESULTS
ANSI Z358.1 Standard for Emergency Eyewashes and Shower Equipment defines tepid (tepid) water as

- A flushing fluid temperature conducive to promoting a minimum 15-minute wash cycle and suitable range is 16°C to 28°C (60°F-82°F).

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

To arrange for a detailed inspection of your emergency wash systems, contact Haws Integrated, 800-429-297.

**ANNUAL MINIMUM PERFORMANCE CHECKLIST**

**LOCATIONS**

- All shower units shall be inspected annually to assure conformance with ANSI Z358.1.
- Recommended baseline flow pressure is 20 psi (- 1.3 MPa).

**SHOWER**

- Pressure shall be adequate to deliver sufficient flow and water temperature.
- Showerheads must be installed within (3.15) of the eye/face wash for effective flushing.
- Flow shall be a continuous flow with a velocity low enough to be effective decontamination.
- Face wash shall cover the areas between the eyes, over the nose, and shall be well lit and identified.
- Eyewash only must deliver minimum of 0.40 L (0.44 quarts) per minute.

**TEMPERATURE**

- Recommended temperature is 16°C to 28°C (60°F-82°F).
- Recommended maximum temperature is 40°C (104°F). Flow remains on without the use of the actuator.

Please note that Haws Corporation manufacturers and supplies emergency equipment and is not licensed or accredited as a health and/or safety specialist. Accordingly, if you have any questions or need help determining the suitability of any Haws equipment, please contact us. Haws Corporation assumes no responsibility for compliance with the precautionary measures described in the product literature, if they do not conform to the user’s equipment or if the user’s equipment procedures differ from the requirements described in the literature.
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   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.

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   Yes. The importance is to ensure tepid water throughout the full 15 minutes as well as maintaining the pressure and shower patterns.

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   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 GPM (1.5 LPM) minimum flow rate and an eye/face wash has a 3.0 GPM (11.4 LPM) minimum flow rate.

5. Does the simultaneous requirement for shower activation apply to multiple stations?
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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. For strong acid or strong caustic, the emergency equipment should be immediately adjacent to the hazard.

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   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 Standard clarifies by stating “that the average person covers a distance of approximately 32 feet (10 m) in 10 seconds.”

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ANSI Z358.1 SIMPLIFIED

FREQUENTLY ASKED QUESTIONS

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