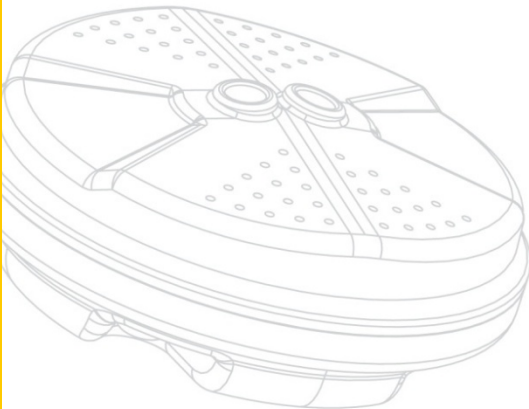


ANSI Z358.1

HAWS CORPORATION



Overview for Compliance:
ANSI Z358.1 Emergency Shower and Eye/
Face Wash Standard

TENAQUIP

OCCUPATIONAL HEALTH AND SAFETY

Today's Topics

Who is Haws®?

ESEW Statistics and Regulation

ANSI Z358.1 Significant Requirements

Knowing Your Current State

Medical Community Alignment

Equipment Options

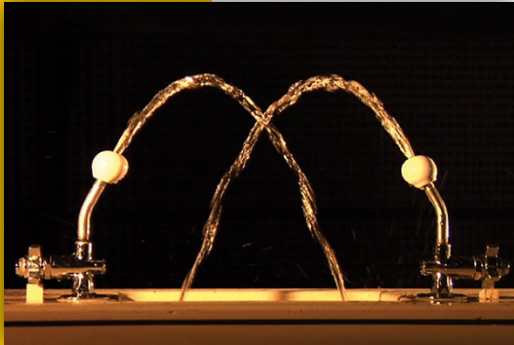
Additional Training Opportunities

WHO IS HAWS® AND WHAT DO WE DO?



Luther Haws built a drinking fountain in 1906 and that led to....

- Emergency Equipment in 1950's
- Engineered Tepid Water Systems and Enclosures
- Oil and Gas, Mining, Heavy and Light Industrial Markets
- Education, Municipal and Healthcare Facilities



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CANADIAN SUPPORT



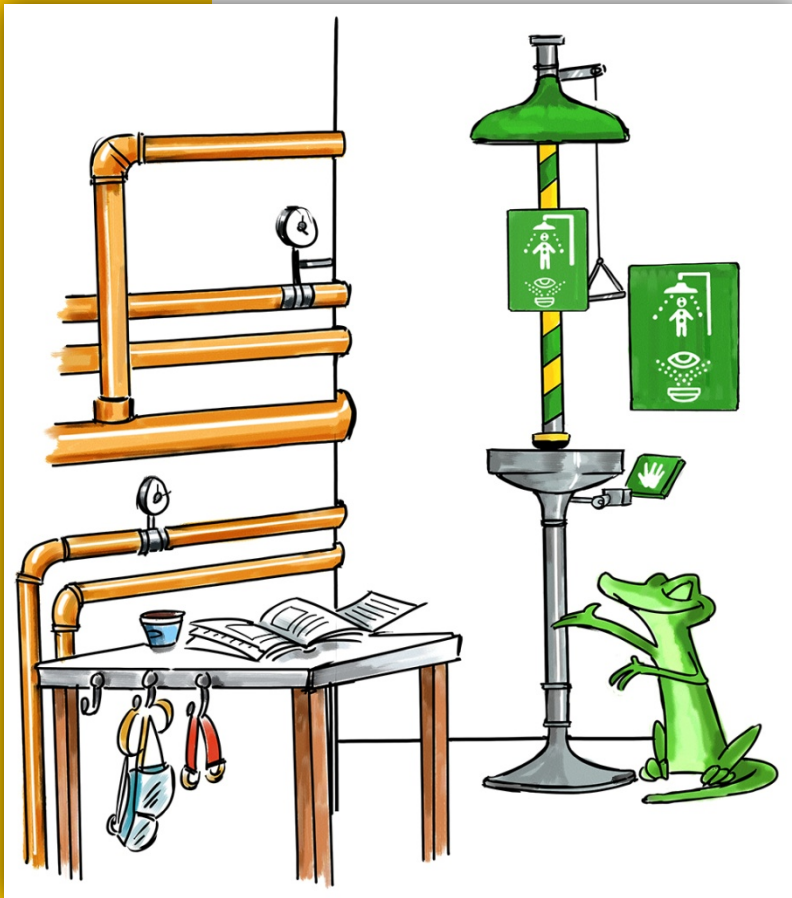
- Technical and Sales Representation in every province
- Canadian warehousing with availability through Tenaquip

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WHY IS IT IMPORTANT TO COMPLY WITH THE ANSI STANDARD?



PREVENTION

- Injury/fatalities
- General workplace risk
- Lost time/money

Provinces have stepped up enforcement, particularly for employers who have a history of serious or repeated violations.

Go Home Safe Every Day

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RESEARCH FINDINGS

12.5% vs 63%

7.5% vs 20.5%

*University of Wisconsin, School of Engineering Study

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RESEARCH FINDINGS

9.5% with
20.1% without

19% versus 36%

*University of Wisconsin, School of Engineering Study

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REGULATION



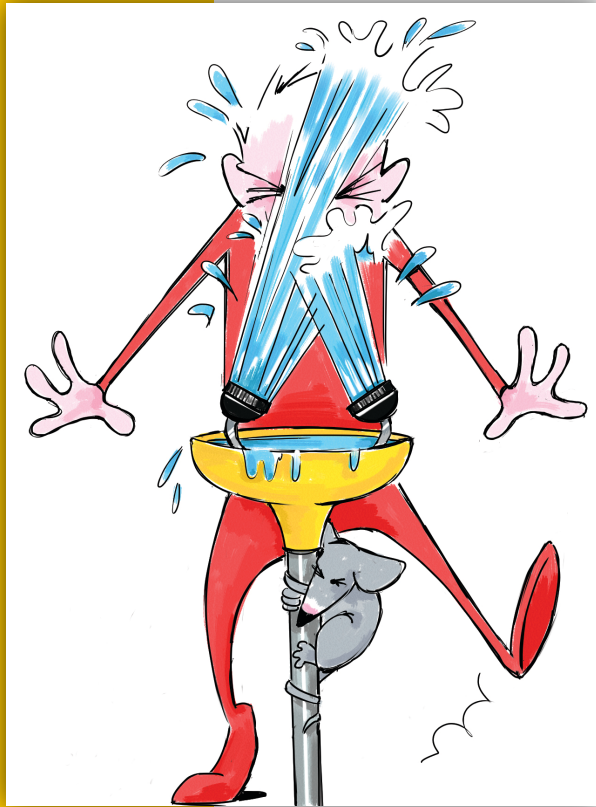
- **CCOHS references ANSI**
- Each Province has unique regulations
- There is a difference between the Act, the Regulation, and the Guideline
- **Regulation / Guideline references ANSI which allows for Provincial enforcement**
- Safety data sheets and risk determine product — it's the employer's responsibility!
- CSA references OSHA (which **REQUIRES** ANSI)

REGULATION

It is the employers responsibility to understand and comply with the regulations within their province.



WHAT IS THE ANSI Z358.1 STANDARD?



- First published 1981
- Revised 1990, 1998, 2004, 2009, and 2014

2009 Revision Includes:

- Temperature range for water delivery
- Simultaneous use
- Eyewash testing requirements

2014 Revision Includes:

- Design, manufacture and installation of emergency showers
- Equipment installation location
- Adjusted measurements

WHAT ARE THE SIGNIFICANT REQUIREMENTS?

Emergency Eye/Face Washes, Showers, and Combination Units *MUST*:

- Be accessible within 10 seconds
- Be located on the same level as the hazard
- Be free of obstructions



WHAT ARE THE SIGNIFICANT REQUIREMENTS?

Emergency Eye/Face Washes, Showers, and Combination Units *MUST*:

- Be identified with highly visible signage
- Go from “off” to “on” in one second or less
- Deliver flushing fluid for a full 15 minutes



WHAT ARE THE SIGNIFICANT REQUIREMENTS?



Emergency Eye/Face Washes, Showers, and Combination Units **MUST:**

Provide a **controlled flow** of flushing fluid at a velocity low enough to be **non-injurious** to the user.

WHAT ARE THE SIGNIFICANT REQUIREMENTS?



Eyewashes

Flow must deliver a minimum of .4 gallons per minute (1.5 liters)

Eye/Face Washes

Flow must deliver a minimum of 3 gallons per minute (11.4 liters)

Drench Showers

Flow must deliver a minimum of 20 gallons per minute (75.7 liters)

Combination Units

Must provide sufficient pressure and volume to either eyewash or eye/face wash flow simultaneously with shower flow

WHAT ARE THE SIGNIFICANT REQUIREMENTS?

Eyewashes & Eye/Face Washes

Flushing fluid shall cover the areas between the interior and exterior of a gauge at some point less than 8 inches (20.3 cm) above the eyewash nozzle.



WHAT ARE THE SIGNIFICANT REQUIREMENTS?



ALL

- Eyewashes
- Eye/Face Washes
- Combination Eye/Face Wash & Shower Units

MUST deliver tepid flushing fluid between 60° F - 100° F (16° C - 38° C)

75% of ophthalmologists say that having tempered water is very important, citing it increases the chances that a victim can tolerate the 15-minute flush required.

AXION® Ophthalmologist Study Quantitative Report
Zeldis Research Associates, April 2014

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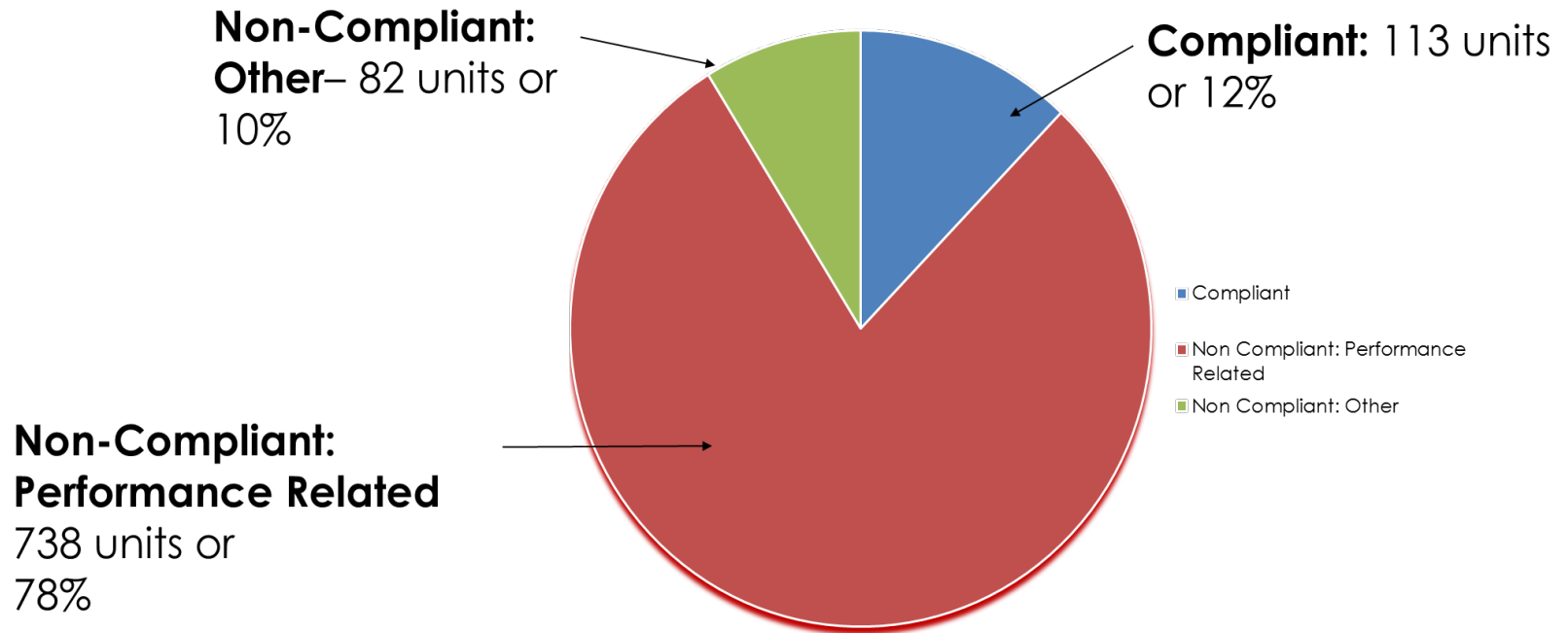
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REVISIONS & APPENDIX INFO

- A single step up into an enclosure where the equipment can be accessed is not considered to be an obstruction.
- Personal Wash Units are supplemental.
- Appendix info
 - Waste Disposal
 - Valve Operation and Alarm Devices
 - Placement of Equipment
 - Delivery of Flushing Fluid Temperature
 - Weekly Activation for Plumbed Equipment

KNOWING YOUR CURRENT STATE



KNOWING YOUR CURRENT STATE

Common Causes of Non-Compliance

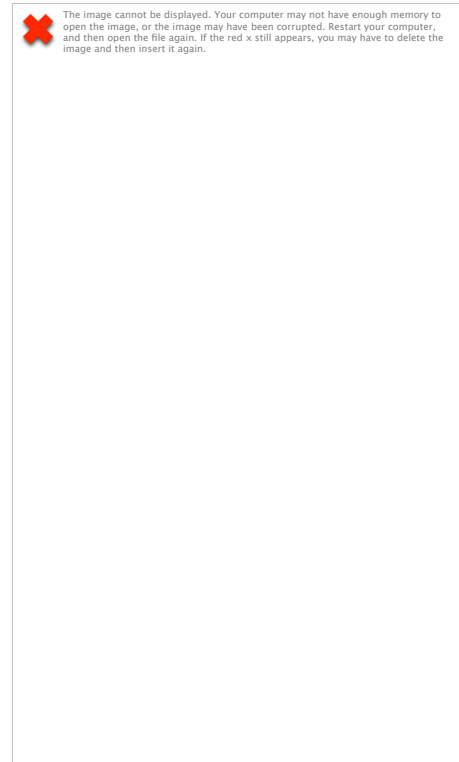
- Obstructed access
- Missing or inoperable parts
- Incorrect installation
- Insufficient flow
- Non-tepid flushing fluid



KNOWING YOUR CURRENT STATE

Common Causes of Non-Compliance

- Too much flow
- No dust covers
- Lack of signage
- Fails simultaneous use



KNOWING YOUR CURRENT STATE



COMPLIMENTARY ANSI EMERGENCY SHOWER AND EYEWASH SURVEY

INSPECTION REPORT (PDF):

Fully detailed report on each piece of equipment and its current status.

EXECUTIVE SUMMARY CHART:

Comprehensive overview of findings.

RECOMMENDATIONS:

Detailed summary of key observations, potential root causes, and recommendations.

DEBRIEFING MEETING/WEB CONFERENCE:

Interactive meeting to discuss proposed solutions and best practices.

KNOWING YOUR CURRENT STATE

Benefits to Site

1. Mitigate risks
2. Compliance with ANSI requirements
3. Improved safety & “readiness” of equipment
4. Improved reliability reduces equipment maintenance
5. Properly trained survey inspectors
6. Upgrade to new technology at a fraction of the cost (*no need to replace complete units*)

ALIGNMENT WITH MEDICAL COMMUNITY

New Specifications and Retrofits to Existing Equipment

- Inverted streams wash from the inside out
- Retrofits to existing equipment
- Addition of tempering units and controls
- Movement to **eye/face wash** vs **eyewash**
- Flushing inside to out is preferred **4 to 1**
- 86% of ophthalmologists said comfortable water pressure is **VERY** important



AXION MSR – Medically Superior Response®

Doctors recommend **AXION** for eye/face wash victim comfort



INJURY REDUCTION

Inverted water streams gently flush contaminants away from glands surrounding the eye

VICTIM COMFORT

Laminar flow water streams provide no disruption between water layers allowing for consistent pressure and water lines at a predictable stream height



CLEAN FLUSHING FLUID

In-line strainer collects debris to help guarantee the flush fluid is not aggravating an injury

COMPLETE ANSI COMPLIANCE

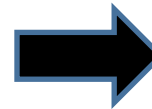
All AXION MSR products contribute to, comply and exceed the important ANSI Z358.1 requirements

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OCCUPATIONAL HEALTH AND SAFETY



AXION MSR – Medically Superior Response®



PLUMBED EYE/FACE WASH UNITS

Wall mounted, deck mounted or floor mounted



- **Model 7260B-7270B:** Wall-mounted eye/face wash with ABS plastic bowl
- **Model 7610:** Deck-mounted, pull-down eye/face wash common in labs and near sinks
- **Model 7611:** Deck-mounted, swing-in eye/face wash
- **Model 7655WCC:** Barrier-free, recessed-mount eye/face wash
- **Model 9102:** SS dust cover keeps the bowl clean and can be added to most units (*Haws* and other)

PLUMBED SHOWER UNITS

Typically sold as part of a combination with face wash

Haws AXION Showers can also be independent and available with flush ceiling mount options.



- **Model 8300-8309:** Popular galvanized combo unit with stainless steel eye/face wash bowl
- **Model 8317CTFP:** Freeze-protected and insulated for colder outdoor locations
- **Model 8330:** All stainless steel combination for high-corrosion environments

Models are also available in wheelchair accessible versions.

STANDALONE & PORTABLE UNITS

Potable water is more convenient than cartridges



Haws recommends potable water with a bacteriostatic additive. Cartridge units can't be tested, are costly when used, and require dated inventory storage.

- **Model 7501:** 9-gallon wall-mounted eyewash with or without freeze protection
- **Model 7500:** 16-gallon wall-mounted eyewash with or without freeze protection
- **Models 7601 & 7602:** Air-charged units with body hoses ASME Certification available in 13, 15 or 37 gallon
- **Model 9082:** Sterile bacteriostatic additive



ANSI Z358.1
COMPLIANT

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FAUCET-MOUNTED EYEWASH

An extremely popular ANSI compliant solution



Installs onto gooseneck faucets. Provides AXION delivery in a clean, simple, hygienic design.

- Designed with thermostatic safety valve that ensures water remains under the ANSI 100F limit. **Competitive units don't offer this.**
- Includes common adapters.
- Very popular in healthcare, education, food service, and light industrial applications
- Does not impact the use of the sink!
- Includes a free ANSI required sign.



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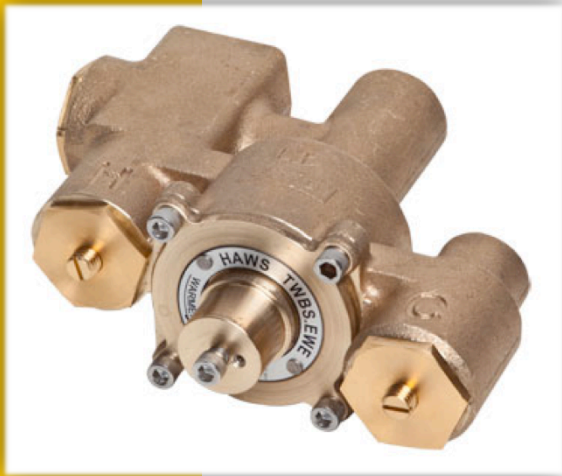
MIXING VALVES

INDUSTRIAL VALVES



EMERGENCY VALVES

- ASSE 1071 & CSA B125.3 certified
- Wax filled thermostat – 10X faster response



- Smaller and lighter than traditional valves
- Increased flows, lower pressure drops
- 100% hot water shut-off at cold water failure
- 100% cold water bypass at hot water failure

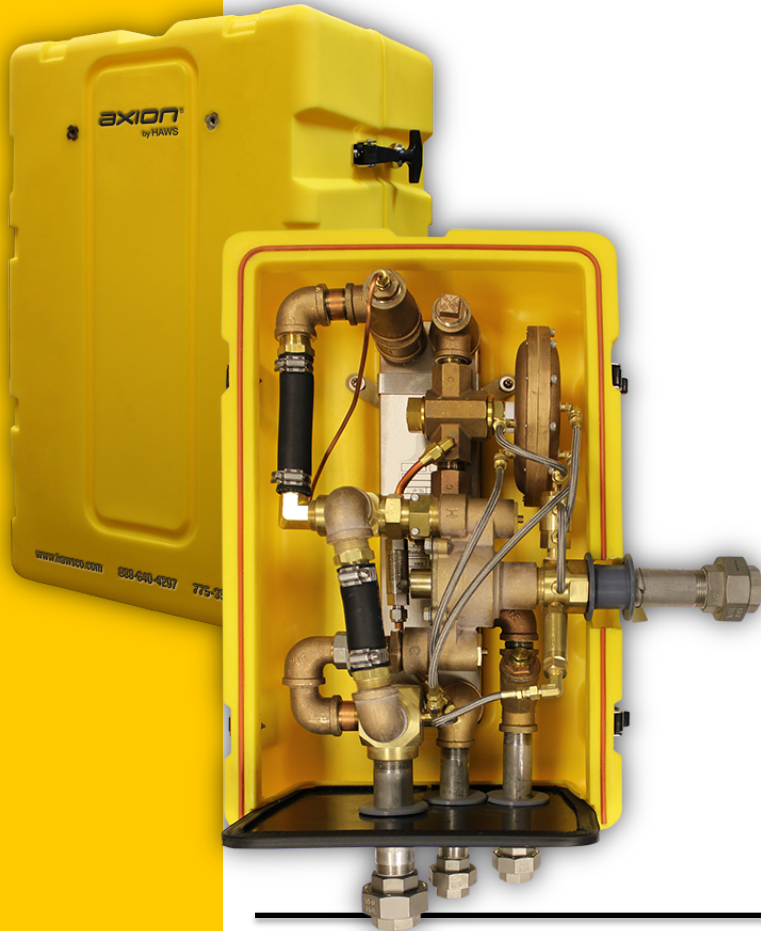
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AXION[®] STEAM WATER HEATER (#9400)

Only Steam Water Heater available on the market



Uses existing plant steam and water supply to provide ANSI compliant tepid water.

- Instantaneous tepid water
- Lightweight polyethylene enclosure
- Maintains constant 85° F (29° C) output
- Freeze and scald protection
- Conforms to OSHA and ANSI recommendations

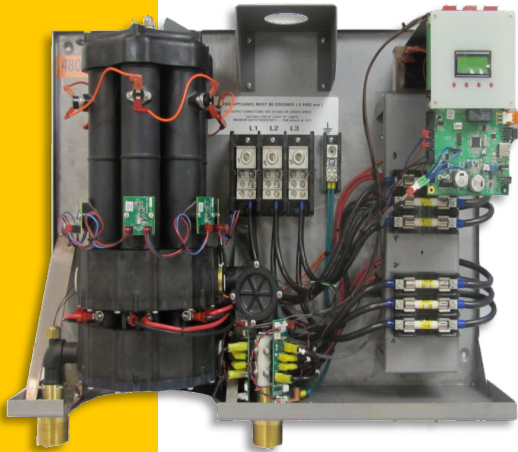
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AXION® INSTANTANEOUS TEMPERING (#9326)

Instant and continuous tempered water



- Six parallel heating chambers with pressure balancing cap
- Modular Heating Chamber Assembly
- Dry Fire and Overheating Protection
Thermo-Optical Sensor
Electronic Cut Off
- Predictive Control Algorithm
- Control Board with Digital Read-Out
and Controls

WATER STORAGE SOLUTIONS

Standalone tepid or hot water to mix with cold



Components

- Skid mounted
- Immersion heater reliability
- Hot water tank / Warm water tank
- Expansion tank
- Recirculation options
- ASME/CRN
- Volume options depending on system requirements/design

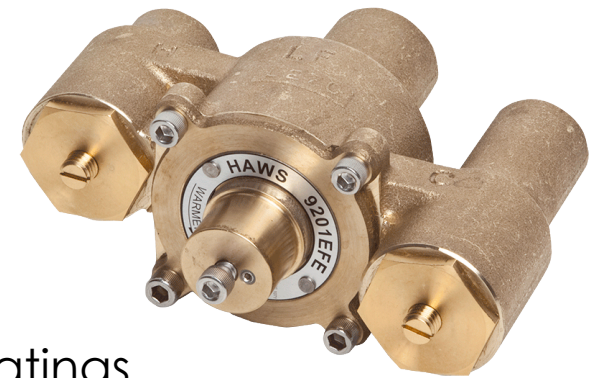
ACCESSORIES and OPTIONS

There's more than just the showers to think about



Showers and eye/face washes are typically part of a system. There are accessories and options that may need to be considered.

- Alarm systems
- Tempering valves
- Foot treadles
- Corrosion protective coatings
- PVC piping
- Polished metal and other custom options



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