Guardian

EMERGENCY EYEWASH & SHOWER TECHNOLOGY

ANSI / ISEA Z358.1-2014 Compliance Checklist

INTRODUCTION

The selection of emergency eyewash and shower equipment is often a complicated process. In addition to addressing design and engineering issues, specifiers must be aware of regulatory requirements and compliance standards. A common reference point when selecting emergency equipment is ANSI/ISEA Z358.1, "Emergency Eyewash and Shower Equipment." This standard is a widely accepted guideline for the proper selection, installation, operation and maintenance of emergency equipment.

To assist specifiers in understanding the provisions of this standard, Guardian Equipment has prepared this ANSI Compliance Checklist. In this Checklist, we have summarized and graphically presented the provisions of the standard. This Checklist can serve as a starting point for designing emergency eyewash and shower systems.

LEGAL REQUIREMENTS

The Occupational Safety and Health Act of 1970 was enacted to assure that workers are provided with "safe and healthful working conditions." Under this law, the Occupational Safety and Heath Administration (OSHA) was created and authorized to adopt safety standards and regulations to fulfill the mandate of improving worker safety.

OSHA has adopted several regulations that refer to the use of emergency eyewash and shower equipment. The primary regulation is contained in 29 CFR 1910.151, which requires that...

"...where the eyes or body of any person may be exposed to injurious corrosive materials, suitable facilities for quick drenching or flushing of the eyes and body shall be provided within the work area for immediate emergency use."

ANSI Z358.1

The OSHA regulation regarding emergency equipment is quite vague, in that it does not define what constitutes "suitable facilities" for drenching the eyes or body. In order to provide additional guidance to employers, the American National Standards Institute (ANSI) has established a standard covering emergency eyewash and shower equipment. This standard—ANSI Z358.1—is intended to serve as a guideline for the proper design, certification, performance, installation, use and maintenance of emergency equipment. As the most comprehensive guide to emergency showers and eyewashes, it has been adopted by many governmental health and safety organizations within and outside the US, as well as the Uniform Plumbing Code (UPC) and International Plumbing Code (IPC). The ANSI standard is part of the building code in locations that have adopted the International Plumbing Code. (IPC-Sec. 411)

ANSI Z358.1 was originally adopted in 1981. It was revised in 1990, 1998, 2004, 2009 and again in 2014. This Compliance Checklist summarizes and graphically presents the provisions of the 2014 version of the standard.

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GENERAL CONSIDERATIONS

ANSI Z358.1- 2014 contains provisions regarding the design, certification, performance, installation, use and maintenance of various types of emergency equipment (showers, eyewashes, drench hoses, etc.). In addition to the provisions in the standard, there are additional considerations that are not part of the standard. We believe that these considerations should also be addressed when considering emergency equipment. These include the following:

1. FIRST AID DEVICES

Emergency eyewash and shower units are designed to deliver water to rinse contaminants from a user's eyes, face or body. As such, they are a form of first aid equipment to be used in the event of an accident. However, they are not a substitute for primary protective devices (including eye and face protection and protective clothing) or for safe procedures for handling hazardous materials.

2. LOCATION OF EMERGENCY EQUIPMENT

In general, the ANSI standard provides that emergency equipment be installed within 10 seconds walking time from the location of a hazard (approximately 55 feet) (Appendix B5). The equipment must be installed on the same level as the hazard (i.e. accessing the equipment should not require going up or down stairs or ramps). The path of travel from the hazard to the equipment should be free of obstructions and as straight as possible.

However, there are certain circumstances where these guidelines may not be adequate. Previous versions of the standard expressly provided that, where workers are handling particularly strong acids, caustics or other materials where the consequences of a spill would be very serious, emergency equipment should be installed immediately adjacent to the hazard. Although Appendix B5 of the 2014 standard briefly reviews the proper location of emergency equipment under such scenarios, we still believe the previous versions of the standard to be correct.

Laboratory environments may also require special consideration. It has been common in many laboratory buildings to install emergency equipment in a corridor or hallway outside of the lab room. Since a door is considered an obstruction, this violates the provisions of the standard. For laboratory environments, we recommend installing (i) recessed laboratory eyewash/shower cabinets inside the lab room and (ii) dual purpose eyewash/drench hose units at lab sinks (see page 8). The recessed cabinet units are a space saving design that satisfy the standard's requirements for both a shower and an eye/face wash, and are wheelchair accessible, while the eyewash/drench hoses provide immediate protection for the eyes, face or body when a spill involves a relatively small amount of hazardous material.

3. WATER TEMPERATURE

The 2014 version of the standard states that the water temperature delivered by emergency equipment should be 'tepid.' Tepid is defined to be between 60°F (16°C) and 100°F (38°C). However, in circumstances where a chemical reaction is accelerated by flushing fluid temperature, a facilities safety/health advisor should be consulted to determine the optimum water temperature for each application.

The delivery of tepid water to emergency equipment may raise complicated engineering issues. At a minimum, it generally involves providing both hot and cold water to the unit, and then installing a mixing valve to blend the water to the desired temperature. Guardian offers a variety of mixing valves and turnkey, recirculating tempering systems to provide tempered water. Please contact our office for further information.

4. SHUT OFF VALVES

Plumbed emergency equipment must be connected to a potable water supply line. It may be advisable to install a shut off valve on the water line, upstream of the unit, to facilitate maintenance of the equipment. If a shut off valve is installed, provision must be made to prevent unauthorized closure of the shut off valve. (Sections 4.1.2, 4.5.5, 5.1.6, 5.4.5, 6.1.6, 6.4.5, 8.2.3.3) Such provision can include removing the handle of the shut off valve or locking the valve in the open position. Only maintenance personnel should be authorized to place a handle on or unlock the valve.

5. CORROSION RESISTANCE

Once connected to a water supply line, water will enter the emergency equipment and stand in the unit up to the valve(s). When activated, water will flow through the entire unit. Therefore, the unit must be constructed of materials that will not corrode when exposed to water for extended periods of time. (Sections 4.1.6, 5.1.5, 6.1.5) In addition to this general provision, the standard specifically requires that valves be resistant to corrosion. (Sections 4.2, 5.2, 6.2, 8.2.2) Emergency equipment should therefore be constructed of materials that will resist rusting and corrosion. Materials that are considered

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acceptable for this purpose include brass, galvanized steel and many types of plastics (ABS, nylon, etc.). However, these materials may not provide durable service when exposed to harsh industrial conditions, may deteriorate in direct sunlight or be subject to other limitations. Therefore, for maximum durability, the following materials should also be considered:

- Epoxy coated galvanized steel
- Epoxy coated brass
- Stainless steel
- PVC

6. FREEZING

There are many applications where emergency equipment must be installed in areas that are subject to freezing conditions. Such areas may include any type of outdoor area (bulk material handling facility, tank farm, etc.), as well as some interior areas (loading docks, low temperature facilities, etc.). In these cases, the emergency equipment must be protected against freezing (Sections 4.5.5, 5.4.5, 6.4.5, 7.4.4, 8.2.3.3). Equipment that is designed and manufactured to be freeze-resistant should be installed. There are a number of different types of freeze-resistant equipment, including:

- Units that have a temperature actuated bleed valve that permits water to flow through the unit when the temperature drops below freezing. These units are generally used only where the possibility of freezing is very infrequent.
- Units on which the valve is mounted behind a wall or buried below the frost line and is remote-activated.
- Combination units that are electrically heated (heat-traced) and insulated.
- Units that have a heated enclosure to fully contain and protect both the equipment and the user.

7. DISPOSAL OF WATER

The standard does not include any specific provisions regarding the disposal of waste water (Appendix A3). However, designers must give consideration to where waste water will go. In particular, care must be taken that waste water not create a hazard (i.e. by creating a pool in which someone might slip) or freeze.

Generally, Guardian eyewash, eye/face wash and safety station units are designed with waste connections for connection to drain piping. **WE RECOMMEND THAT EMERGENCY EYEWASH AND SHOWER UNITS BE CONNECTED TO DRAIN PIPING. FOR EMERGENCY SHOWERS AND FOR OTHER UNITS WITHOUT WASTE CONNECTIONS, FLOOR DRAINS SHOULD BE PROVIDED.**

After an emergency eyewash or shower unit has been used, the waste water may contain hazardous materials that cannot or should not be introduced into a sanitary sewer. It may be necessary to connect the drain piping from the emergency equipment or floor drain to the building's acid waste disposal system or to a neutralizing tank.

8. EMERGENCY RESPONSE

Simply installing emergency equipment is not sufficient to assure worker safety. Employees must be trained in the location of emergency equipment and in its proper use. Emergency equipment must be regularly maintained (including weekly activation of the equipment) to assure that it is in working order and inspected at least annually for compliance with the standard. Most importantly, employers should develop a response plan to be used in the event that an accident does occur. The focus of the response plan should be to provide assistance to the injured worker as quickly as possible.

Guardian offers a variety of alarm systems that may be installed in conjunction with our emergency equipment. They serve to alert personnel and summon assistance if an eyewash or shower is activated. **WE RECOMMEND INSTALLING AN ALARM UNIT WITH ANY EMERGENCY EYEWASH OR SHOWER UNIT.**

9. O&M INFORMATION

Under the standard, the manufacturer of the emergency equipment must provide detailed instructions on the proper operation, inspection and maintenance of the emergency equipment. (Sections 4.6.1, 5.5.1, 6.5.1, 7.5.1, 8.2.4.1) This information should be accessible to maintenance personnel. Guardian offers detailed installation, operation and maintenance guides for its equipment. These guides are available on the Guardian website (gesafety.com) and from our sales representatives.

Note: This ANSI Compliance Checklist is intended to assist design personnel, facility owners and others in selecting, specifying, installing and maintaining emergency equipment. We have tried to assure that it is comprehensive and accurate. However, please refer to the complete ANSI/ISEA Z358.1-2014 standard before purchasing or installing emergency equipment. Guardian Equipment cannot be responsible for any errors or omissions from this Checklist, and cannot assure that any particular product will perform satisfactorily in any particular application.

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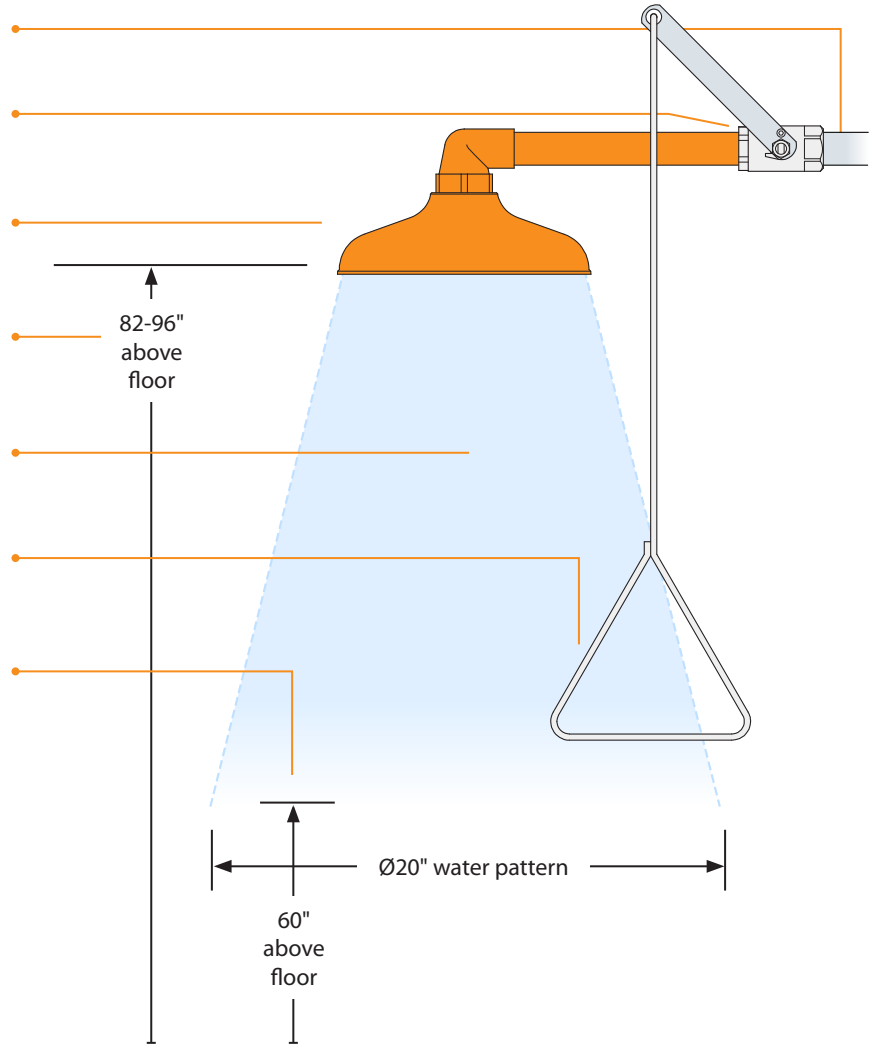
Emergency Showers

This checklist is a summary of the provisions of ANSI Z358.1-2014 relating to emergency showers. Please refer to the standard for a complete listing of these provisions.

All Guardian emergency showers are third-party certified to meet or exceed the provisions of ANSI Z358.1-2014.

- ☐ **Water supply is sufficient to provide at least 20 GPM for 15 minutes. (Section 4.1.2, 4.5.5)**
- ☐ **Hands-free valve activates in one second or less and remains open until manually closed. (Section 4.2, 4.1.5)**
- ☐ **Shower delivers 20 gallons (75.7 liters) of water per minute for 15 minutes in the required pattern. (Section 4.1.2, 4.5.5)**
- ☐ **Height of water column is between 82" (208.3 cm) and 96" (243.8 cm) above the floor. (Section 4.1.3, 4.5.4)**
- ☐ **Center of the water pattern is at least 16" (40.6 cm) from any obstruction. (Section 4.1.4, 4.5.4)**
- ☐ **Easily located, accessible actuator is no more than 69" (173.3 cm) above floor. (Section 4.2)**
- ☐ **At 60" (152.4 cm) above the floor, the water pattern is at least 20" (50.8 cm) in diameter. (Section 4.1.4)**
- ☐ **If provided, shower enclosure has a minimum diameter of 34" (86.4 cm). (Section 4.3)**



- ☐ **Location:** Install shower within 10 seconds (approximately 55 feet) of hazard, on the same level as hazard and with unobstructed travel path. Where strong acids or caustics are being handled, emergency showers should be located adjacent to the hazard, and an appropriate professional should be consulted for advice on the proper distance. (Section 4.5.2; B5)
- ☐ **Identification:** Identify shower location with highly visible sign. Area around shower shall be well-lit. (Section 4.5.3)
- ☐ **Water Temperature:** Water delivered by shower shall be tepid (60-100°F). (Section 4.5.6; B6)
- ☐ **Training:** Instruct all employees in the location and proper use of emergency showers. (Section 4.6.4)
- ☐ **Maintenance/Inspection:** Activate plumbed shower at least weekly. (Section 4.6.2) Inspect all emergency showers annually for compliance with standard. (Section 4.6.5)

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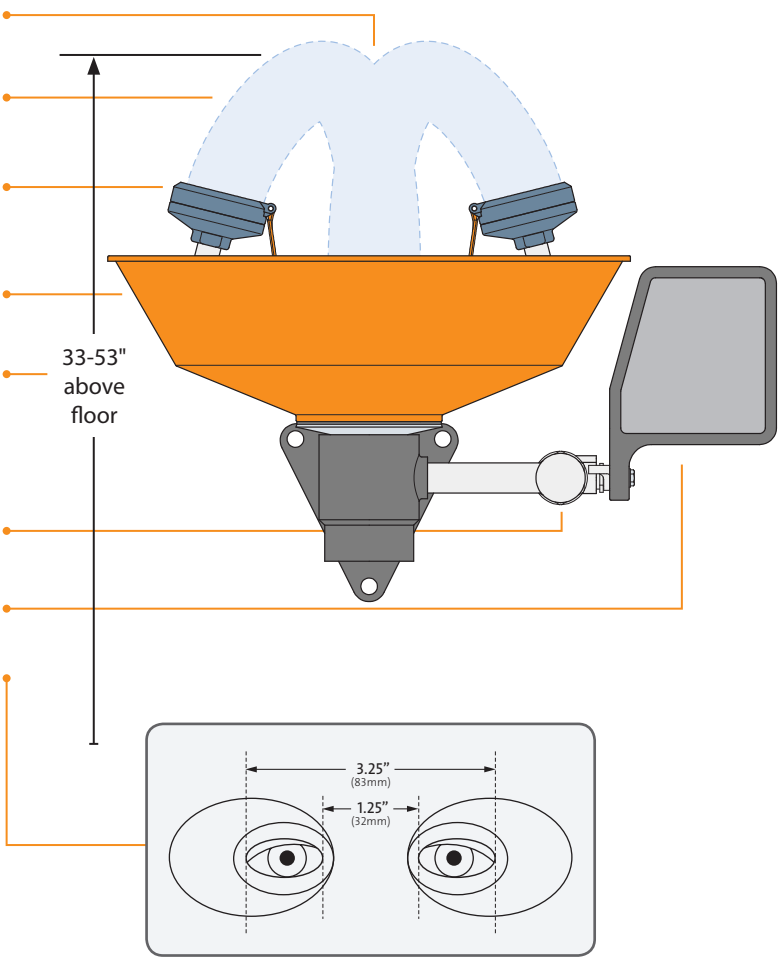
Eye/Face Washes

This checklist is a summary of the provisions of ANSI Z358.1-2014 relating to emergency eye/face washes. Please refer to the standard for a complete listing of these provisions.

All Guardian eye/face wash units are third-party certified to meet or exceed the provisions of ANSI Z358.1-2014.

- ☐ **Controlled, low velocity flow completely rinses eyes and face and is not injurious to user. (Section 6.1.1)**
- ☐ **Water flow is sufficiently high to allow user to hold eyes open while rinsing. (Section 6.1.7)**
- ☐ **Spray heads are protected from airborne contaminants. Covers are removed by water flow. (Section 6.1.3)**
- ☐ **Unit delivers at least 3.0 gallons (11.4 liters) of water per minute for 15 minutes. (Section 6.1.6, 6.4.5)**
- ☐ **Water flow pattern is positioned between 33" (83.8 cm) and 53" (134.6 cm) from the floor and at least 6" (15.3 cm) from the wall or nearest obstruction. (Section 6.4.4)**
- ☐ **Hands-free stay-open valve activates in one second or less. (Section 6.1.4, 6.2)**
- ☐ **Valve actuator is easy to locate and readily accessible to user. (Section 6.2)**
- ☐ **Unit washes both eyes simultaneously. Water flow covers area indicated on Guardian test gauge at no more than 8" above spray heads. (Section 6.1.8)**



- ☐ **Location:** Install eye/face wash unit within 10 seconds (approximately 55 feet) of hazard, on the same level as hazard and with unobstructed travel path. Where strong acids or caustics are being handled, emergency eye/face wash units should be located adjacent to the hazard, and an appropriate professional should be consulted for advice on the proper distance. (Section 6.4.2; B5)
- ☐ **Identification:** Identify eye/face wash location with highly visible sign. Area around eye/face wash unit shall be well-lit. (Section 6.4.3)
- ☐ **Water Temperature:** Water delivered by eye/face wash shall be tepid (60-100°F). (Section 6.4.6; B6)
- ☐ **Training:** Instruct all employees in the location and proper use of eye/face wash units. (Section 6.5.4)
- ☐ **Maintenance/Inspection:** Activate plumbed eye/face wash units at least weekly. (Section 6.5.2) Inspect all eye/face wash units annually for compliance with standard. (Section 6.5.5)

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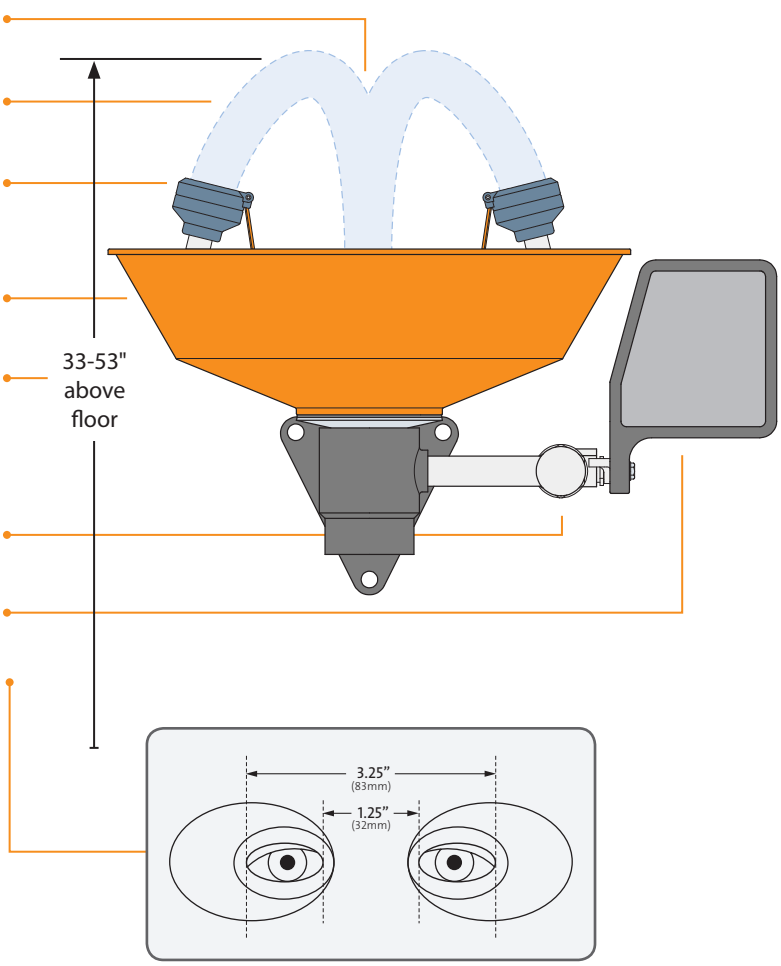
Eyewashes

This checklist is a summary of the provisions of ANSI Z358.1-2014 relating to emergency eyewashes. Please refer to the standard for a complete listing of these provisions.

All Guardian eyewash units are third-party certified to meet or exceed the provisions of ANSI Z358.1-2014.

- ☐ **Controlled, low velocity flow rinses both eyes and is not injurious to user. (Section 5.1.1)**
- ☐ **Water flow is sufficiently high to allow user to hold eyes open while rinsing. (Section 5.1.7)**
- ☐ **Spray heads are protected from airborne contaminants. Covers are removed by water flow. (Section 5.1.3)**
- ☐ **Unit delivers at least 0.4 gallons (1.5 liters) of water per minute for 15 minutes. (Section 5.1.6, 5.4.5)**
- ☐ **Water flow pattern is positioned between 33" (83.8 cm) and 53" (134.6 cm) from the floor and at least 6" (15.3 cm) from the wall or nearest obstruction. (Section 5.4.4)**
- ☐ **Hands-free stay-open valve activates in one second or less. (Section 5.1.4, 5.2)**
- ☐ **Valve actuator is easy to locate and readily accessible to user. (Section 5.2)**
- ☐ **Unit washes both eyes simultaneously. Water flow covers area indicated on Guardian test gauge at no more than 8" above spray heads. (Section 5.1.8)**



- ☐ **Location:** Install eyewash unit within 10 seconds (approximately 55 feet) of hazard, on the same level as hazard and with unobstructed travel path. Where strong acids or caustics are being handled, emergency eyewash unit should be located adjacent to the hazard, and an appropriate professional should be consulted for advice on the proper distance. (Section 5.4.2; B5)
- ☐ **Identification:** Identify eyewash location with highly visible sign. Area around eyewash unit shall be well-lit. (Section 5.4.3)
- ☐ **Water Temperature:** Water delivered by eyewash shall be tepid (60-100°F). (Section 5.4.6; B6)
- ☐ **Training:** Instruct all employees in the location and proper use of eyewash units. (Section 5.5.4)
- ☐ **Maintenance/Inspection:** Activate plumbed eyewash units at least weekly. (Section 5.5.2) Inspect all eyewash units annually for compliance with standard. (Section 5.5.5)

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Eyewash/Drench Hose Units

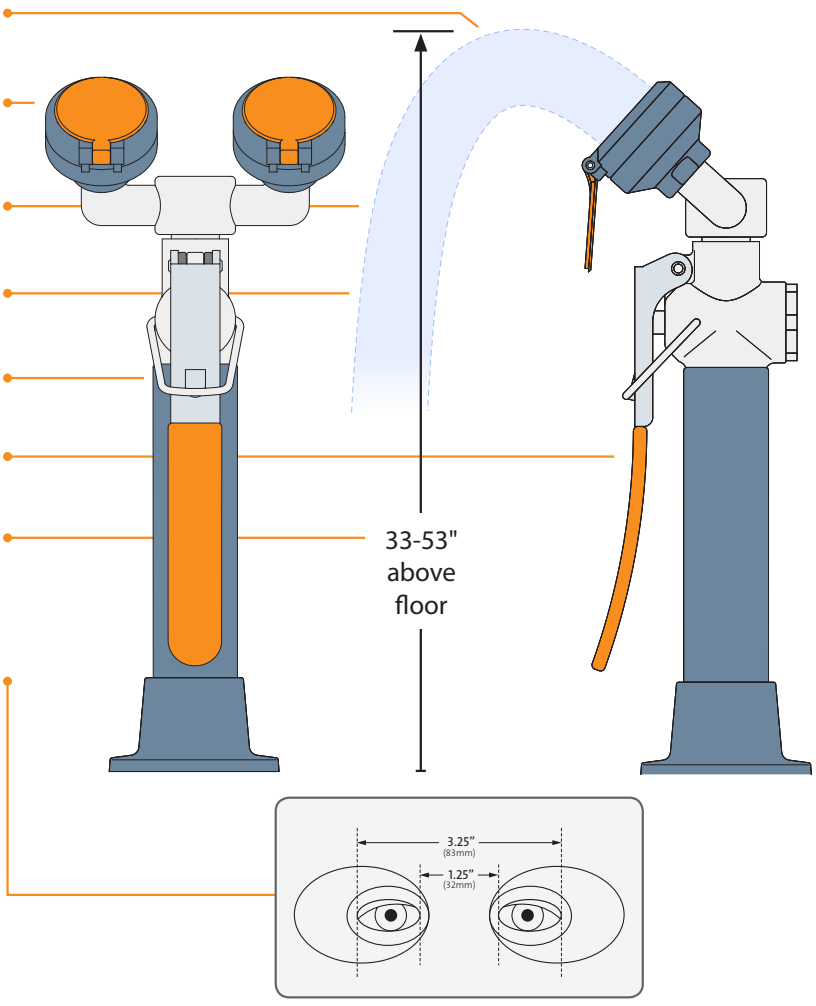
ANSI Standard Z358.1-2014 states that drench hose units may supplement, but may not be used in place of dedicated eyewash units. Guardian offers a series of units that meet the provisions of the ANSI standard as both an eyewash and a drench hose.

These dual purpose units can be used to combine an eyewash and a drench hose into a single versatile, economic unit.

This checklist summarizes the provisions of ANSI Z358.1-2014 for both eyewashes and drench hoses. Please refer to the standard for a complete listing of these provisions.

All Guardian eyewash/drench hose units are third-party certified to meet or exceed the provisions of ANSI Z358.1-2014.

- ☐ **Water flow is sufficiently high to allow user to hold eyes open while rinsing. (Section 5.1.7)**
- ☐ **Spray heads are protected from airborne contaminants. Covers are removed by water flow. (Section 5.1.3)**
- ☐ **Controlled, low velocity flow rinses both eyes and is not injurious to user. (Section 5.1.1, 8.2.1)**
- ☐ **Unit delivers at least 0.4 gallons (1.5 liters) of water per minute for 15 minutes. (Section 5.1.6)**
- ☐ **Hands-free stay-open valve activates in one second or less. (Section 5.2, 8.2.2)**
- ☐ **Valve actuator is easy to locate and readily accessible to user. (Section 5.2, 8.2.2)**
- ☐ **Water flow pattern is positioned between 33" (83.8 cm) and 53" (134.6 cm) from the floor and at least 6" (15.3 cm) from the wall or nearest obstruction. (Section 5.4.4)**
- ☐ **Unit washes both eyes simultaneously. Water flow covers area indicated on Guardian test gauge at no more than 8" above spray heads. (Section 5.1.8)**



- ☐ **Location:** Install eyewash/drench hose unit within 10 seconds (approximately 55 feet) of hazard, on the same level as hazard and with unobstructed travel path. Where strong acids or caustics are being handled, emergency eyewash/drench hose unit should be located adjacent to the hazard, and an appropriate professional should be consulted for advice on the proper distance. (Section 5.4.2; B5)
- ☐ **Identification:** Identify eyewash/drench hose location with highly visible sign. Area around eyewash/drench hose unit shall be well-lit. (Section 5.4.3, 8.2.3.2)
- ☐ **Water Temperature:** Water delivered by eyewash/drench hose unit shall be tepid (60-100°F). (Section 5.4.6, 8.2.3.4; B6)
- ☐ **Training:** Instruct all employees in the location and proper use of eyewash/drench hose units. (Section 5.5.4, 8.2.4.4)
- ☐ **Maintenance/Inspection:** Activate eyewash/drench hose units at least weekly. (Section 5.5.2, 8.2.4.2) Inspect all eyewash/drench hose units annually for compliance with standard. (Section 5.5.5, 8.2.4.5)

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Drench Hose Units

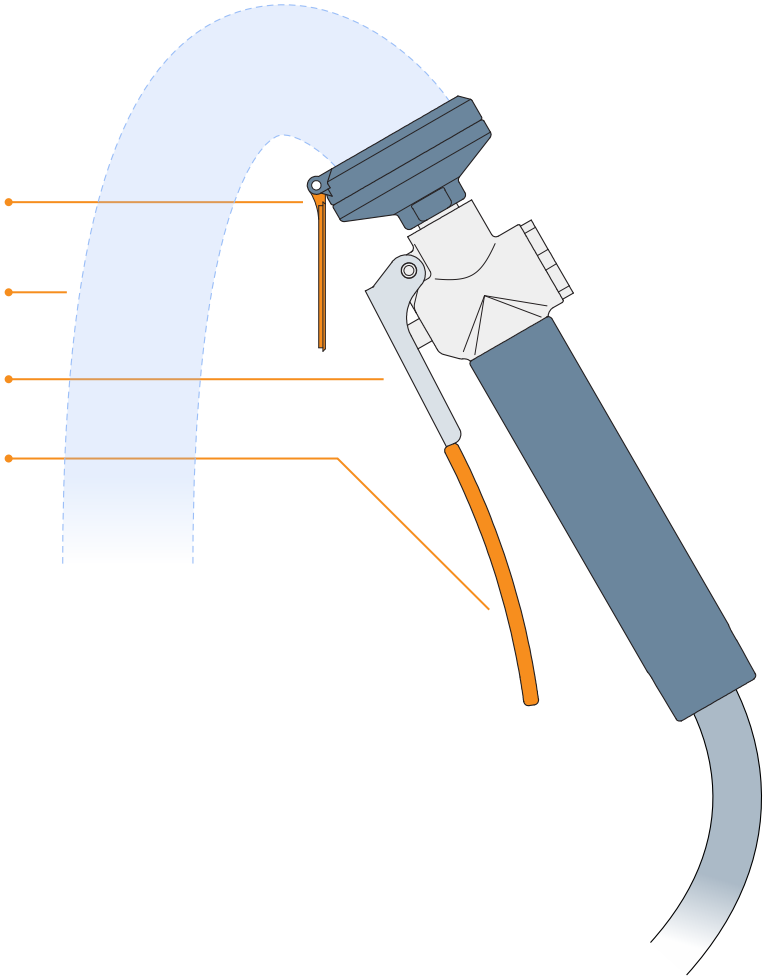
Under ANSI Z358.1-2014, drench hose units support plumbed and self-contained emergency eyewash and shower units, but cannot replace them. In other words, drench hoses are intended solely as supplemental equipment providing additional protection to personnel.

Drench hoses are useful in cases where the user is in a prone position or where it is necessary to reach areas of the face and body inaccessible to the fixed stream of a shower or eyewash unit. They are also advantageous in areas (such as laboratories) where they can be installed close to where accidents might occur.

This checklist summarizes the provisions of ANSI Z358.1-2014 relating to drench hoses. Please refer to the standard for a complete listing of these provisions.

All Guardian drench hose units are third-party certified to meet or exceed the provisions of ANSI Z358.1-2014.

- ☐ **Drench hose unit supplements shower and eyewash units installed in vicinity. (Section 8)**
- ☐ **Controlled, low velocity flow is not injurious to user. (Section 8.2.1)**
- ☐ **Valve goes from 'off' to 'on' in one second or less. (Section 8.2.2)**
- ☐ **Valve actuator is easy to locate and readily accessible to the user. (Section 8.2.2)**



- ☐ **Location:** Install drench hose unit in area free of debris or obstructions. (Section 8.2.3.2)
- ☐ **Identification:** Identify drench hose unit with highly visible sign. Area around drench hose unit shall be well-lit. (Section 8.2.3.2)
- ☐ **Water Temperature:** Water delivered by drench hose unit shall be tepid (60-100°F). (Section 8.2.3.4)
- ☐ **Training:** Instruct all employees in the location and proper use of drench hose units. (Section 8.2.4.4)
- ☐ **Maintenance/Inspection:** Activate drench hose units at least weekly. (Section 8.2.4.2) Inspect all drench hose units annually for compliance with standard. (Section 8.2.4.5)

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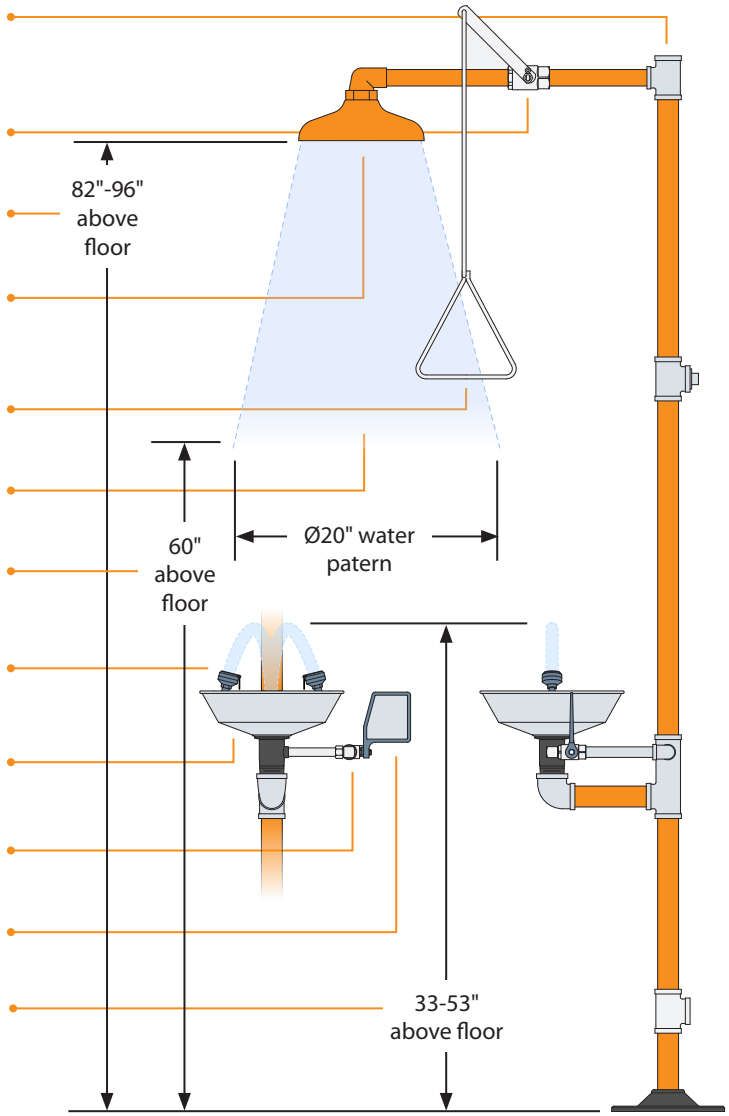
Safety Stations

This checklist is a summary of the provisions of ANSI Z358.1-2014 relating to eye or eye/face wash and shower combination stations. Please refer to the standard for a complete listing of these provisions.

All Guardian safety stations are third-party certified to meet or exceed the provisions of ANSI Z358.1-2014.

- ☐ **Water supply delivers required flow when shower and eye or eye/face wash are operated simultaneously. (Section 4.5.5, 7.4.4)**
- ☐ **Hands-free stay-open valve activates in one second or less. (Section 4.2)**
- ☐ **Height of water column is between 82" (208.3 cm) and 96" (243.8 cm) above the floor. (Section 4.1.3, 4.5.4)**
- ☐ **Shower delivers 20 gallons (75.7 liters) of water per minute for 15 minutes in the required pattern. (Section 4.1.2, 4.5.5)**
- ☐ **Easily located, accessible actuator is no more than 69" (173.3 cm) above floor. (Section 4.2)**
- ☐ **Center of the water pattern is at least 16" (40.6 cm) from any obstruction. (Section 4.1.4, 4.5.4)**
- ☐ **At 60" (152.4 cm) above the floor, the water pattern is at least 20" (50.8 cm) in diameter. (Section 4.1.4)**
- ☐ **Spray heads are protected from airborne contaminants. Covers are removed by water flow. (Section 5.1.3, 6.1.3)**
- ☐ **Unit delivers at least 3.0 GPM (11.4 liters) (for eye/face wash) or 0.4 GPM (1.5 liters) (for eyewash) for 15 minutes. (Section 5.1.6, 6.1.6, 6.4.5)**
- ☐ **Hands-free stay-open valve activates in one second or less. (Section 5.2, 6.1.4, 6.2)**
- ☐ **Valve actuator is easy to locate and readily accessible to user. (Section 5.2, 6.2)**
- ☐ **Water flow pattern is positioned between 33" (83.8 cm) and 53" (134.6 cm) from the floor and at least 6" (15.3 cm) from the wall or nearest obstruction. (Section 5.4.4, 6.4.4)**



- ☐ **Location:** Install safety station within 10 seconds (approximately 55 feet) of hazard, on the same level as hazard and with unobstructed travel path. Where strong acids or caustics are being handled, safety station should be located adjacent to the hazard, and an appropriate professional should be consulted for advice on the proper distance. (Section 7.4.2; B5)
- ☐ **Identification:** Identify safety station location with highly visible sign. Area around safety station shall be well-lit. (Section 7.4.3)
- ☐ **Water Temperature:** Water delivered by safety station shall be tepid (60-100°F). (Section 7.4.5; B6)
- ☐ **Training:** Instruct all employees in the location and proper use of safety station. (Section 7.5.4)
- ☐ **Maintenance/Inspection:** Activate safety station at least weekly. (Section 7.5.2) Inspect all safety stations annually for compliance with standard. (Section 7.5.5)

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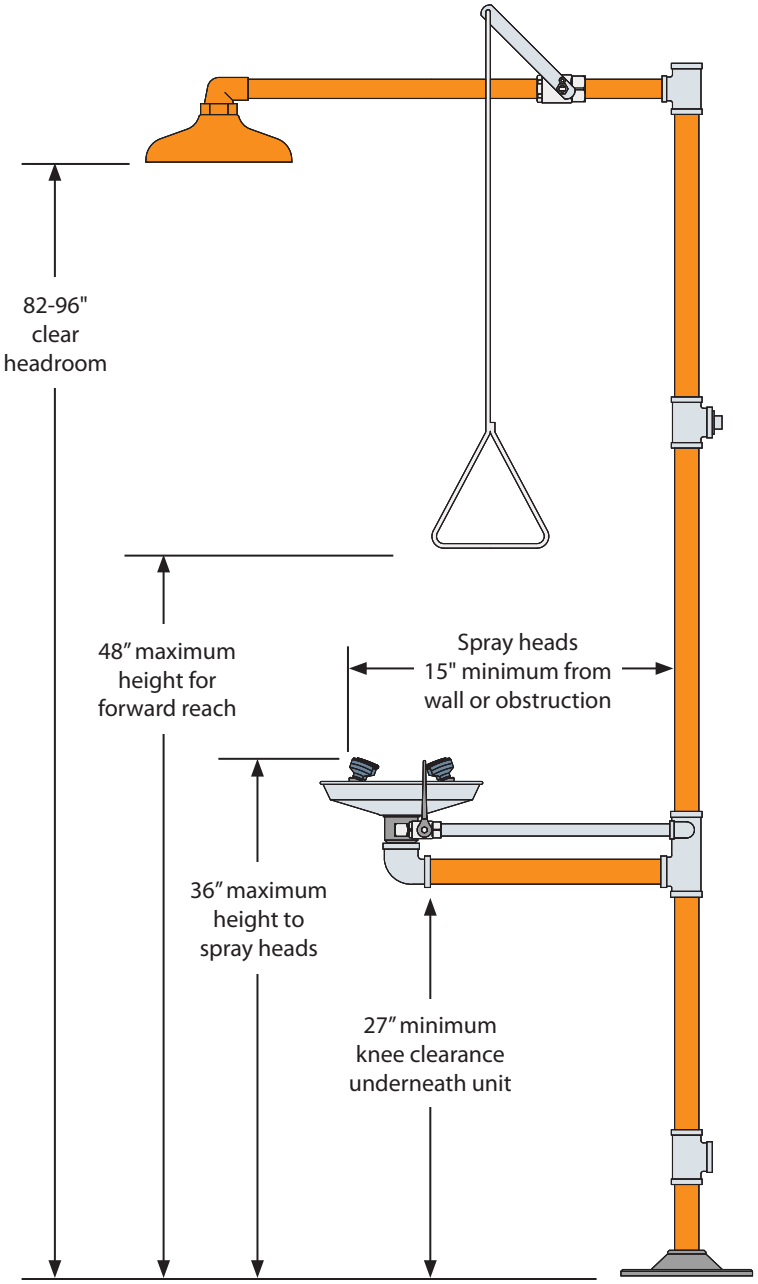
UPC listed 8116. ETL listed 101496. Units have been tested to and comply with ANSI Z358.1-2014.

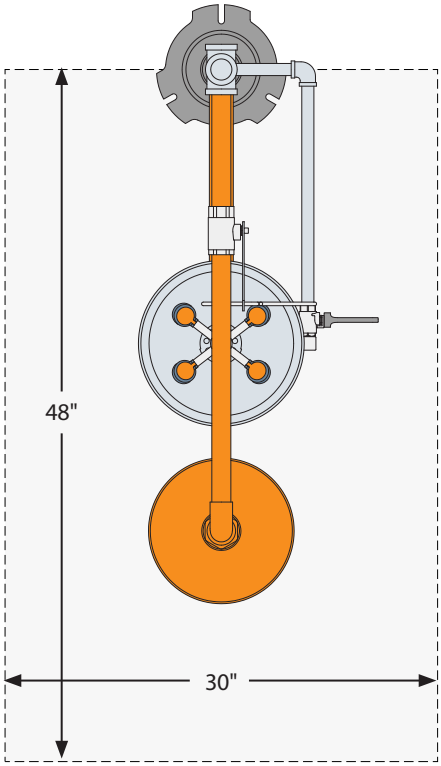
Barrier-Free Equipment

The Americans with Disabilities Act (ADA) requires that employers provide accessible workplaces for all employees. These workplaces may therefore require emergency eyewash and shower equipment that is specially constructed for wheelchair accessibility.

Barrier-free emergency equipment must comply with the provisions of ANSI A117.1-2009 ("Accessible and Usable Buildings and Facilities"). These provisions include dimensions for minimum knee clearance, maximum height and reach, and minimum distance from obstructions.

Guardian offers an array of eyewash and shower units designed for barrier-free applications. These units meet the provisions of ANSI Z358.1-2014 for emergency equipment and the accessibility provisions of ANSI A117.1-2009. The provisions of ANSI Z358.1-2014 are summarized on pages 2-10. The additional accessibility provisions of ANSI A117.1-2009 are shown here. Please refer to the standards for a complete description of these provisions.





Minimum clear floor space requirements for forward approach (top view)

Guardian Equipment
1140 N North Branch St
Chicago, IL 60642

312 447 8100 telephone
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Guardian Emergency Eyewash and Shower Technology:
Engineered for today's industrial environments.

Safe workplaces demand advanced emergency eyewash and shower equipment. Guardian is proud to offer the most complete selection of emergency equipment designed for today's industrial applications.

Characterized by enhanced performance and superior durability, all Guardian products feature the latest innovations in spray head technology. The unique GS-Plus™ and FS-Plus™ spray heads deliver water in a soft, wide spray rather than a solid, narrow stream. The user receives more water over a wider area than with any other type of outlet head. In an emergency, contaminants are flushed away quickly, gently, and completely.

These heads incorporate a variety of unique and important features:

CONSISTENT, BALANCED FLOW

An engineered flow control located inside each spray head is calibrated to deliver 1.8 (GS-Plus™) or 3.2 (FS-Plus™) gallons per minute, at pressures from 20 to 100 PSI. The flow is consistent, and evenly balanced between the spray heads regardless of line pressure.

"FLIP TOP" DUST COVER

Each spray head is protected against dust and dirt by a "flip top" cover which nests into the top of the outlet head when equipment is not in use. Upon unit activation, water flow swings the cover off the head. The cover is permanently attached to the spray head by a stainless steel pin to prevent removal or loss. Optional stainless steel covers are also available.

FILTERED WATER

Each spray head contains an internal filter to remove particles and debris from the water flow. During flushing, the user's eyes and face are protected against any potential foreign matter which may exist in the water or plumbing lines.

DURABILITY

The spray head bodies are molded from tough, impact-resistant and corrosion-resistant polypropylene, while the "flip top" dust covers are molded nylon. Both the GS-Plus™ and FS-Plus™ spray heads stand up to the harshest laboratory environments.

EASY MAINTENANCE

Water often contains dissolved minerals and foreign matter which, over time can build up and clog any spray head. The GS-Plus™ and FS-Plus™ spray heads are designed such that all working components are contained within the head itself, making cleaning and maintenance easy. Guardian's emergency equipment should never need disassembly in the event of a clogged spray head.