

BRADLEY HALO EMERGENCY PLUMBING FIXTURES

Bradley Halo Emergency Plumbing Fixtures are a new generation in safety equipment, featuring separate supply and waste piping to eye/face wash, ergonomic hand activation paddle easy to reach from any direction, and instant water flow on opening the new translucent dust cover. Halo eye/face wash units provide full face water distribution profile recognized as the best design in the industry. Integral strainers and Bradley's unique patented self-draining design all reduce the potential for bacteria growth, providing safer, more effective fixtures.

Halo units are available in pedestal, wall-mount, and combination units.

Bradley Corporation, the industry's leading manufacturer of premium quality commercial lavatories and lavatory faucets, wash stations, toilet accessories, and emergency plumbing fixtures, serves a diverse customer base ranging from local business facilities to international corporations like Wal-Mart, General Motors, U.S. Postal Service, W.W. Grainger, AMC Theaters Corporation.

Architects, engineers, and specifiers look to Bradley Corporation for innovation in design and leadership in the development of environmentally conscious products. Bradley Corporation, a member of the U.S. Green Building Council, the Wisconsin Green Building Alliance, has several products earning certification by Greenguard Environmental Institute, and Greenguard Children and Schools program.

Bradley eases the specifying process with a seasoned customer service staff and a range of helpful information tools on an advanced website. For example, easy-to-use sizing software, available on Bradley's website, allows engineers to quickly determine the correct size Thermostatic Mixing Valves.

Bradley is the industry leader in the manufacture of premium quality commercial plumbing fixtures, valves, TMVs and washroom accessories that appear in the following CSI MasterFormat 2004™ Sections:

Section 10 21 13 – Toilet Compartments (Mills Metal, Plastic-laminate, Phenolic, and Plastic units)
Section 10 28 13.13 – Commercial Toilet Accessories
Section 10 28 13.15 – Hand and Hair Dryers
Section 10 28 13.63 – Detention Toilet Accessories
Section 10 51 26.00 – Plastic Lockers (Lenox Plastic Lockers)
Section 10 51 26.13 – Plastic Lockers (Lenox Recycled Plastic lockers)
Section 22 11 19 – Domestic Water Piping Specialties (Thermostatic mixing valves)
Section 22 42 16.01 – Commercial Lavatories and Faucets (Single and multi-station lavatory systems)
Section 22 42 16.02 – Commercial Lavatories and Faucets (Bradley Advocate Lavatory System)
Section 22 42 16.03 – Commercial Lavatories and Faucets (Bradley Verge Lavatory System)
Section 22 42 16.11 – Commercial Sinks and Faucets
Section 22 42 23 – Commercial Showers and Shower Valves
Section 22 42 33 – Wash Fountains
Section 22 43 00 – Healthcare Plumbing Fixtures (Patient care lavatory units)
Section 22 45 00 – Emergency Plumbing Fixtures (Emergency Eyewash Fixtures and Drench Showers)
Section 22 46 00 – Security Plumbing Fixtures

Contact Bradley Corporation, Menomonee Falls, WI 53051; Phone: 800-BRADLEY ((800)272-3539) Fax: (262)251-5817, or visit the Bradley web site www.bradleycorp.com.

Bradley Corporation is an AIA/CES registered provider currently offering five programs earning one (1) HS&W Learning Unit each; several qualify for sustainable design (SD) credit. All active AIA members must successfully complete 18 learning unit (LU) hours each year.

SECTION 22 45 00 – EMERGENCY PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

1. Pedestal-mounted eyewash and eye/face wash equipment.
2. Wall-mounted eyewash and eye/face wash equipment.
3. Combination emergency shower and eyewash units.
4. Water-tempering equipment.

1.2 RELATED SECTIONS

- A. Division 22 Section "Sanitary Waste Piping Specialties" for floor drains.

1.3 REFERENCES

- A. International Safety Equipment Association (ISEA)
 1. ANSI/ISEA Z358.1 – American National Standard for Emergency Eyewash and Shower Equipment.
- B. US Federal Government:
 1. Public Law 90-480 – The Architectural Barriers Act of 1968, as amended.
 2. Public Law 101-336 – The Americans with Disabilities Act of 1990, as amended.

1.4 ACTION SUBMITTALS

- A. Product Data: For each product:
 1. Manufacturer's data sheets indicating operating characteristics, materials and finishes.
 2. Include details of electrical and mechanical operating parts.
 3. Provide mounting requirements and rough-in dimensions.
 4. Mark each sheet with product drawing designation.
- B. Shop Drawings: Submit power, signal, and control wiring diagrams.

1.5 INFORMATION SUBMITTALS

- A. Manufacturer's Certificates: Submit certificates documenting factory testing of specified units.
- B. Field quality-control test reports.

1.6 CLOSEOUT SUBMITTALS

- A. Operation and maintenance data.

1.7 MAINTENANCE SUBMITTALS

- A. Furnish indicated spare parts that are packaged with identifying labels listing associated products.

1.8 QUALITY ASSURANCE

- A. Source Limitations: Obtain emergency plumbing fixtures through a single source from a single manufacturer.
- B. ANSI Standard: Comply with ANSI Z358.1.
- C. NSF Standard: Comply with NSF 61 for fixture components in contact with potable water.
- D. Accessibility Requirements: Comply with ICC/ANSI A117.1; [Public Law 90-480 and Public Law 101-336] and requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Subject to compliance with requirements, provide emergency plumbing fixtures manufactured by **Bradley Corporation**, Menomonee Falls, WI 53051, (800)272-3539, fax (262)251-5817; Email info@BradleyCorp.com; Website www.bradleycorp.com.

Specifier: Retain one of three paragraphs below based upon Project requirements.

- 1. Submit comparable products of one of the following for approval by Architect:
 - a. [Specifier: Insert name of manufacturer of comparable product.]
- 2. Submit requests for substitution in accordance with Instructions to Bidders and Division 01 General Requirements.
- 3. Provide specified product; Owner will not consider substitution requests.

2.2 PEDESTAL-MOUNTED EMERGENCY PLUMBING FIXTURES

- A. Accessible, Pedestal-Mounted, Plumbed Eyewash Units **EPF# ____**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.
 - 1. Basis of Design Manufacturer/Model: Bradley, Pedestal-Mount Halo Eyewash S19214 Series.
 - 2. Eyewash: 5.1 gpm (0.321 L/s), [impact resistant ABS plastic sprayhead].

3. Ball Valve: NPT 1/2-inch (DN 15), [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass self-closing wash valve].
4. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and Type 300 series stainless steel foot pedal] [, and Type 316 stainless steel foot pedal].
5. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

6. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
7. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
8. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

9. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#01.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

10. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

11. Scald Protection Equipment: Anti-scald valve.
12. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring

- contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
- d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
- B. Accessible, Pedestal-Mounted, Plumbed Eye/Face Wash Units **EPF#_____**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.
1. Basis of Design Manufacturer/Model: Bradley, Pedestal-Mount Halo Eye/Face Wash S19214 Series.
 2. Eye/Face Wash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead] [Type 304 stainless steel sprayhead with electro-polished finish] [Type 316 stainless steel sprayhead with electro-polished finish].
 3. Ball Valve: NPT 1/2-inch (DN 15), [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass self-closing wash valve].
 4. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and Type 300 series stainless steel foot pedal] [, and Type 316 stainless steel foot pedal].
 5. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

6. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
7. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
8. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

1. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#01.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

2. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

3. Scald Protection Equipment: Anti-scald valve.
4. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

2.3 WALL-MOUNTED EMERGENCY PLUMBING FIXTURES

- A. Accessible, Wall-Mounted, Plumbed Eyewash Units **EPF#** ____: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.
 1. Basis of Design Manufacturer/Model: Bradley, Wall-Mount Halo Eyewash S19224 Series.
 2. Eyewash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead].
 3. Ball Valve: NPT 1/2-inch (DN 15), [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass self-closing wash valve].
 4. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and stainless steel foot pedal].
 5. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass] [, including tailpiece and p-trap].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

6. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
7. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
8. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

9. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#01.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

10. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

11. Scald Protection Equipment: Anti-scald valve.
12. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

B. Accessible, Wall-Mounted, Plumbed Eye/Face Wash Units **EPF#___**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.

1. Basis of Design Manufacturer/Model: Bradley, Wall-Mount Halo Eye/Face Wash S19224 Series.
2. Eye/Face Wash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead] [Type 304 stainless steel sprayhead with electro-polished finish] [Type 316 stainless steel sprayhead with electro-polished finish].
3. Ball Valve: NPT 1/2-inch (DN 15), [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass self-closing wash valve].
4. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and stainless steel foot pedal].
5. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass] [, including tailpiece and p-trap].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

6. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
7. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
8. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

9. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#01.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

10. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

11. Scald Protection Equipment: Anti-scald valve.

12. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

2.4 COMBINATION EMERGENCY PLUMBING FIXTURES

- A. Standard, Plumbed Emergency Shower with Eyewash Combination Units **EPF#_____**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.
 1. Basis of Design Manufacturer/Model: Bradley, Pedestal-Mount Halo Eyewash S19314 Series.
 2. Eyewash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead].

Specifier: Select standard plastic or high performance stainless steel showerhead below. Bradley's patented SpinTec showerhead technology provides maximum water distribution while providing consistent water flow.

3. Showerhead: 22 gpm (1.38 L/s) flow rate, 3.1-inch (78.7 mm) diameter yellow impact-resistant plastic head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
4. Showerhead: 22 gpm (1.38 L/s) flow rate, 1-1/2-inch (38 mm) diameter [Type 304] [Type 316] stainless steel head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
5. Ball Valves: NPT 1-inch (DN 25) shower valve and NPT 1/2-inch (DN 15) eyewash valve, [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass stay-open eyewash valve and self-closing shower valve].
6. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and Type 300 series stainless steel foot pedal] [, and Type 316 stainless steel foot pedal].

7. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

8. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
9. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
10. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

11. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#02.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

12. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

13. Scald Protection Equipment: Anti-scald valve.
14. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel,

[NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

- B. Accessible, Plumbed Emergency Shower with Eyewash Combination Units **EPF#_____**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.
1. Basis of Design Manufacturer/Model: Bradley, Pedestal-Mount Halo Accessible Eyewash S19314 Series.
 2. Eyewash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead].

Specifier: Select standard plastic or high performance stainless steel showerhead below. Bradley's patented SpinTec showerhead technology provides maximum water distribution while providing consistent water flow.

3. Showerhead: 22 gpm (1.38 L/s) flow rate, 3.1-inch (78.7 mm) diameter yellow impact-resistant plastic head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
4. Showerhead: 22 gpm (1.38 L/s) flow rate, 1-1/2-inch (38 mm) diameter [Type 304] [Type 316] stainless steel head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
5. Ball Valves: NPT 1-inch (DN 25) shower valve and NPT 1/2-inch (DN 15) eyewash valve, [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass stay-open eyewash valve and self-closing shower valve].
6. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and accessible pull rod].
7. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

8. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
9. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
10. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

11. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#02.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

12. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

13. Scald Protection Equipment: Anti-scald valve.

14. Emergency Signaling System:

- a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
- b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
- c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
- d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
- e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

- C. Standard, Plumbed Emergency Shower with Eye/Face Wash Combination Units **EPF#___**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.

1. Basis of Design Manufacturer/Model: Bradley, Pedestal-Mount Halo Eye/Face Wash S19314 Series.
2. Eye/Face Wash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead] [Type 304 stainless steel sprayhead with electro-polished finish] [Type 316 stainless steel sprayhead with electro-polished finish].

Specifier: Select standard plastic or high performance stainless steel showerhead below. Bradley's patented SpinTec showerhead technology provides maximum water distribution while providing consistent water flow.

3. Showerhead: 22 gpm (1.38 L/s) flow rate, 3.1-inch (78.7 mm) diameter yellow impact-resistant plastic head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
4. Showerhead: 22 gpm (1.38 L/s) flow rate, 1-1/2-inch (38 mm) diameter [Type 304] [Type 316] stainless steel head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
5. Ball Valves: NPT 1-inch (DN 25) shower valve and NPT 1/2-inch (DN 15) eye/face wash valve, [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass stay-open eye/face wash valve and self-closing shower valve].
6. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and Type 300 series stainless steel foot pedal] [, and Type 316 stainless steel foot pedal].
7. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

8. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
9. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
10. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

11. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#02.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

12. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

13. Scald Protection Equipment: Anti-scald valve.

14. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

D. Accessible, Plumbed Emergency Shower with Eye/Face Wash Combination Units **EPF#_____**: ANSI Z358.1, self-draining, with separate supply and waste piping. Provide factory-assembled and tested units with standard-compliant identification sign and inspection tag.

1. Basis of Design Manufacturer/Model: Bradley, Pedestal-Mount Halo Accessible Eye/Face Wash S19314 Series.
2. Eye/Face Wash: 5.1 gpm (0.321 L/s) [impact resistant ABS plastic sprayhead] [Type 304 stainless steel sprayhead with electro-polished finish] [Type 316 stainless steel sprayhead with electro-polished finish].

Specifier: Select standard plastic or high performance stainless steel showerhead below. Bradley's patented SpinTec showerhead technology provides maximum water distribution while providing consistent water flow.

3. Showerhead: 22 gpm (1.38 L/s) flow rate, 3.1-inch (78.7 mm) diameter yellow impact-resistant plastic head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
4. Showerhead: 22 gpm (1.38 L/s) flow rate, 1-1/2-inch (38 mm) diameter [Type 304] [Type 316] stainless steel head [with yellow impact-resistant plastic shroud] [with stainless steel shroud].
5. Ball Valves: NPT 1-inch (DN 25) shower valve and NPT 1/2-inch (DN 15) eye/face wash valve, [chrome-plated brass stay-open wash valve] [Type 316 stainless steel stay-open wash valve] [chrome-plated brass stay-open eye/face wash valve and self-closing shower valve].
6. Valve Operation: Hand-activated push handle, [Type 300 series stainless steel] [Type 316 stainless steel] [, and accessible pull rod].

7. Pipe and Fittings: NPT 1-1/4-inch (DN 32) diameter, [galvanized steel with epoxy safety yellow coating] [Type 304 stainless steel] [Type 316 stainless steel] [chrome-plated red brass].

Specifier: Bowl, dust cover, drench hose, and water tempering items below are available options from Bradley.

8. Bowl: [Yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel], with integral strainer.
9. Dust Cover: [Eyewash cover] [Full bowl activating cover], [yellow transparent plastic] [Type 304 Stainless steel] [Type 316 Stainless steel].
10. Drench Hose: 8-foot (2438 mm) yellow reinforced thermoplastic hose with 3/8-inch NPT male thread, with chrome-plated brass stay-open valve, [with vacuum breaker] [with backflow preventer], attachment supply, fittings, and hangar, equipped with ABS plastic sprayhead and cover.

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

1. Water Tempering Equipment: Thermostatic mixing valve assembly TMV#02.

Specifier: Anti-freeze valve drains piping where unit may be exposed to freezing conditions.

2. Freeze Protection Equipment: Anti-freeze valve.

Specifier: Anti-scald valve drains piping when unit may be exposed to temperatures in excess of 85 deg. F.

3. Scald Protection Equipment: Anti-scald valve.
4. Emergency Signaling Systems:
 - a. S19-322 Recessed signaling system: NEMA 1, automatic audible and visual system with remote wiring contacts, 90-264 AV, 0.5A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - b. S19-323 Emergency signaling system: Waterproof NEMA 3R, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - c. S19-324 General Area Emergency signaling system: NEMA 4X rated, UL listed industrial control panel, automatic audible and visual system with remote wiring contacts, automatic reset switch, 90-264 AV, 3.0A [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - d. S19-324 Explosion proof emergency signaling system: 90-264 AC, 3.0A. UL listed industrial control panel, Class I, Division 2 Groups B, C and D explosion proof, [NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].
 - e. S19-324 Explosion proof emergency signaling system: Class I, Division 1, Groups B, C, and D explosion proof, 90-264 AC, 3.0A. UL listed industrial control panel,

[NEMA 4] [NEMA 4X], [automatic reset switch], [1-1/4 inch NPT supply] [1/2 inch NPT supply].

Specifier: Thermostatic mixing valve assembly is recommended by Bradley as best way to satisfy ANSI Z358.1 requirement for providing tepid water delivery to emergency plumbing fixtures.

2.5 WATER TEMPERING EQUIPMENT

- A. Thermostatic Mixing Valve for Eyewash and Eye/Face Wash Units **TMV#01**: ANSI Z358.1 compliant single valve design with liquid-filled unit-mounted dial thermometer, providing 85 deg F (29 deg C) tepid, potable water, maintaining temperature at plus or minus 5 deg F (3 deg C) for required 15-minute test period, and in case of unit failure to continue cold-water flow, with associated corrosion-resistant housing and fittings.
1. Basis of Design Manufacturer/Model: Bradley, Navigator Emergency Thermostatic Mixing Valve S19-2000 EFX-8.
 2. Supply Connections: Hot and cold water.
 3. Flow Capacity: 7 gpm at 30 psi (.44 L/s at 2.5 kPa).
 4. Finish: [Rough bronze] [Chrome-plated bronze].
 5. Cabinet: [Surface mounted stainless steel] [Recessed stainless steel] [Surface mounted white enamel] [Recessed white enamel] [Plexiglass window in door], with cylinder door lock.
- B. Thermostatic Mixing Valve for Combination Shower Units **TMV#02**: ANSI Z358.1 compliant single valve design with liquid-filled unit-mounted dial thermometer, providing 85 deg F (29 deg C) tepid, potable water, maintaining temperature at plus or minus 5 deg F (3 deg C) for required 15-minute test period, and in case of unit failure to continue cold-water flow, with associated corrosion-resistant housing and fittings.
1. Basis of Design Manufacturer/Model: Bradley, Navigator Emergency Thermostatic Mixing Valve S19-2100 EFX-25.
 2. Supply Connections: Hot and cold water.
 3. Flow Capacity: 26 gpm at 30 psi (1.64 L/s at 2.5 kPa).
 4. Finish: [Rough bronze] [Chrome-plated bronze].
 5. Cabinet: [Surface mounted stainless steel] [Recessed stainless steel] [Surface mounted white enamel] [Recessed white enamel] [Plexiglass window in door], with cylinder door lock.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Assemble fixtures and associated fittings and trim in accordance with manufacturer's instructions.

- B. Install fixture supports attached to building structure for fixtures requiring supports.
- C. Install fixtures onto waste-fitting seals or flanges and attach to supports or building structure.
- D. Install fixtures level, plumb, and firmly in place in accordance with manufacturer's rough-in drawings.
- E. Install water supply piping to each fixture requiring water supply connection. Provide stop on each supply in readily-serviced location. Fasten supply piping to supports or substrate.
- F. Install trap and waste piping to each fixture requiring sanitary system connection.
- G. Install escutcheons at exposed piping penetrations in finished locations and within cabinets.
- H. Seal joints between fixtures and walls, floors, and countertops with mildew-resistant silicone sealant.

3.2 CLEANING AND PROTECTION

- A. Repair or replace defective work, including damaged fixtures and components.
- B. Clean unit surfaces, test fixtures, and leave in ready-to-use condition.
- C. Turn over keys, tools, maintenance instructions, and maintenance stock to Owner.
- D. Protect units with water-resistant temporary covering. Do not allow temporary use of plumbing fixtures unless approved in writing by Architect. Remove protection at Substantial Completion and dispose.

3.3 TESTING AND ADJUSTING

- A. Set field-adjustable temperature set points of temperature-actuated water mixing valves. Adjust set point within allowable temperature range.
- B. Test and adjust installation.
- C. Remove and replace malfunctioning thermostatic mixing valves and retest.

END OF SECTION