SECTION 224223 - COMMERCIAL SHOWERS

Revise this Section by deleting and inserting text to meet Project-specific requirements.

Verify that Section titles referenced in this Section are correct for this Project's Specifications; Section titles may have changed.

1. GENERAL
   * + 1. RELATED DOCUMENTS

Retain or delete this article in all Sections of Project Manual.

* + - * 1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.
      1. SUMMARY
         1. Section Includes:

Individual shower receptors.

Shower faucets.

Shower basins.

Group showers.

Outdoor showers.

Grout.

* + - * 1. Related Requirements:

Retain subparagraphs below to cross-reference requirements Contractor might expect to find in this Section but are specified in other Sections.

Section 224100 "Residential Plumbing Fixtures" for residential showers.

Section 224300 "Medical Plumbing Fixtures" for healthcare showers.

Section 224500 "Emergency Plumbing Fixtures" for emergency showers.

Section 224600 "Security Plumbing Fixtures" for security showers.

* + - 1. SUBMITTALS
         1. Submittals for this section are subject to the re-evaluation fee identified in Article 4 of the General Conditions.
         2. Manufacturer’s installation instructions shall be provided along with product data.
         3. Submittals shall be provided in the order in which they are specified and tabbed (for combined submittals).
         4. Product Data: For each type of product.

Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for showers[**and basins**].

Include rated capacities, operating characteristics, and furnished specialties and accessories.

* + - * 1. Sustainable Design Submittals:
      1. CLOSEOUT SUBMITTALS
         1. Maintenance Data: For shower faucets to include in maintenance manuals.
      2. MAINTENANCE MATERIAL SUBMITTALS
         1. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

Faucet Washers and O-Rings: Equal to [**10**] <**Insert number**> percent of amount of each type and size installed.

Faucet Cartridges and O-Rings: Equal to [**5**] <**Insert number**> percent of amount of each type and size installed.

1. PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products. For an explanation of options and Contractor's product selection procedures.

Do not use same shower designation as is used for another shower in Section 224100 "Residential Plumbing Fixtures," Section 224300 "Medical Plumbing Fixtures," Section 224500 "Emergency Plumbing Fixtures," and Section 224600 "Security Plumbing Fixtures."

* + - 1. INDIVIDUAL SHOWERS

Copy "Individual FRP Showers" paragraph below and re-edit for each type of individual FRP shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each shower.

* + - * 1. Individual FRP Showers <**Insert drawing designation**>:

General: FRP[**, accessible,**] shower enclosure with faucet and receptor[**and appurtenances].**

Standard: ANSI Z124.1.2.

Type: [**One-piece unit with top**] [**One-piece unit without top**] [**Sectional unit with top**] [**Sectional unit without top**].

Style: [**Standard residential**] [**Handicapped/wheelchair**].

Coordinate "Faucet" subparagraph below with "Shower Faucets" Article.

Faucet: <**Insert faucet designation from "Shower Faucets" Article**>.

Nominal Size and Shape: [**30 by 30 inches square**] [**32 by 32 inches square**] [**34 by 34 inches square**] [**36 by 36 inches square**] [**48 by 34 to 36 inches rectangular**] [**60 by 34 to 36 inches rectangular**] [**36 inches neo-corner (two walls)**] [**36 inches neo-corner (four walls)**] [**38 inches neo-corner (two walls)**] [**38 inches neo-corner (four walls)**] [**42 inches neo-corner (two walls)**] [**42 inches neo-corner (four walls)**] <**Insert dimensions**>.

Color: [**White**] <**Insert color**>.

Bathing Surface: Slip resistant according to ASTM F462.

Outlet: Drain with [**NPS 2**] <**Insert size**> outlet.

"Shower Rod and Curtain" and "Grab Bar" subparagraphs below are useful appurtenances.

Shower Rod and Curtain: [**Not required**] [**Required**].

Grab Bar: [**ASTM F446, mounted on support area back wall**] [**Not required**].

Copy "Individual PMMA Showers" paragraph below and re-edit for each type of individual PMMA shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each shower.

* + - * 1. Individual PMMA Showers <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2647) Subject to compliance with requirements, provide products by one of the following:

[Aqua Bath Company, Inc](http://www.specagent.com/Lookup?uid=123457043710).

[Crane Plumbing, LLC; a division of American Standard](http://www.specagent.com/Lookup?uid=123457043707).

[Jacuzzi Inc](http://www.specagent.com/Lookup?uid=123457043708).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457043712).

Approved equivalent.

General: PMMA shower enclosure with faucet and receptor[**and appurtenances**].

Standard: ANSI Z124.1.2.

Type: [**One-piece unit with top**] [**One-piece unit without top**] [**Sectional unit with top**] [**Sectional unit without top**].

Style: [**Standard residential**] [**Handicapped/wheelchair**].

Coordinate "Faucet" subparagraph below with "Shower Faucets" Article.

Faucet: <**Insert faucet designation from "Shower Faucets" Article**>.

Nominal Size and Shape: [**30 by 30 inches square**] [**32 by 32 inches square**] [**34 by 34 inches square**] [**36 by 36 inches square**] [**48 by 34 to 36 inches rectangular**] [**60 by 34 to 36 inches rectangular**] [**36 inches neo-corner (two walls)**] [**36 inches neo-corner (four walls)**] [**38 inches neo-corner (two walls)**] [**38 inches neo-corner (four walls)**] [**42 inches neo-corner (two walls)**] [**42 inches neo-corner (four walls)**] <**Insert dimensions**>.

Color: [**White**] <**Insert color**>.

Bathing Surface: Slip resistant according to ASTM F462.

Outlet: Drain with [**NPS 2**] <**Insert size**> outlet.

"Shower Rod and Curtain" and "Grab Bar" subparagraphs below are useful appurtenances.

Shower Rod and Curtain: [**Not required**] [**Required**].

Grab Bar: [**ASTM F446, mounted on support area back wall**] [**Not required**].

Copy "Individual Cabinet Showers" paragraph below and re-edit for each type of individual cabinet shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each cabinet shower.

* + - * 1. Individual Cabinet Showers <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2649) Subject to compliance with requirements, provide products by one of the following:

[E. L. Mustee & Sons, Inc](http://www.specagent.com/Lookup?uid=123457043718).

[Stern-Williams Co., Inc](http://www.specagent.com/Lookup?uid=123457043719).

[Willoughby Industries](http://www.specagent.com/Lookup?uid=123457187586).

Approved equivalent.

General: Factory-fabricated[**, accessible**] cabinet shower, with faucet and receptor.

Nominal Size: [**30 by 30 inches**] [**32 by 32 inches**] [**36 by 36 inches**] [**36 by 39 inches**] [**45 by 39 inches**] <**Insert dimensions**>.

Material: [**Steel**] [**Stainless steel**] [**Composite**] [**Plastic**], [**front**] [**corner**] [**front and rear**] access.

Color: [**Not applicable**] <**Insert color**>.

Accessibility Options: Grab bar and bench.

Coordinate "Faucet" subparagraph below with "Shower Faucets" Article.

Faucet: [**Manufacturer's standard fitting assembly**] <**Insert faucet designation from "Shower Faucets" Article**>.

Supplies: NPS 1/2 copper tubing[**with ball, gate, or globe valves**].

Drain: Grid, NPS 2.

* + - 1. SHOWER FAUCETS
         1. NSF Standard: Comply with NSF 61 Annex G, "Drinking Water System Components - Health Effects," for shower materials that will be in contact with potable water.

Copy "Shower Faucets" paragraph below and re-edit for each type of shower faucet required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each shower faucet.

* + - * 1. Shower Faucets <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2650) Subject to compliance with requirements, provide products by one of the following or approved equivalent:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457062836).

[American Standard](http://www.specagent.com/Lookup?uid=123457043688).

[Kohler Co](http://www.specagent.com/Lookup?uid=123457043690).

Approved equivalent.

Description: Single-handle, pressure-balance mixing valve with hot- and cold-water indicators; check stops; and shower head.

Faucet:

Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016.

Body Material: Solid brass.

Finish: Polished chrome plate.

Shower head flows in usage-based calculations are limited to 2.5 gpm per shower stall for LEED 2009 and 2.00 gpm for LEED v4, IgCC, and ASHRAE 189.1. Shower head flows for Green Globes prescriptive compliance are limited to 2.00 gpm.

Shower-Arm, Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**] [**2.5 gpm**].

Retain "EPA WaterSense" subparagraph below if required for Project. WaterSense labeling required for LEED v4 and IgCC.

EPA WaterSense: Required.

Mounting: [**Concealed**] [**Exposed**].

Operation: Single-handle, [**push-pull**] [**or**] [**twist or rotate**] control.

Antiscald Device: [**Integral with mixing valve**] [**Separate unit**] [**Not required**].

Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.

Supply Connections: NPS 1/2.

Shower Head:

Standard: ASME A112.18.1/CSA B125.1.

Type: [**Ball joint with arm and flange**] [**Without ball joint, but with arm and flange**] [**Ball joint and head integral with mounting flange**] [**Integral with mounting flange**] <**Insert type**>.

Shower Head Material: Metallic with chrome-plated finish.

Spray Pattern: [**Adjustable**] [**Fixed**].

Integral Volume Control: [**Not required**] [**Required**].

Retain "Shower-Arm, Flow-Control Fitting" subparagraph below only if option retained in "Type" subparagraph above includes arm and flange.

Shower-Arm, Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**].

Verify availability of feature in "Temperature Indicator" subparagraph below if required.

Temperature Indicator: [**Integral with faucet**] [**Not required**].

Insert number to complete drawing designation. Use these designations on Drawings to identify each shower faucet.

* + - * 1. Shower Faucets <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2652) Subject to compliance with requirements, provide products by one of the following or approved equivalent:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457062838).

[Chicago Faucets; Geberit Company](http://www.specagent.com/Lookup?uid=123457043720).

[Leonard Valve Company](http://www.specagent.com/Lookup?uid=123457043722).

Approved equivalent.

Description: Single-handle, thermostatic mixing valve with hot- and cold-water indicators; check stops; and shower head.

Faucet:

Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016.

Body Material: Solid brass.

Finish: Polished chrome plate.

Shower head flows in usage-based calculations are limited to 2.5 gpm per shower stall for LEED 2009 and 2.00 gpm for LEED v4, IgCC, and ASHRAE 189.1. Shower head flows for Green Globes prescriptive compliance are limited to 2.00 gpm.

Shower-Arm, Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**] [**2.5 gpm**].

Retain "EPA WaterSense" subparagraph below if required for Project. WaterSense labeling is required for LEED v4 and IgCC.

EPA WaterSense: Required.

Mounting: [**Concealed**] [**Exposed**].

Operation: Single-handle, [**push-pull**] [**or**] [**twist or rotate**] control.

Antiscald Device: [**Integral with mixing valve**] [**Separate unit**] [**Not required**].

Check Stops: Check-valve type, integral with or attached to body; on hot- and cold-water supply connections.

Supply Connections: NPS 1/2.

Shower Head:

Standard: ASME A112.18.1/CSA B125.1.

Type: [**Ball joint with arm and flange**] [**Without ball joint, but with arm and flange**] [**Ball joint and head integral with mounting flange**] [**Integral with mounting flange**] <**Insert type**>.

Shower Head Material: Metallic with chrome-plated finish.

Spray Pattern: [**Adjustable**] [**Fixed**].

Integral Volume Control: [**Not required**] [**Required**].

Retain "Shower-Arm, Flow-Control Fitting" subparagraph below only if option retained in "Type" subparagraph above includes arm and flange.

Shower-Arm, Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**].

Verify availability of feature in "Temperature Indicator" subparagraph below if required.

Temperature Indicator: [**Integral with faucet**] [**Not required**].

* + - 1. SHOWER BASINS

Copy "Shower Basins" paragraph below and re-edit for each type of shower basin required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each shower basin.

* + - * 1. Shower Basins <**Insert drawing designation**>: [**Cast-polymer**] [**FRP**] [**PMMA**] [**Precast-terrazzo**] [**Solid-surface**] shower basin.

Cast-Polymer Shower Basins:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=7519) Subject to compliance with requirements, provide products by one of the following:

[Florestone Products Co., Inc](http://www.specagent.com/Lookup?uid=123457043725).

[Inpro Corporation](http://www.specagent.com/Lookup?uid=123457127174).

[Sterling; a Kohler Company](http://www.specagent.com/Lookup?uid=123457187595).

Approved equivalent.

FRP Shower Basins:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=7520) Subject to compliance with requirements, provide products by one of the following:

[E. L. Mustee & Sons, Inc](http://www.specagent.com/Lookup?uid=123457043730).

[Florestone Products Co., Inc](http://www.specagent.com/Lookup?uid=123457043727).

[LASCO Bathware](http://www.specagent.com/Lookup?uid=123457043728).

Approved equivalent.

PMMA (Acrylic) Shower Basins:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=7521) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457043733).

[Florestone Products Co., Inc](http://www.specagent.com/Lookup?uid=123457043735).

[LASCO Bathware](http://www.specagent.com/Lookup?uid=123457043738).

[Swan Corporation (The)](http://www.specagent.com/Lookup?uid=123457187596).

Approved equivalent.

Precast-Terrazzo Shower Basins:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=7522) Subject to compliance with requirements, provide products by one of the following:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457043741).

[Florestone Products Co., Inc](http://www.specagent.com/Lookup?uid=123457043743).

[Stern-Williams Co., Inc](http://www.specagent.com/Lookup?uid=123457043744).

Approved equivalent.

Solid-Surface Shower Basins:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=7523) Subject to compliance with requirements, provide products by one of the following:

[American Standard](http://www.specagent.com/Lookup?uid=123457145874).

[Swan Corporation (The)](http://www.specagent.com/Lookup?uid=123457043745).

[Willoughby Industries](http://www.specagent.com/Lookup?uid=123457187355).

Approved equivalent.

General: [**Cast-polymer**] [**FRP**] [**PMMA**] [**Precast-terrazzo**] [**Solid-surface**] base for built-up-type shower fixture.

Retain one of three "Standard" subparagraphs below that matches basin material.

Standard: ANSI Z124.1.3 for [**cast-polymer**] [**FRP**] [**PMMA**] bases.

Standard: IAPMO PS 99 for precast-terrazzo material.

Standard: ANSI/ICPA SS-1 for solid-surface material.

Type: [**Standard residential**] [**Handicapped/wheelchair**].

Nominal Size and Shape: [**30 by 30 inches square**] [**32 by 32 inches square**] [**36 by 36 inches square**] [**42 by 34 to 36 inches rectangular**] [**48 by 34 to 36 inches rectangular**] [**36 inches neo-corner**] [**42 inches neo-corner**] <**Insert dimensions**>.

Color: [**White**] <**Insert color**>.

Outlet: Drain with [**NPS 2**] <**Insert size**> outlet.

Bathing Surface: Slip resistant according to ASTM F462.

* + - 1. GROUP SHOWERS

Copy "Group Column Showers" paragraph below and re-edit for each type of group column shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each group column shower.

* + - * 1. Group Column Showers <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2661) Subject to compliance with requirements, provide products by the following:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457043747).

Approved equivalent.

Caution: These fixtures require a trap with waste and vent connections for installation in the base and must have vertical vent piping through the top of unit, or they may be installed with trap and vent under the floor below the fixture.

Description: Stainless-steel, column shower fixture with individual nozzles.

Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016.

Metal Nominal Thickness: [**0.050 inch minimum**] [**0.063 inch**].

Number of Shower Nozzles: [**Two**] [**Three**] [**Four**] [**Five**] [**Six**].

Height to Nozzles: [**66 inches**] [**72 inches**] <**Insert dimension**>.

Retain one of two "Control" subparagraphs below. Many option combinations exist besides those below.

Control: [**Thermostatic**] [**Pressure-balance**] mixing valve with hot- and cold-water operation.

Control: Thermostatic mixing valve with individual, tempered-water supply and push-button operation.

Shower head flows in usage-based calculations are limited to 2.5 gpm per shower stall for LEED 2009 and 2.00 gpm for LEED v4, IgCC, and ASHRAE 189.1. Shower head flows for Green Globes prescriptive compliance are limited to 2.00 gpm.

Shower-Arm, Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**] [**2.5 gpm**] for each shower head.

Retain "EPA WaterSense" subparagraph below if required for Project. WaterSense labeling is required for LEED v4 and IgCC.

EPA WaterSense: Required.

Liquid Soap Dispenser: [**Not required**] [**Required**] for each shower head.

Soap Dish: [**Not required**] [**Required**] for each shower head.

Mounting: Floor flange.

Supplies: [**NPS 3/4**] [**NPS 1**] copper tubing with shutoff valve from [**bottom**] [**top**].

Shroud: [**Not required**] [**Stainless steel of size to cover supplies and vent piping**].

Drain Fitting: [**NPS 3**] [**NPS 4**] outlet with NPS 2 vent, integral with base of column.

Copy "Group Wall-Mounted Showers" paragraph below and re-edit for each type of group wall-mounted shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each group wall-mounted shower.

* + - * 1. Group Wall-Mounted Showers <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2663) Subject to compliance with requirements, provide products by one of the following:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457043701).

[Willoughby Industries](http://www.specagent.com/Lookup?uid=123457043703).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457043700).

Approved equivalent.

Description: Stainless-steel, wall-mounted, surface-enclosure shower fixture with individual nozzles.

Standards: ASME A112.18.1/CSA B125.1 and ASSE 1016.

Metal Nominal Thickness: [**0.050 inch minimum**] [**0.063 inch**].

Number of Shower Nozzles: [**Two**] [**Three**].

Height to Nozzles: [**66 inches**] [**72 inches**] <**Insert dimension**>.

Retain one of two "Control" subparagraphs below. Many option combinations exist besides those below.

Control: [**Thermostatic**] [**Pressure-balance**] valve with individual hot- and cold-water mixing-valve operation.

Control: Thermostatic valve with individual, tempered-water supply and push-button operation.

Shower head flows in usage-based calculations are limited to 2.5 gpm per shower stall for LEED 2009 and 2.00 gpm for LEED v4, IgCC, and ASHRAE 189.1. Shower head flows for Green Globes prescriptive compliance limited to 2.00 gpm.

Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**] [**2.5 gpm**] for each shower head.

Retain "EPA WaterSense" subparagraph below if required for Project. WaterSense labeling required for LEED v4 and IgCC.

EPA WaterSense: Required.

Liquid Soap Dispenser: [**Not required**] [**Required**] for each shower head.

Soap Dish: [**Not required**] [**Required**] for each shower head.

Mounting: Wall bracket.

Supplies: NPS 3/4 copper tubing with valves.

* + - 1. OUTDOOR SHOWERS

Copy "Outdoor Plastic Showers" paragraph below and re-edit for each type of outdoor plastic shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each outdoor shower.

* + - * 1. Outdoor Plastic Showers <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2665) Subject to compliance with requirements, provide products by one of the following:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457187592).

[ShowerTower Inc](http://www.specagent.com/Lookup?uid=123457043750).

Approved equivalent.

Description: Freestanding, plastic group-shower fixture.

Number retained in "Number of Shower Stations" subparagraph below must be limited to a combined total of six. Two showers and one foot wash are typical.

Number of Shower Stations: [**One**] [**Two**] [**Three**] [**Four**] <**Insert number up to six**> with individual, self-closing control valve(s).

Nozzles: With adjustable spray pattern; fixed, on column.

Control: Push button and timer.

Maximum Flow: 2.5 gpm for each shower head.

Number of Foot-Wash Stations: [**One**] [**Two**] <**Insert number**> with individual, self-closing control valve(s).

Hose Bibb: [**Not**] [**One**] required.

Control-Valve Mounting Height: [**50 inches**] [**48 inches**].

Material: Cast-filled-polymer plastic.

Color: [**Gray**] <**Insert color**>.

Internal Piping: Factory installed.

Mounting: Base flange with bolt holes.

Copy "Outdoor Steel Showers" paragraph below and re-edit for each type of outdoor steel shower required.

Insert number to complete drawing designation. Use these designations on Drawings to identify each outdoor shower.

* + - * 1. Outdoor Steel Showers <**Insert drawing designation**>:

[Manufacturers:](http://www.specagent.com/Lookup?ulid=2667) Subject to compliance with requirements, provide products by one of the following:

[Acorn Engineering Company; a Division of Morris Group International](http://www.specagent.com/Lookup?uid=123457187395).

[Zurn Industries, LLC](http://www.specagent.com/Lookup?uid=123457187397).

Approved equivalent.

Description: Freestanding, steel, group-shower fixture.

Number of Shower Stations: [**Four or more**] <**Insert value**> with individual, self-closing control valve(s).

Nozzles: Fixed, on column.

Control: Push button and timer.

Maximum Flow: 2.5 gpm for each shower head.

Shower head flows in usage-based calculations are limited to 2.5 gpm per shower stall for LEED 2009 and 2.00 gpm for LEED v4, IgCC, and ASHRAE 189.1. Shower head flows for Green Globes prescriptive compliance limited to 2.00 gpm.

Flow-Control Fitting: [**Not required**] [**1.5 gpm**] [**2.0 gpm**] [**2.5 gpm**] for each shower head.

Retain "EPA WaterSense" subparagraph below if required for Project. WaterSense labeling required for LEED v4 and IgCC.

EPA WaterSense: Required.

Number of Foot-Wash Stations: [**Not required**] [**One**] [**Two**] with individual, self-closing control valve(s).

Material: Painted steel pipe.

Color: [**Blue**] <**Insert color**>.

Internal Piping: Factory installed.

Mounting: Base flange with bolt holes.

* + - 1. GROUT
         1. Standard: ASTM C1107, Grade B, post-hardening and volume-adjusting, dry, hydraulic-cement grout.
         2. Characteristics: Nonshrink; recommended for interior and exterior applications.
         3. Design Mix: 5000-psi, 28-day compressive strength.
         4. Packaging: Premixed and factory packaged.

1. EXECUTION
   * + 1. EXAMINATION
          1. Examine roughing-in of water-supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before shower installation.
          2. Examine walls and floors for suitable conditions where showers will be installed.
          3. Proceed with installation only after unsatisfactory conditions have been corrected.
       2. INSTALLATION
          1. Assemble shower components according to manufacturers' written instructions.
          2. Install showers level and plumb according to roughing-in drawings.
          3. Install water-supply piping with stop on each supply to each shower faucet.

Exception: Use ball or gate valves if supply stops are not specified with shower. Comply with valve requirements specified in Section 220523.12 "Ball Valves for Plumbing Piping" and Section 220523.15 "Gate Valves for Plumbing Piping."

Install stops in locations where they can be easily reached for operation.

* + - * 1. Install shower flow-control fittings with specified maximum flow rates in shower arms.
        2. Set [**shower receptors**] [**and**] [**shower basins**] in leveling bed of cement grout.
        3. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations. Use deep-pattern escutcheons if required to conceal protruding fittings. Comply with escutcheons requirements specified in Section 220518 "Escutcheons for Plumbing Piping."

Retain paragraph below if sealants are not specified in Section 079200 "Joint Sealants."

* + - * 1. Seal joints between showers and floors and walls using sanitary-type, one-part, mildew-resistant silicone sealant. Match sealant color to fixture color. Comply with sealant requirements specified in Section 079200 "Joint Sealants."
      1. CONNECTIONS

Coordinate piping installations and specialty arrangements with schematics on Drawings and with requirements specified in piping systems. If Drawings are explicit enough, these requirements may be reduced or omitted.

* + - * 1. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.
        2. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
        3. Comply with traps and soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
      1. ADJUSTING
         1. Operate and adjust showers and controls. Replace damaged and malfunctioning showers, fittings, and controls.
         2. Adjust water pressure at faucets to produce proper flow.
      2. CLEANING AND PROTECTION
         1. After completing installation of showers[**and basins**], inspect and repair damaged finishes.
         2. Clean showers[**and basins**], faucets, and other fittings with manufacturers' recommended cleaning methods and materials.
         3. Provide protective covering for installed fixtures and fittings.
         4. Do not allow use of showers[**and basins**] for temporary facilities unless approved in writing by Director’s Representative.

END OF SECTION 224223