

SECTION 22 4000 - PLUMBING FIXTURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. (LAV) Lavatories.
- B. (SH) Showers.
- C. (UR) Urinals
- D. (WC) Water closets.

1.2 RELATED REQUIREMENTS

- A. Division 01 Specifications
- B. Section 07 9005 - Joint Sealers: Seal fixtures to walls and floors.
- C. Section 22 1005 - Plumbing Piping.
- D. Section 22 1006 - Plumbing Piping Specialties.
- E. Section 22 3000 - Plumbing Equipment.

1.3 REFERENCE STANDARDS

- A. ANSI Z358.1 - American National Standard for Emergency Eyewash and Shower Equipment; 2004.
- B. ASHRAE Std 18 - Methods of Testing for Rating Drinking-Water Coolers with Self-Contained Mechanical Refrigeration; 2006.
- C. ARI 1010 - Self-Contained, Mechanically-Refrigerated Drinking-Water Coolers; Air-Conditioning and Refrigeration Institute; 2002.
- D. ASME A112.6.1M - Supports for Off-the-Floor Plumbing Fixtures for Public Use; The American Society of Mechanical Engineers; 1997 (Reaffirmed 2002).
- E. ASME A112.18.1 - Plumbing Supply Fittings; The American Society of Mechanical Engineers; 2005.

- F. ASME A112.19.2 - Vitreous China Plumbing Fixtures and Hydraulic Requirements for Water Closets and Urinals; The American Society of Mechanical Engineers; 2008.
- G. ASME A112.19.3 - Stainless Steel Plumbing Fixtures; The American Society of Mechanical Engineers; 2008.
- H. ASME A112.19.5 - Trim for Water-Closet Bowls, Tanks and Urinals; The American Society of Mechanical Engineers; 2005.
- I. IBC - ICC - International Building Code
- J. IPC - ICC - International Plumbing Code

1.4 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide catalog illustrations of fixtures, sizes, rough-in dimensions, utility sizes, trim, and finishes.
- C. Samples: Submit two lavatory supply fittings.
- D. Manufacturer's Instructions: Indicate installation methods and procedures.
- E. Maintenance Data: Include fixture trim exploded view and replacement parts lists.
- F. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.
- G. Maintenance Materials: Furnish the following for Owners use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Supply two sets of faucet washers.

1.5 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

1.6 REGULATORY REQUIREMENTS

- A. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Accept fixtures on site in factory packaging. Inspect for damage.
- B. Protect installed fixtures from damage by securing areas and by leaving factory packaging in place to protect fixtures and prevent use.

1.8 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for electric water cooler.
- C. EXTRA MATERIALS
 - 1. See Section 01 6000 - Project Requirements, for additional provisions.
 - 2. Supply two sets of faucet washers, flush valve service kits, lavatory supply fittings, and toilet seats.
 - 3. Supply two

PART 2 PRODUCTS

2.1 (LAV-#) LAVATORIES

- A. Manufacturers:
 - 1. Basin: (Vitreous China)
 - a. American Standard Inc: www.americanstandard.com.
 - b. Kohler Company: www.kohler.com.
 - c. Sloan Valve Company: www.sloanvalve.com.
 - d. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.
 - 2. Manual Faucets:
 - a. Chicago: www.chicagofaucets.com.
 - b. Moen Commercial: www.moen.com.
 - c. T&S Brass: www.tsbrass.com
 - d. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.
 - 3. Carriers:
 - a. JOSAM Company: www.josam.com.
 - b. J.R. Smith Company: www.jrsmith.com.
 - c. Mifab Drainage Products
 - d. Zurn Industries, Inc: www.zurn.com.

- e. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.
- B. (LAV-#) LAVATORY, VITREOUS CHINA, WALL HUNG – (Family Toilet Room) Refer to Drawings for locations.
- 1. Vitreous China Wall Hung Basin: ASME A112.19.2; vitreous China wall hung lavatory, 20 by 18 inch minimum, with 4 inch high backsplash, rectangular basin with splash lip, front overflow, and soap depression. Provide standard and ADA height units as designated on the Architectural Interior Elevation Plans.
 - a. Drilling Centers: 4 inch.
 - b. Color: White
 - c. Basis of Design: Kohler; Kingston K-2005, 21-1/4" x 18-1/8", wall hung, drilled for concealed arm carrier system
 - d. Basis of Design: American Standard: Lucerne 0355.012, 20-1/2" x 18-1/4", wall hung, drilled for concealed arm carrier system
 - 2. Manual Faucet (Wrist Blade Handle): Solid cast brass, chrome plated, deck mounted
 - a. Mounting: 4"centers
 - b. Spout Style: Standard.
 - c. Valve: ceramic cartridge with rotation limit stop
 - d. Handles: Dual wrist blade handles with H&C color coded indicators
 - e. Water Supply: 1/2 inch IPS connections.
 - f. Aerator: Vandal resistant, 0.5 GPM
 - g. Finish: Polished chrome.
 - h. Basis of Design: Moen Commercial: Model 8215F05
 - 3. Accessories:
 - a. Mixing Valve: Below deck thermostatic tempering valve conforming to ASSE 1070 standard.
 - b. Chrome plated 17 gage brass P-trap with clean-out plug and arm with escutcheon.
 - c. Chrome plated perforated grid strainer.
 - d. Heavy Duty, Loose key/Screwdriver operated, 1/4 turn, chrome plated angle stops.
 - e. Flexible chrome plated copper supplies.
 - f. LavGuard Drain and Supply Insulating covers, conforming to IAPMO standard PS94-2008 Section 3.5, ASTM E84. Truebro LavGuard or equal.
 - g. LavShield Drain and Supply shield, conforming to IAPMO standard PS94-2008 Section 3.5, ASTM E84, ANSI A117.1/ADA compliant. Custom manufactured to fit underside of lavatory basin. Stainless steel fasteners. Truebro LavShield or equal.
 - 4. Carrier:
 - a. ASME A112.6.1M; cast iron and steel frame with tubular legs, lugs for floor and wall attachment, concealed arm supports, bearing plate and studs.

2.2 (SH-#) SHOWERS

A. Manufacturers

1. Controls/Valving
 - a. Powers Controls: www.powerscontrols.com
 - b. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.

B. (SH-#A) MODULAR PANEL SHOWER UNIT w/MANUAL TEMPERATURE CONTROL - ACCESSIBLE (Family Toilet Room)

1. Surround/Base - Surround and Base including grab bars and accessories by G.C.
 - a. Drain - Provide FD-1 floor drain with sediment bucket option
2. Control Valve and Accessories
 - a. Surface Mounted - Stainless Steel modular panel system
 - b. e700 series T&P mixing valve(ASSE 1016 Type T/P) with deluxe metal handle, hot and cold water supply
 - c. Fixed shower head
 - d. Diverter valve for hand shower w/deluxe metal handle
 - e. Deluxe hand shower with inline vacuum breaker, quick disconnect fitting, and wall hook
 - f. Less soap dish
 - g. Basis of Design:
 - 1) Powers Controls: Hydropanel II Model 450-7108 w/following options: ES-P-141-150 Low Flow Handshower with non-positive shutoff device, 141804A quick disconnect coupling, and 141161D Wall hook

2.3 (UR-#) URINALS

A. Manufacturers:

1. Urinal
 - a. American Standard Inc: www.americanstandard.com.
 - b. Kohler Company: www.kohler.com.
 - c. Sloan Valve Company: www.sloanvalve.com.
 - d. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.
2. Flush Valves:
 - a. Sloan Valve Company: www.sloanvalve.com.
 - b. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.

3. Carriers:
 - a. JOSAM Company: www.josam.com.
 - b. J.R. Smith Company: www.jrsmith.com.
 - c. Mifab Drainage Products
 - d. Zurn Industries, Inc: www.zurn.com.
 - e. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.

B. (UR-#) URINAL - WALL HUNG (Family Toilet Room)

1. Urinal: Vitreous China, white, stain resistant antimicrobial finish; ASME A112.19.2, washout style, wall hung with side shields and concealed carrier. Mount at standard and ADA height units as designated on Architectural Interior Elevation Plans.
 - a. Flush Volume: 0.125 gpf - 1.0 gpf
 - b. Flush Style: Washout.
 - c. Supply Connection: Exposed (top spud).
 - d. Trap: Integral.
 - e. Removable stainless steel strainer.
 - f. Supply Size: 3/4 inch.
 - g. Outlet Size: 2 inches.
 - h. Basis of Design:
 - 1) American Standard Inc; Model Washbrook 6590.001EC, wall hung, top spud, with everclean
 - 2) Kohler; Bardon K-4991-ET-0, wall hung, top spud, with antimicrobial finish
2. Flush Valve (Manual): ASME A112.18.1, diaphragm type, complete with vacuum breaker stops and accessories.
 - a. Manual-Operated Type: Oscillating, non-hold open handle
 - b. Exposed Type: Chrome plated, escutcheon, integral screwdriver stop.
 - c. Basis of Design:
 - 1) Sloan Valve Company; Model Royal 186-0.5
3. Carriers:
 - a. ASME A112.6.1M; compact adjustable cast iron and steel frame with tubular legs, lugs for floor and wall attachment, threaded fixture studs for fixture hanger, bearing studs.

2.4 (WC-#) WATER CLOSETS

A. Manufacturers(All Water Closets)

1. Bowl:
 - a. American Standard Inc: www.americanstandard.com.
 - b. Kohler Company: www.kohler.com.
 - c. Sloan Valve Company: www.sloanvalve.com.
 - d. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.

2. Flush Valves:
 - a. Sloan Valve Company: www.sloanvalve.com.
 - b. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.
3. Seats:
 - a. American Standard: www.americanstandard.us.com
 - b. Kohler Company: www.kohler.com.
 - c. Bemis Manufacturing Company: www.bemismfg.com.
 - d. Olsonite: www.olsonite.com.
 - e. Kohler Company: www.kohler.com.
 - f. Zurn industries, Inc: www.zurn.com.
 - g. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.
4. Carriers:
 - a. JOSAM Company: www.josam.com.
 - b. J.R. Smith Company: www.jrsmith.com.
 - c. Mifab Drainage Products
 - d. Zurn Industries, Inc: www.zurn.com.
 - e. Other acceptable manufacturers offering equivalent products as approved by Architect/Owner prior to Bid. Refer to Division 01 specifications for additional information.

B. (WC-#) WATER CLOSET, WALL HUNG (Family Toilet Room) Refer to Drawings for locations.

1. Bowl: Vitreous China w/stain resistant antimicrobial finish, White, ASME A112.19.2, ANSI A117.1/ADA compliant, elongated rim, wall hung, siphon jet flush action, China bolt caps. Provide standard and ADA height units as designated on the Architectural Interior Elevation Plans.
 - a. Flush Volume: 1.1 - 1.6 gallon per flush
 - b. Supply Connection: 1-1/2 inch Top Spud
 - c. Outlet Size: 4 in.
 - d. Basis of Design:
 - 1) American Standard Inc; Model AFWall Millennium FloWise 3351.101 (wall hung, elongated, top spud)
 - 2) Kohler; Model Kingston Ultra K-84325-0 (wall hung, elongated, top spud)
2. Flush Valve (Manual): ASME A112.18.1, diaphragm type
 - a. Exposed Type: Chrome plated brass construction, complete with vacuum breaker, angle stop w/vandal resistant cap, sweat and solder kit with supply cover and escutcheon, and accessories.
 - b. Flush Control: Manual Type w/oscillating, non-hold open handle
 - c. Flush Volume: 1.6gpf
 - d. Basis of design:
 - 1) Sloan Valve Company; Royal Model 111-1.6

3. Seats:
 - a. Solid white plastic, elongated, open front, extended back, stainless steel self-sustaining hinge, stainless steel or brass bolts, without cover and anti-microbial finish.
4. Water Closet Carriers:
 - a. ASME A112.6.1M; adjustable compact cast iron frame, minimum 500 lbs. static load rating, integral drain hub and vent, metal nipple assembly, adjustable spud, lugs for floor and wall attachment, threaded fixture studs with nuts and washers. Provide horizontal and vertical drain units as required by installation methods.

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that walls and floor finishes are prepared and ready for installation of fixtures.
- B. Verify that electric power is available and of the correct characteristics.
- C. Confirm that millwork is constructed with adequate provision for the installation of counter top lavatories and sinks.

3.2 PREPARATION

- A. Rough-in fixture piping connections in accordance with minimum sizes indicated in fixture rough-in schedule for particular fixtures.

3.3 INSTALLATION

- A. Install each fixture with trap, easily removable for servicing and cleaning.
- B. Provide chrome plated rigid or flexible supplies to fixtures with loose key stops, reducers, and escutcheons.
- C. Install components level and plumb.
- D. Install and secure fixtures in place with wall carriers and bolts.
- E. Seal fixtures to wall and floor surfaces with sealant as specified in Section 07 9005, color to match fixture.
- F. Solidly attach water closets to floor with lag screws. Lead flashing is not intended hold fixture in place.

- G. Provide all transformers and low voltage wiring required for connection of plumbing fixtures. Install transformers and low voltage wiring in accordance with all manufacturers' requirements and recommendations. Line voltage power supply to the transformer shall be provided by the E.C.

3.4 INTERFACE WITH WORK OF OTHER SECTIONS

- A. Review millwork shop drawings. Confirm location and size of fixtures and openings before rough-in and installation.

3.5 ADJUSTING

- A. Adjust stops or valves for intended water flow rate to fixtures without splashing, noise, or overflow.

3.6 CLEANING

- A. Clean plumbing fixtures and equipment.

3.7 SCHEDULES

- A. Fixture Heights: Install fixtures to heights above finished floor as scheduled below, where not indicated otherwise on Architectural Interior Elevations and Drawings.
 - 1. Water Closet:
 - a. Standard: 15 inches to top of bowl.
 - b. Accessible: 18 inches (17 inches min. - 19 inches max.) to top of seat.
 - c. Accessible (Children's Use - age 12 and younger): 15 inches (11 inches - 17 inches)
 - 2. Water Closet Flush Valves:
 - a. Standard: 11 inches min. above bowl rim. (coordinate installation at Accessible locations with manufacturers recommendations.)
 - b. Accessible: 11 inches min. above bowl rim. max 44 inches above floor (field coordinate installation at Accessible locations with manufacturers recommendations and grab bar installation.)
 - 3. Urinal:
 - a. Standard: 24 inches to top of bowl rim.
 - b. Accessible: 16 inches (17 inches max.) to top of bowl rim.
 - 4. Lavatory:
 - a. Standard: 31 inches - 34 inches to top of basin rim.
 - b. Accessible: 34 inches(max.) to top of basin rim.
 - 5. Showers:
 - a. Standard: Male - 80 inches to showerhead, Female - 80 inches to showerhead.
 - b. Accessible: Locate all controls 38 inches minimum-48 inches max above floor (measured from floor to highest point of control)

- B. Fixture Rough-In Minimum rough in connection sizes indicated. Refer to plans for branch piping and DWV system connections)
1. Lavatory:
 - a. Hot Water: 1/2 Inch.
 - b. Cold Water: 1/2 Inch.
 - c. Waste: 1-1/2 Inch.
 2. Showers (refer to plans and product specifications for supplies required)
 - a. Hot Water: 1/2 Inch.
 - b. Cold Water: 1/2 Inch.
 - c. Tempered Water: 1/2 Inch.
 3. Urinal (Flush Valve Type):
 - a. Cold Water: 3/4 Inch.
 - b. Waste: 2 Inch.
 4. Water Closet (Flush Valve Type):
 - a. Cold Water: 1 Inch.
 - b. Waste: 4 Inch.

END OF SECTION