

**SECTION 22 40 00**  
**PLUMBING FIXTURES**

**PART 1 - GENERAL**

**1.1 SUMMARY**

A. This Section includes the following conventional plumbing fixtures and related components:

1. Faucets.
2. Flushometers.
3. Toilet seats.
4. Fixture supports.
5. Water closets.
6. Urinals.
7. Lavatories.
8. Sinks.
9. Service basins.
10. Drinking fountains

B. All plumbing fixture basis of design, accessories, and finishes are listed in the Plumbing Fixture Schedule in the construction documents. This specification section summarizes the information in the schedule and provides the direction for installations.

**1.2 SUBMITTALS**

A. Provide Product Data for each type of plumbing fixture indicated in the schedule. Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports. Indicate materials and finishes, dimensions, construction details, and flow-control rates.

B. Operation and Maintenance Data: For plumbing fixtures to include in emergency, operation, and maintenance manuals.

C. Warranty: Special warranty specified in this Section.

D. Provide cutsheets with water-sense labels where required.

## 1.3 QUALITY ASSURANCE

- A. Electrical Components, Devices, and Accessories: Listed and labeled as defined in NFPA 70, Article 100, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.
- B. All plumbing installations including equipment, valves, and solder methods shall conform to the Reduction of Lead in Drinking Water Act.
- C. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 90-480, "Architectural Barriers Act"; and Public Law 101-336, "Americans with Disabilities Act"; for plumbing fixtures for people with disabilities.
- D. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.
- E. Comply with the following applicable standards and other requirements specified for plumbing fixtures:
  - 1. Vitreous-China Fixtures: ASME A112.19.2M.
  - 2. Stainless-Steel Commercial Sinks: NSF 2 construction.
- F. Comply with the following applicable standards and other requirements specified for lavatory and sink faucets:
  - 1. Backflow Protection Devices for Faucets with Hose-Thread Outlet: ASME A112.18.3M.
  - 2. Faucets: ASME A112.18.1.
  - 3. NSF Potable-Water Materials: NSF 61.
  - 4. Pipe Threads: ASME B1.20.1.
  - 5. Sensor-Actuated Faucets and Electrical Devices: UL 1951.
  - 6. Supply Fittings: ASME A112.18.1.
  - 7. Brass Waste Fittings: ASME A112.18.2.
- G. Comply with the following applicable standards and other requirements specified for shower faucets:
  - 1. Backflow Protection Devices for Hand-Held Showers: ASME A112.18.3M.
  - 2. Combination, Pressure-Equalizing and Thermostatic-Control Antiscald Faucets: ASSE 1016.
  - 3. Hand-Held Showers: ASSE 1014.
  - 4. Hose-Coupling Threads: ASME B1.20.7.
  - 5. Pipe Threads: ASME B1.20.1.
- H. Comply with the following applicable standards and other requirements specified for miscellaneous fittings:
  - 1. Brass and Copper Supplies: ASME A112.18.1.
  - 2. Manual-Operation Flushometers: ASSE 1037.
  - 3. Brass Waste Fittings: ASME A112.18.2.

4. Sensor-Operation Flushometers: ASSE 1037 and UL 1951.
- I. Comply with the following applicable standards and other requirements specified for miscellaneous components:
  1. Disposers: ASSE 1008 and UL 430.
  2. Flexible Water Connectors: ASME A112.18.6.
  3. Hose-Coupling Threads: ASME B1.20.7.
  4. Off-Floor Fixture Supports: ASME A112.6.1M.
  5. Pipe Threads: ASME B1.20.1.
  6. Plastic Toilet Seats: ANSI Z124.5.
  7. Supply and Drain Protective Shielding Guards: ICC A117.1.

#### 1.4 WARRANTY

- A. Special Warranties: Manufacturer's standard form in which manufacturer agrees to repair or replace components of plumbing fixtures that fail in materials or workmanship within specified warranty period.
  1. Failures include, but are not limited to, the following:
    - a. Structural failures of unit.
    - b. Mechanical failures of any moving parts.
  2. Warranty Period for Commercial Applications: One year(s) from date of Substantial Completion.

#### PART 2 - PRODUCTS

##### 2.1 LAVATORY FAUCETS

- A. Lavatory Faucets, L-1:
  1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
    - a. American Standard Companies, Inc.
    - b. Sloan
    - c. Kohler Co.
  2. Description: 2-Handle, Centerset. Coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
    - a. Finish: Polished chrome plate

- b. Body material: Brass with brass valve bodies
- c. Faucet Holes: 4" centers for wall hanger or concealed arms support
- d. Mounting: Carrier wall hung, exposed.
- e. Maximum Flow Rate: 0.35 gpm, unless otherwise indicated.
- f. Operation: Wrist handles.
- g. Drain: Grid.
- h. Tempering Device: Mechanical. Contractor to adjust temperature in the field to approximately 100F and remove the tempering device handle.

## 2.2 JANITORS SINK FAUCET

### A. Sink Faucets, MR-1:

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. Fiat Products
  - b. Chicago Faucets.
  - c. Delta Faucet Company.
  - d. Elkay Manufacturing Co.
  - e. Speakman Company.
- 2. Description: Service sink faucet with stops in shanks, vacuum breaker, hose-thread outlet, and pail hook. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
  - a. Body Material: Commercial, solid brass.
  - b. Finish: Rough chrome plate.
  - c. Maximum Flow Rate: 2.5 gpm, unless otherwise indicated.
  - d. Mixing Valve: Two-lever handle.
  - e. Backflow Protection Device for Hose Outlet: Required.
  - f. Mounting: Back/wall, exposed.
  - g. Handle(s): Knob.
  - h. Spout Type: Rigid, solid brass.
  - i. Operation: Compression, manual.
  - j. Drain: Grid.

## 2.3 SINK FAUCETS

### A. Sink Faucets, S-1:

- 1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. American Standard Companies, Inc.

- b. Sloan
  - c. Kohler Co.
2. Description: Kitchen 2 handle wrist blade lever faucet without spray. Swivel gooseneck water outlet with 12" height. Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes; coordinate outlet with spout and fixture receptor.
- a. Body Material: Commercial, solid brass body with brass valve bodies.
  - b. Finish: Polished chrome plate.
  - c. Maximum Flow Rate: 1.5 gpm, unless otherwise indicated.
  - d. Mixing Valve: Two-lever handle.
  - e. Centers: 8 inches.
  - f. Mounting: Deck, exposed.
  - g. Handle(s): Lever.
  - h. Spout Type: Swivel gooseneck.
  - i. Spout Outlet: Aerator.
  - j. Operation: Compression, manual.
  - k. Drain: Grid.

## 2.4 FLUSHOMETERS

### A. Flushometers, WC-1 and U-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
- a. Sloan Valve Company.
  - b. American Standard
  - c. Zurn
2. Description: Flushometer for urinal and water-closet-type fixture. Include brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, copper or brass tubing, and polished chrome-plated finish on exposed parts.
- a. Internal Design: Diaphragm or piston operation.
  - b. Material: Valve Body, Cover, Tailpiece and Control Stop shall be in conformance with ASTM Alloy Classification for Semi-Red Brass. Valve in compliance with ASSE 1037, ANSI/ASME 113.19.6
  - c. Style: Exposed.
  - d. Inlet Size: NPS  $\frac{3}{4}$  urinal, NPS 1 water closet.
  - e. Trip Mechanism: Oscillating, lever-handle actuator.
  - f. Consumption: 0.125 gal./flush urinal, 1.6 gal/flush water closet
  - g. Tailpiece Size: NPS 1-1/4 urinal, NPS 1-1/2 water closet, and standard length to top of bowl.

## 2.5 TOILET SEATS

### A. Toilet Seats, WC-1:

1. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
  - a. American Standard Companies, Inc.
  - b. Kohler Co.
  - c. Zurn.
  - d. Sloan
2. Description: Toilet seat for water-closet-type fixture.
  - a. Material: Molded, solid polypropylene plastic.
  - b. Configuration: Open front without cover, elongated
  - c. Size: Elongated.
  - d. Hinge Type: CK, check.
  - e. Class: Standard commercial.
  - f. Color: White.

## 2.6 FIXTURE SUPPORTS

### A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Josam Company.
2. MIFAB Manufacturing Inc.
3. Smith, Jay R. Mfg. Co.
4. Tyler Pipe; Wade Div.
5. Watts Drainage Products Inc.; a div. of Watts Industries, Inc.
6. Zurn Plumbing Products Group; Specification Drainage Operation.

### B. Water-Closet Supports, WC-1:

1. Description: Combination carrier designed for accessible standard mounting height of wall-mounting, water-closet-type fixture. Include single or double, vertical or horizontal, hub-and-spigot or hubless waste fitting as required for piping arrangement; faceplates; couplings with gaskets; feet; and fixture bolts and hardware matching fixture. Include additional extension coupling, faceplate, and feet for installation in wide pipe space.

### C. Urinal Supports, U-1:

1. Description: Type I, urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture for wall-mounting, urinal-type fixture. Include steel uprights with feet.
2. Accessible-Fixture Support: Include rectangular steel uprights.

D. Lavatory Supports, L-1:

1. Description: Type II, lavatory carrier with concealed arms and tie rod for wall-mounting, lavatory-type fixture. Include steel uprights with feet.
2. Accessible-Fixture Support: Include rectangular steel uprights.

## 2.7 KITCHEN SINKS

A. Kitchen Sinks, S-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. American Standard
  - b. Kohler Co.
  - c. Sloan
2. Description: One-bowl, commercial, drop-in, cast-iron kitchen sink.
  - a. Overall Dimensions: 25"x22"x6.5"
  - b. Bowl:
    - 1) Drain: 3-1/2-inch outlet for disposer.
      - a) Location: Near back of bowl.
  - c. Sink Faucets: S-1, 1.5 gpm
  - d. Supplies: NPS 1/2 chrome-plated copper with stops.
  - e. Drain Piping: NPS 1-1/2 chrome-plated, cast-brass P-trap; 0.045-inch- thick tubular brass waste to wall;and wall escutcheon(s).

## 2.8 SERVICE BASINS

A. Service Basins, MR-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. Crane Plumbing, L.L.C./Fiat Products.
  - b. Precast Terrazzo Enterprises, Inc.
  - c. Zurn Plumbing Products Group; Light Commercial Operation.

2. Description: Flush-to-wall, floor-mounting, precast terrazzo fixture with rim guard.
  - a. Shape: Square.
  - b. Size: 32 by 32 inches.
  - c. Height: 12 inches.
  - d. Rim Guard: On all top surfaces.
  - e. Faucet: Sink MR-1.
  - f. Drain: Grid with NPS 2 outlet.

## 2.9 LAVATORIES

### A. Lavatories, L-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Sloan
  - c. Kohler Co.
2. Description: Accessible, wall-mounting, vitreous-china fixture.
  - a. Type: Wall-Hung.
  - b. Size: Approx 24"x21" rectangular.
  - c. Faucet Hole Punching: 4" centers for wall hanger or concealed arms support
  - d. Faucet Hole Location: Top.
  - e. Color: White.
  - f. Faucet: Lavatory L-1 0.35 gpm minimum.
  - g. Supplies: NPS 3/8 chrome-plated copper with stops.
  - h. Drain: Grid.
  - i. Drain Piping: NPS 1-1/4 chrome-plated, cast-brass P-trap; NPS 1-1/4, 0.032-inch-thick tubular brass waste to wall; and wall escutcheon.
  - j. Protective Shielding Guard(s): Required
  - k. Fixture Support: required for lavatory.

## 2.10 WATER CLOSETS

### A. Water Closets, WC-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Kohler Co.
  - c. Sloan
  - d. Zurn



2. Description Accessible, floor-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation.
  - a. Style: Flushometer valve.
    - 1) Bowl Type: Elongated with siphon-jet design.
    - 2) Design Consumption: 1.6 gal./flush.
    - 3) Color: White.
  - b. Flushometer: WC-1
  - c. Toilet Seat: required
  - d. Fixture Support: Required, water-closet support combination carrier.

## 2.11 URINALS

### A. Urinals, U-1:

1. Basis-of-Design Product: Subject to compliance with requirements, provide the product indicated on Drawings or a comparable product by one of the following:
  - a. American Standard Companies, Inc.
  - b. Kohler Co.
  - c. American Standard
  - d. Zurn
2. Description: Accessible, wall-mounting, back-outlet, vitreous-china fixture designed for flushometer valve operation.
  - a. Type: Blowout.
  - b. Strainer or Trapway: Integral cast strainer with integral trap.
  - c. Design Consumption: 0.125 gal./flush.
  - d. Color: White.
  - e. Supply Spud Size: NPS 1-1/4.
  - f. Outlet Size: NPS 2.
  - g. Flushometer: required
  - h. Fixture Support: required, urinal chair carrier.

## 2.12 DRINKING FOUNTAINS

### A. Drinking Fountains DF-1: Stainless steel, low/high double bowl, recessed with bottle filler.

1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
  - a. Elkay Manufacturing Co.

2. Standard: Comply with NSF 61.
  3. Receptor Shape: Concave with flush wall flange.
  4. Bubbler: One, with adjustable stream regulator, located on deck, refrigerated self-contained.
  5. Control: Push button.
  6. Drain: Grid with NPS 1-1/4 minimum horizontal waste and trap, complying with ASME A112.18.2/CSA B125.2.
  7. Supply: NPS 3/8 with shutoff valve.
  8. Support: Mounting frame or brackets for attaching to substrate.
- B. Drinking Fountains DF-2: 316 Stainless steel, wall mounted, two bowl, with bottle filler.
1. Basis-of-Design Product: Subject to compliance with requirements, provide product indicated on Drawings or comparable product by one of the following:
    - a. Elkay Manufacturing Co.
  2. Standard: Comply with NSF 61.
  3. Receptor Shape: Concave.
  4. Bubbler: One, with adjustable stream regulator, located on deck. Non-refrigerated.
  5. Control: Push button.
  6. Drain: Grid with NPS 1-1/4 minimum horizontal waste and trap, complying with ASME A112.18.2/CSA B125.2.
  7. Supply: NPS 3/8 with shutoff valve.
  8. Support: Marine Grade Wall Mounted.

## PART 3 - EXECUTION

### 3.1 EXAMINATION

- A. Examine roughing-in of water supply and sanitary drainage and vent piping systems to verify actual locations of piping connections before plumbing fixture installation.
- B. Examine cabinets, counters, floors, and walls for suitable conditions where fixtures will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### 3.2 INSTALLATION

- A. Assemble plumbing fixtures, trim, fittings, and other components according to manufacturers' written instructions.
- B. Install off-floor supports, affixed to building substrate, for wall-mounting fixtures.

1. Use carrier supports with waste fitting and seal for back-outlet fixtures.
  2. Use carrier supports without waste fitting for fixtures with tubular waste piping.
- C. Install back-outlet, wall-mounting fixtures onto waste fitting seals and attach to supports.
- D. Install wall-mounting fixtures with tubular waste piping attached to supports.
- E. Install fixtures level and plumb according to roughing-in drawings.
- F. Install water-supply piping with stop on each supply to each fixture to be connected to water distribution piping. Attach supplies to supports or substrate within pipe spaces behind fixtures. Install stops in locations where they can be easily reached for operation.
- G. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.
- H. Install flushometer valves for accessible water closets and urinals with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.
- I. Install toilet seats on water closets.
- J. Install faucet-spout fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
- K. Install traps on fixture outlets.
1. Exception: Omit trap on fixtures with integral traps.
  2. Exception: Omit trap on indirect wastes, unless otherwise indicated.
- L. Install escutcheons at piping wall ceiling penetrations in exposed, finished locations and within cabinets and millwork. Use deep-pattern escutcheons if required to conceal protruding fittings. Escutcheons are specified in Division 22 Section "General Plumbing Requirements."
- 3.3 CONNECTIONS
- A. Piping installation requirements are specified in other Division 22 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect fixtures with water supplies, stops, and risers, and with traps, soil, waste, and vent piping. Use size fittings required to match fixtures.

### 3.4 FIELD QUALITY CONTROL

- A. Verify that installed plumbing fixtures are categories and types specified for locations where installed.
- B. Check that plumbing fixtures are complete with trim, faucets, fittings, and other specified components.
- C. Inspect installed plumbing fixtures for damage. Replace damaged fixtures and components.
- D. Test installed fixtures after water systems are pressurized for proper operation. Replace malfunctioning fixtures and components, then retest. Repeat procedure until units operate properly.

### 3.5 ADJUSTING

- A. Operate and adjust faucets and controls. Replace damaged and malfunctioning fixtures, fittings, and controls. Set maximum faucet discharge temperature at 100F.
- B. Adjust water pressure at faucets and flushometer valves to produce proper flow and stream.
- C. Replace washers and seals of leaking and dripping faucets and stops.

### 3.6 CLEANING

- A. Clean fixtures, faucets, and other fittings with manufacturers' recommended cleaning methods and materials. Do the following:
  - 1. Remove faucet spouts and strainers, remove sediment and debris, and reinstall strainers and spouts.
  - 2. Remove sediment and debris from drains.
- B. After completing installation of exposed, factory-finished fixtures, faucets, and fittings, inspect exposed finishes and repair damaged finishes.

### 3.7 PROTECTION

- A. Provide protective covering for installed fixtures and fittings.
- B. Do not allow use of plumbing fixtures for temporary facilities unless approved in writing by Owner.

END OF SECTION 22 4000

