

SECTION 224000 - PLUMBING FIXTURES

PART 1 - GENERAL

1.1 SUBMITTAL REQUIREMENTS

A. Product Data:

1. Provide product datasheets for all products specified under this section.
2. Clearly state full load amps (FLA), voltages (where applicable) and model numbers on all submittals.
3. Include material descriptions, dimensions of individual components and profiles, and finishes for fixtures.
4. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
5. Include diagrams for power, signal, and control wiring of automatic fixtures where applicable.

1.2 EXTRA MATERIALS

A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents as indicated below:

1. Faucet Washers and O-Rings: Equal to 10 percent of amount of each type and size installed but not less than one.
2. Faucet Cartridges and O-Rings: Equal to 5 percent of amount of each type and size installed but not less than one.
3. Filter Cartridges for Drinking Fountains and Water Coolers: Equal to 20 percent of quantity installed for each type and size indicated, but no fewer than 1 of each.

PART 2 - PRODUCTS

2.1 WATER CLOSETS

A. Water Closets:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Standard America.
 - b. Kohler Co.
 - c. Zurn Industries, LLC; Commercial Brass and Fixtures.

2.2 TOILET SEATS

A. Toilet Seats:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Standard America.
 - b. Bemis Manufacturing Company.
 - c. Centoco Manufacturing Corporation.
 - d. Church Seats.
 - e. Kohler Co.
 - f. Olsonite Seat Co.
 - g. Toto USA, Inc.
 - h. Zurn Industries, LLC; Commercial Brass and Fixtures.

2.3 LAVATORIES

A. Lavatories:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Standard America.
 - b. Kohler Co.
 - c. Zurn Industries, LLC; Commercial Brass and Fixtures.

2.4 STAINLESS STEEL SINKS

A. Stainless Steel Sinks:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Acorn Engineering Co.
 - b. Advance Tabco.
 - c. Amtekco Industries, Inc.
 - d. Elkay Manufacturing Co.
 - e. Just Manufacturing.
 - f. Eagle Group; Foodservice Equipment Division.

2.5 SERVICE SINKS

A. Service Sinks:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Standard America.
 - b. Kohler Co.
 - c. Zurn Industries, LLC; Commercial Brass and Fixtures.
 - d. Advance Tabco.
 - e. Eagle Group; Foodservice Equipment Division.
 - f. Amtekco Industries, Inc.
 - g. Elkay Manufacturing Co.
 - h. Griffin Products, Inc.
 - i. Just Manufacturing.

2.6 FAUCETS

A. Lavatory, Sink, Bathtub, and Shower Faucets:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Standard America.
 - b. Bradley Corporation.
 - c. Chicago Faucet Company.
 - d. Delta Faucet Company.
 - e. Elkay Manufacturing Co.
 - f. Just Manufacturing.
 - g. Kohler Co.
 - h. Speakman Company.
 - i. T & S Brass and Bronze Works, Inc.
 - j. Zurn Industries, LLC; Commercial Brass and Fixtures.
 - k. Symmons Industries, Inc.
 - l. Powers, Watts Water Technologies Co.
 - m. Sloan Valve Company.
 - n. Moen Incorporated.
 - o. Hydrotek International, Inc.
 - p. Cleveland Faucets Group, a Moen Inc. Brand

2.7 SHOWERS

A. Showers:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Acorn Engineering Company.

- b. Acryline USA, Inc.
- c. Aqua Bath Company, Inc.
- d. Aquatic Industries, Inc.
- e. American Standard America.
- f. Aqua Glass Corporation.
- g. Bradley Corporation.
- h. Clarion Bathware.
- i. Florestone Products Co., Inc.
- j. Jacuzzi, Inc.
- k. Jason International, Inc.
- l. Kohler Co.
- m. LASCO Bathware.
- n. MAAX.
- o. MAAX; Aker Division.
- p. Mustee, E. L. & Sons, Inc.
- q. Praxis Industries, LLC; Aquarius Bathware.
- r. Royal Baths Manufacturing Co.
- s. Swan Corporation (The).
- t. Sterling; a Kohler company.
- u. Stern-Williams Co., Inc.
- v. Toto USA, Inc.
- w. Tower Industries.
- x. Willoughby Industries, Inc.
- y. Zurn Industries, LLC; Commercial Brass and Fixtures.

2.8 DRINKING FOUNTAINS AND WATER COOLERS

A. Drinking Fountains and Water Coolers:

- 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Elkay Manufacturing Co.
 - b. Murdock; a division of Acorn Engineering Company.
 - c. Oasis International.
 - d. Haws Corporation.
 - e. Halsey Taylor.

2.9 EMERGENCY FIXTURES

A. Emergency Fixtures:

- 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Acorn Safety; a division of Acorn Engineering Company.

- b. Bradley Corporation.
- c. Guardian Equipment Co.
- d. Speakman Company.
- e. Chicago Faucet Company.

2.10 DISHWASHER AIR-GAP FITTINGS

A. Dishwasher Air-Gap Fittings:

- 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. B & K Industries, Inc.
 - b. Brass Craft Manufacturing; a subsidiary of Masco Corporation.
 - c. BrassTech Inc.
 - d. Dearborn Brass.
 - e. Geberit US.
 - f. Sioux Chief Manufacturing Company, Inc.
 - g. Watts Brass & Tubular; a division of Watts Water Technologies, Inc.

2.11 DISPOSERS

A. Disposers:

- 1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. American Standard America.
 - b. Franke Consumer Products, Inc.
 - c. InSinkErator.
 - d. KitchenAid.
 - e. Maytag.

2.12 SUPPLY FITTINGS

- A. Standard: ASME A112.18.1/CSA B125.1.
- B. Supply Piping: Chrome-plated-brass pipe or chrome-plated copper tube matching water-supply piping size. Include chrome-plated-brass or stainless-steel wall flange.
- C. Supply Stops: Chrome-plated-brass, one-quarter-turn, ball-type or compression valve with inlet connection matching supply piping.
- D. Risers:
 - 1. NPS 1/2.

2. Chrome-plated, rigid-copper-pipe and brass straight or offset tailpieces, chrome-plated, soft-copper flexible tube, ASME A112.18.6, braided- or corrugated-stainless-steel, flexible hose riser.

2.13 FIXTURE CARRIERS

A. Fixture Carriers:

1. Manufacturers: Subject to compliance with requirements, available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:
 - a. Josam manufacturing Company.
 - b. MIFAB, Inc.
 - c. Smith, Jay R. Mfr. Co.; Division of Smith Industries, Inc.
 - d. Tyler Pipe; Wade Div.
 - e. Watts Drainage Products Inc.
 - f. Zurn Plumbing Products Group; Specification Drainage Operation.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General Fixture Installation:

1. Install fixtures level and plumb according to manufacturer's rough-in drawings.

B. Traps:

1. Install traps on fixture outlets.
 - a. Exception: Omit trap on fixtures with integral traps.
 - b. Exception: Omit trap on indirect wastes unless otherwise indicated.

C. Water Closet Installation:

1. Install accessible, wall-mounted water closets at mounting height for handicapped/elderly, according to ICC/ANSI A117.1.
2. Install supports, affixed to building substrate, for floor-mounted, back-outlet water closets.
3. Use carrier supports with waste-fitting assembly and seal.

D. Flushometer-Valve Installation:

1. Install flushometer-valve, water-supply fitting on each supply to each flushometer fixture.
2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.

3. Install lever-handle flushometer valves for accessible fixtures with handle mounted on open side of fixture.
 4. Install actuators in locations that are easy for people with disabilities to reach.
- E. Toilet Seat Installation:
1. Place new toilet seat on bowl and align bolt holes with mounting holes in bowl. Hand tighten bolts, do not overtighten for risk of damaging vitreous china. Provide check hinges on open-front style toilet seats.
- F. Service Sink:
- G. Provide accessible check valves on the hot and cold-water supply piping serving all service sinks (including mop sinks).
- H. Lavatory, Sink, and Laundry Tray Installation:
1. Install level and plumb according to roughing-in drawings.
 2. Install supports, affixed to building substrate, for wall-mounted lavatories.
 3. Install accessible wall-mounted lavatories at handicapped/elderly mounting height for people with disabilities or the elderly, according to ICC/ANSI A117.1.
 4. Install protective shielding pipe covers and enclosures on exposed supplies and waste piping of accessible lavatories. Comply with requirements in Section 220719 "Plumbing Piping Insulation."
 5. Provide independent check valves in both hot and cold water supply piping serving thermostatic mixing valves.
- I. Faucet Installation:
1. Install faucet flow-control fittings with specified flow rates and patterns in faucet spouts if faucets are not available with required rates and patterns. Include adapters if required.
 2. Provide independent check valves in both hot and cold water supply piping serving thermostatic mixing valves.
 3. Install shower flow-control fittings with specified maximum flow rates in shower arms.
- J. Shower 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.
 - a. Exception: Use ball, gate, or globe valves if supply stops are not specified with shower. Comply with valve requirements specified in Section 220523 "General-Duty Valves for Plumbing Piping."
 - b. Install stops in locations where they can be easily reached for operation.

4. Install shower flow-control fittings with specified maximum flow rates in shower arms.
5. Provide independent check valves in both hot and cold water supply piping serving thermostatic mixing valves.
6. Set shower receptors and shower basins in leveling bed of cement grout.

K. Drinking Fountain and Water Cooler Installation:

1. Install recessed drinking fountains secured to wood blocking in wall construction.
2. Install off-the-floor carrier supports, affixed to building substrate, for wall-mounted fixtures.
3. Install water-supply piping with shutoff valve on supply to each fixture to be connected to domestic-water distribution piping. Use ball, gate, or globe valve. Install valves in locations where they can be easily reached for operation. Valves are specified in Section 220523 "General-Duty Valves for Plumbing Piping."

L. Emergency Fixture Installation:

1. Assemble emergency plumbing fixture piping, fittings, control valves, and other components.
2. Fasten fixtures to substrate.
3. Install shutoff valves in water-supply piping to fixtures. Use ball, gate, or globe valve if specific type valve is not indicated. Install valves chained or locked in open position if permitted. Install valves in locations where they can easily be reached for operation. Comply with requirements for valves specified in Section 220523 "General-Duty Valves for Plumbing Piping."
 - a. Exception: Omit shutoff valve on supply to group of plumbing fixtures that includes emergency equipment.
 - b. Exception: Omit shutoff valve on supply to emergency equipment if prohibited by authorities having jurisdiction.
4. Fill self-contained fixtures with flushing fluid.
5. Provide independent check valves in both hot and cold water supply piping serving thermostatic mixing valves.

M. Dishwasher Installation:

1. Install dishwasher air-gap fitting at each sink indicated to have air-gap fitting. Install in sink deck. Connect inlet hose to dishwasher and outlet hose to disposer.

N. Disposer Installation:

1. Install disposer in outlet of each sink indicated to have a disposer. Install switch where indicated or in wall adjacent to sink if location is not indicated

END OF SECTION 224000