

**SECTION 15410**  
**PLUMBING FIXTURES**

**PART 1 - GENERAL**

1.1 SUMMARY

- A. This Section includes plumbing fixtures and related components.
- B. See Division 15 Section "Drinking Fountains and Water Coolers."
- C. See Division 15 Section "Plumbing Specialties" for backflow preventers and specialty fixtures not in this Section.

1.2 DEFINITIONS

- A. Accessible Fixture: Plumbing fixture that can be approached, entered, and used by people with disabilities.

1.3 SUBMITTALS

- A. Product Data: Include selected fixture and trim, fittings, accessories, appliances, appurtenances, equipment, and supports and indicate materials and finishes, dimensions, construction details, and flow-control rates for each type of fixture indicated.
- B. Wiring Diagrams: Power, signal, and control wiring.
- C. Operation and maintenance data.

1.4 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. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities"; Public Law 101-336, "Americans with Disabilities Act"; about plumbing fixtures for people with disabilities.

- C. Regulatory Requirements: Comply with requirements in U.S. Architectural & Transportation Barriers Compliance Board's "Uniform Federal Accessibility Standards (UFAS), 1985-494-187" about plumbing fixtures for people with disabilities.
- D. Regulatory Requirements: Comply with requirements in Public Law 102-486, "Energy Policy Act," about water flow and consumption rates for plumbing fixtures.
- E. NSF Standard: Comply with NSF 61, "Drinking Water System Components--Health Effects," for fixture materials that will be in contact with potable water.
- F. Select combinations of fixtures and trim, faucets, fittings, and other components that are compatible.
- G. Comply with the following applicable standards and other requirements specified for plumbing fixtures:
  - 1. Enameled, Cast-Iron Fixtures: ASME A112.19.1M.
  - 2. Porcelain-Enameled, Formed-Steel Fixtures: ASME A112.19.4M.
  - 3. Vitreous-China Fixtures: ASME A112.19.2M.
  - 4. Water-Closet, Flush Valve, Tank Trim: ASME A112.19.5.
- H. Comply with the following applicable standards and other requirements specified for lavatory faucets:
  - 1. Faucets with Side Spray: ASME A112.18.3M.
  - 2. Faucets with Hose-Thread Outlet: ASME A112.18.3M.
  - 3. Hose Spray: ASSE 1025.
  - 4. Faucet Hose: ASTM D 3901.
  - 5. Faucets: ASME A112.18.1M.
  - 6. Hose-Connection Vacuum Breakers: ASSE 1011.
  - 7. NSF Materials: NSF 61.
  - 8. Supply and Drain Fittings: ASME A112.18.1M.
- I. Comply with the following applicable standards and other requirements specified for miscellaneous fittings:
  - 1. Atmospheric Vacuum Breakers: ASSE 1001.
  - 2. Brass and Copper Supplies: ASME A112.18.1M.
  - 3. Manual-Operation Flushometers: ASSE 1037.
  - 4. Tubular Brass Drainage Fittings and Piping: ASME A112.18.1M.
- J. Comply with the following applicable standards and other requirements specified for miscellaneous components:
  - 1. Floor Drains: ASME A112.21.1M.

2. Grab Bars: ASTM F 446.
3. Hose-Coupling Threads: ASME B1.20.7.
4. Off-Floor Fixture Supports: ASME A112.6.1M.
5. Plastic Toilet Seats: ANSI Z124.5.
6. Supply and Drain Protective Shielding Guards: ICC A117.1.

## **PART 2 - PRODUCTS**

### **2.1 MANUFACTURERS**

- A. In other Part 2 articles where subparagraph titles below introduce lists, the following requirements apply for product selection:
  1. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified.

### **2.2 LAVATORY FAUCETS**

- A. Lavatory Faucet: Include cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor.
  1. Products:
    - a. Chicago
    - b. T & S
  2. Maximum Flow Rate: 2.0 gpm (9.5 L/min.), unless otherwise indicated.
  3. Body Material: Copper or brass underbody with brass cover plate.
  4. Finish: Polished chrome plate.
  5. Type: Single-valve nonmixing.
  6. Centers: 4 inches (102 mm).
  7. Mounting: Deck, exposed.
  8. Handle(s): Push button.
  9. Inlet(s): NPS 1/2 (DN 15) male shank.
  10. Spout: Rigid.
  11. Spout Outlet: Spray.
  12. Operation: Automatic Self-closing.
  13. Drain: Grid.
  14. Tempering Device: Not required.

## 2.3 SINK FAUCETS

- A. Sink Faucet: Include hot- and cold-water indicators; coordinate faucet inlets with supplies and fixture holes and outlet with spout and fixture receptor.
1. Manufacturers:
    - a. Chicago Faucet
    - b. T & S
  2. Maximum Flow Rate: 2.5 gpm (9.5 L/min.), unless otherwise indicated.
  3. Body Material: Cast brass.
  4. Finish: Polished chrome plate Rough brass.
  5. Type: Kitchen faucet with spray, three-hole fixture.
  6. Mixing Valve: Two-lever handle.
  7. Backflow Protection Device for Hose Outlet: Required.
  8. Backflow Protection Device for Side Spray: Required.
  9. Centers: 4 inches (102 mm).
  10. Mounting: Deck, exposed.
  11. Handle(s): Lever.
  12. Inlet(s): NPS 1/2 (DN 15) male shank.
  13. Spout: Swing, round tubular.
  14. Spout Outlet: Swivel aerator/spray.
  15. Vacuum Breaker:
  16. Operation: Compression, manual.
  17. Drain: Grid.
  18. Tempering Device: Not required.

## 2.4 FLUSHOMETERS

- A. Flushometer: Cast-brass body with corrosion-resistant internal components, non-hold-open feature, control stop with check valve, vacuum breaker, and copper or brass tubing, and polished chrome-plated finish on exposed parts.
1. Manufacturers:
    - a. Sloan
    - b. Zurn
  2. Internal Design: Diaphragm operation.
  3. Style: Exposed.
  4. Inlet Size: NPS 1 (DN 25).

5. Trip Mechanism: Oscillating, lever-handle actuator.
6. Consumption: 1.0 gal./flush (3.8 L/flush).
7. Tailpiece Size: NPS 1-1/4 (DN 32) and length to top of bowl.

## 2.5 TOILET SEATS

### A. Toilet Seat: Solid plastic.

1. Manufacturers:
  - a. Sperzel
  - b. Olsonite
2. Configuration: Open front without cover.
3. Size: Elongated.
4. Class: Heavy-duty commercial.
5. Hinge Type: CK, check SS, self-sustaining SC, self-sustaining, check SR, self-raising.
6. Color: White.

## 2.6 PROTECTIVE SHIELDING GUARDS

### A. Protective Shielding Guard: Manufactured, plastic covering for hot- and cold-water supplies and trap and drain piping and complying with ADA requirements.

## 2.7 FIXTURE SUPPORTS

### A. Water-Closet Support: Water-closet combination carrier designed for accessible mounting height. 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.

1. Available Products: see schedules.

### B. Urinal Support: Type I, urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture. Include steel uprights with feet.

1. Available Products: see schedules.

### C. Lavatory Support: Type II, lavatory carrier with concealed arms and tie rod. Include steel uprights with feet.

1. Available Products: see schedules.

## 2.8 WATER CLOSETS

- A. Water Closets: Standard accessible, floor-mounting, floor-outlet, vitreous-china fixture designed for flushometer tank operation.

1. Available Products:

- a. American Standard, Inc.
- b. Kohler Co.

2. Style: Close coupled.

- a. Bowl Type: Elongated with siphon-jet design. Include bolt caps matching fixture.
- b. Height: Standard Accessible.
- c. Design Consumption: 1.6 gal./flush (6 L/flush).
- d. Tank: Flushometer-tank type with trim and pressurized tank. Include cover.
- e. Trip Mechanism: Lever-handle actuator.
- f. Color: White.

3. Supply: NPS 1/2 (DN 15) chrome-plated brass or copper with loose-key stop.

- B. Water Closets: Accessible, floor-mounting, floor-outlet, vitreous-china fixture designed for flushometer tank operation.

1. Available Products:

- a. American Standard, Inc.
- b. Kohler Co.

2. Style: Close coupled.

- a. Bowl Type: Elongated with siphon-jet design. Include bolt caps matching fixture.
- b. Height: Accessible.
- c. Design Consumption: 1.6 gal./flush (6 L/flush).
- d. Tank: Flushometer-tank type with trim and pressurized tank. Include cover.
- e. Trip Mechanism: Lever-handle actuator.
- f. Color: White.

3. Supply: NPS 1/2 (DN 15) chrome-plated brass or copper with loose-key stop.

## 2.9 URINALS

A. Urinals: Accessible, wall-hanging, bottom-outlet, vitreous-china fixture designed for flushometer valve operation.

1. Available Products:
  - a. American Standard, Inc.
  - b. Kohler Co.
2. Type: Blowout.
3. Strainer or Trapway: Integral cast strainer.
4. Design Consumption: 1 gal./flush (3.8 L/flush).
5. Color: White.
6. Supply Spud Size: NPS 3/4 (DN 20).
7. Outlet Size: NPS 1-1/2 (DN 40).
8. Drain Piping: NPS 1-1/2 (DN 40) chrome-plated cast-brass trap, 0.045-inch- (1.1-mm-) thick tubular brass waste to wall, and wall escutcheon.
9. Flushing Device: Fixture manufacturer's standard matching fixture.
10. Flushometer: Sloan Royal 180-1.0YB
11. Fixture Support: Urinal chair carrier.

## 2.10 LAVATORIES

A. Lavatories: Accessible, wall-hanging, vitreous-china fixture.

1. Products:
  - a. American Standard, Inc.
  - b. Kohler Co.
2. Type: With back.
3. Size: 20 by 18 inches (508 by 457 mm) rectangular.
4. Faucet Hole Punching: One Three, 4-inch (102-mm) centers, holes.
5. Faucet Hole Location: Top.
6. Color: White.
7. Faucet: Lavatory for separate drain.
8. Supplies: NPS 3/8 (DN 10) chrome-plated copper with stops.
9. Drain: Grid.
10. Drain Piping: NPS 1-1/4 (DN 32) chrome-plated cast-brass trap; NPS 1-1/2 (DN 40) thick tubular brass waste to wall; and wall escutcheon.
11. Hair Interceptor:
12. Protective Shielding Guard(s):

13. Fixture Support: Lavatory Chair Carrier

2.11 KITCHEN SINKS

A. Kitchen Sinks: Residential, counter-mounting, stainless-steel fixture.

1. Products:
  - a. Elkay Manufacturing Co.
  - b. Just Manufacturing Co.
2. Overall Size: 33 by 22 inches (813 by 508 mm).
3. Number of Compartments: Two.
4. First Compartment: With 3-1/2-inch (89-mm) crumb cup.
5. First Compartment Location: Left.
6. Second Compartment: Located on opposite side of first compartment; with 3-1/2-inch (89-mm) crumb cup.
7. Sink Faucet:
8. Supplies: NPS 1/2 (DN 15) chrome-plated copper with stops.
9. Drain Piping: NPS 1-1/2 (DN 40) chrome-plated cast-brass trap, 0.045-inch- (1.1-mm-) thick tubular brass waste to wall, and wall escutcheons.
10. Disposer:
11. Hot-Water Dispenser:

2.12 MOP SINK

A. Mop Sink: Flush-to-wall, floor-mounting molded stone basin with rim guard.

1. Available Products:
  - a. Acorn Engineering Co.
  - b. Fiat
2. Shape: Square.
3. Size: 24 by 24 inches (610 by 610 mm).
4. Height: 10 inches (255 mm).
5. Tiling Flange: On three sides.
6. Rim Guard: On front top surfaces.
7. Color: Not applicable.
8. Faucet: Sink
9. Drain: Grid with NPS 3 (DN 80) outlet

## 2.13 ELECTRIC WATER COOLERS (EWC):

1- Wall mounted, fully exposed, self closing valve with automatic stream regulator, barrier-free access push bottom in front, for handicapped and standard use. See architectural drawings for mounting elevations.

### 2- MANUFACTURES:

- a. ELKAY
- b. HALSEY TAYLOR
- c. HAWS

## 2.14 ELECTRIC WATER COOLERS:

3- Wall mounted, bi-level unit, self closing valve with automatic stream regulator, barrier-free access (Adult and Child) push bars in front and on both sides, for handicapped and standard use. See architectural drawings for mounting elevations.

### 4- MANUFACTURES:

- d. ELKAY
- e. OASIS
- f. HAWS

## **PART 3 - .EXECUTION**

### 3.1 FIXTURE INSTALLATION

- A. Assemble fixtures, trim, fittings, and other components according to manufacturers' written instructions.
- B. For wall-hanging fixtures, install off-floor supports affixed to building substrate.
  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.
  3. Use chair-type carrier supports with rectangular steel uprights for accessible fixtures.
- C. Install back-outlet, wall-hanging fixtures onto waste fitting seals and attach to supports.

- D. Install floor-mounting fixtures on closet flanges or other attachments to piping or building substrate.
- E. Install wall-hanging fixtures with tubular waste piping attached to supports.
- F. Install counter-mounting fixtures in and attached to casework.
- G. Install fixtures level and plumb according to manufacturers' written instructions and roughing-in drawings.
- H. 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.
  - 1. Exception: Use ball, or globe valve if stops are not specified with fixture. Refer to Division 15 Section "Valves" for general-duty valves.
- I. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.
- J. Install tubular waste piping on drain outlet of each fixture to be indirectly connected to drainage system.
- K. 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.
- L. Install toilet seats on water closets.
- M. 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.
- N. Install water-supply, flow-control fittings with specified flow rates in fixture supplies at stop valves.
- O. 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.
- P. Install traps on fixture outlets.
  - 1. Exception: Omit trap on fixtures with integral traps.

- Q. 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. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for escutcheons.
- R. Set service basins in leveling bed of cement grout. Refer to Division 15 Section "Basic Mechanical Materials and Methods" for grout.
- S. Seal joints between fixtures and walls, floors, and counters using sanitary-type, one-part, mildew-resistant, silicone sealant. Match sealant color to fixture color. Refer to Division 7 Section "Joint Sealants" for sealant and installation requirements.

### 3.2 CONNECTIONS

- A. Connect water supplies from water distribution piping to fixtures.
- B. Connect drain piping from fixtures to drainage piping.
- C. Supply and Waste Connections to Plumbing Fixtures: Connect fixtures with water supplies, stops, risers, traps, and waste piping. Use size fittings required to match fixtures. Connect to plumbing piping.
- D. Supply and Waste Connections to Fixtures and Equipment Specified in Other Sections: Connect fixtures and equipment with water supplies, stops, risers, traps, and waste piping specified. Use size fittings required to match fixtures and equipment. Connect to plumbing piping.

### 3.3 PROTECTION

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

**END OF SECTION**