

SECTION 15410 - PLUMBING FIXTURES**PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes plumbing fixtures and related components.
- B. Related Sections include the following:
 - 1. Division 15 Section "Plumbing Specialties" for backflow preventers and specialty fixtures not in this Section.

1.3 DEFINITIONS

- A. Accessible Fixture: Plumbing fixture that can be approached, entered, and used by people with disabilities.
- B. Fitting: Device that controls flow of water into or out of plumbing fixture. Fittings specified in this Section include supplies and stops, faucets and spouts, shower heads and tub spouts, drains and tailpieces, and traps and waste pipes. Piping and general-duty valves are included where indicated.

1.4 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. Shop Drawings: Diagram power, signal, and control wiring and differentiate between manufacturer-installed and field-installed wiring.
- C. Maintenance Data: For plumbing fixtures to include in maintenance manuals specified in Division 1.

1.5 QUALITY ASSURANCE

- A. Source Limitations: Obtain plumbing fixtures, faucets, and other components of each category through one source from a single manufacturer.
 - 1. Exception: If fixtures, faucets, or other components are not available from a single manufacturer, obtain similar products from other manufacturers specified for that category.
- B. 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.
- C. Regulatory Requirements: Comply with requirements in ICC A117.1, "Accessible and Usable Buildings and Facilities" and Public Law 101-336, "Americans with Disabilities Act"; about plumbing fixtures for people with disabilities.

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- 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. Hand Sinks: NSF 2 construction.
 - 2. Stainless-Steel Fixtures Other Than Service Sinks: ASME A112.19.3M.
 - 3. Vitreous-China Fixtures: ASME A112.19.2M.
- H. 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. Hose-Connection Vacuum Breakers: ASSE 1011.
 - 3. Hose-Coupling Threads: ASME B1.20.7.
 - 4. Sensor-Actuated Faucets and Electrical Devices: UL 1951.
 - 5. Supply and Drain Fittings: ASME A112.18.1M.
- I. 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. Faucets: ASME A112.18.1M.
 - 3. Hand-Held Showers: ASSE 1014.
 - 4. High-Temperature-Limit Controls for Thermal-Shock-Preventing Devices: ASTM F 445.
 - 5. Pipe Threads: ASME B1.20.1.
- J. 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.

1.6 COORDINATION

- A. Coordinate roughing-in and final plumbing fixture locations, and verify that fixtures can be installed to comply with original design and referenced standards.

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- A. For fixture descriptions in other Part 2 articles where the subparagraph "Products," and "Manufacturers" introduce a list of manufacturers and their products or manufacturers only, the following requirements apply for product selection:
1. Products: Subject to compliance with requirements, provide one of the products specified in other Part 2 articles.
 2. Manufacturers: Subject to compliance with requirements, provide products by the manufacturers specified in other Part 2 articles.

2.2 LAVATORIES

- A. Lavatories, P-1: Accessible, wall-hanging, vitreous-china fixture.
1. Products:
 - a) American Standard, Inc.; Lucerne.
 - b) Crane Plumbing/Fiat Products.
 - c) Kohler Co.
 - d) TOTO USA, Inc.
 - e) Sloan Optima; EBF-650.
 - f) Central Brass
 - g) Chicago Faucet.
 2. Size: 20 by 18 inches rectangular.
 3. Faucet Hole Punching: Three, 2-inch centers, hole[s].
 4. Faucet Hole Location: Top.
 5. Color: White.
 6. Faucet: Lavatory.
 - a) 2.2 gpm max flow rate.
 - b) Cast brass, polished chrome plate.
 - c) Battery powered infrared sensor.
 - d) Waterproof circuit control module.
 - e) Aerator Spout.
 7. Supplies: NPS 3/8 chrome-plated copper with stops.
 8. Drain: Grid.
 9. Drain Piping: NPS 1-1/4 chrome-plated cast-brass trap; NPS 1-1/4 thick tubular brass waste to wall; and wall escutcheon.
 10. Protective Shielding Guards: Required.
 11. Fixture Support: Lavatory Support with concealed arms include steel uprights with feet.

2.3 WATER CLOSETS

- A. Water Closets, P-2: Accessible wall mounting vitreous-china fixture designed for flushometer valve operation.

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1. Products:
 - a) American Standard, Inc.; Aftwall.
 - b) Crane Plumbing/Fiat Products.
 - c) Kohler Co.
 - d) TOTO USA, Inc.
 - e) Sloan Royall III.
 - f) Delany.
 - g) Zurn.
2. Style: Flushometer valve.
 - a) Bowl Type: Elongated with siphon-jet design.
 - b) Height: Accessible.
 - c) Design Consumption: 1.6 gal./flush.
 - d) Color: White.
3. Flushometer:
 - a) Piston operation.
 - b) Exposed with 1" inlet and 1-1/2" tail piece.
4. Toilet Seat: Solid Plastic, open front without cover, heavy duty commercial.
5. Fixture Support: Water-closet support combination carrier with bottom outlet & able to fit in 10" chase.

2.4 KITCHEN SINKS

- A. Kitchen Sinks, P-3: Counter-mounting, stainless-steel fixture.
 1. Products:
 - a) Elkay Manufacturing Co.; PSR 2522 with LK4102..
 - b) Just Manufacturing Co.
 - c) Kohler Co.
 2. Overall Size: 24 by 22 inches.
 3. Number of Compartments: One.
 4. First Compartment: With 3-1/2-inch crumb cup.
 5. Sink Faucet: Single lever deck mount, swivel spray aerator, 3 hole installation.
 6. Supplies: NPS 1/2 chrome-plated copper with stops.
 7. Drain Piping: NPS 1-1/2 chrome-plated cast-brass trap, 0.045-inch-thick tubular brass waste to wall, and wall escutcheon.

PART 3 - EXECUTION**3.1 EXAMINATION**

- A. Examine roughing-in for water soil and for waste piping systems and supports to verify actual locations and sizes of piping connections and that locations and types of supports match those indicated, before plumbing fixture installation. Use manufacturer's roughing-in data if roughing-in data are not indicated.

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- B. Examine walls, floors, and cabinets for suitable conditions where fixtures are to be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 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 wall-hanging fixtures with tubular waste piping attached to supports.
- E. Install counter-mounting fixtures in and attached to casework.
- F. Install fixtures level and plumb according to manufacturers' written instructions and roughing-in drawings.
- G. 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, gate, or globe valve if stops are not specified with fixture. Refer to Division 15 Section "Valves" for general-duty valves.
- H. Install trap and tubular waste piping on drain outlet of each fixture to be directly connected to sanitary drainage system.
- I. Install flushometer valves for accessible water closets with handle mounted on wide side of compartment. Install other actuators in locations that are easy for people with disabilities to reach.
- J. Install toilet seats on water closets.
- K. 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.
- L. Install water-supply, flow-control fittings with specified flow rates in fixture supplies at stop valves.
- M. 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.
- N. Install traps on fixture outlets.
 - 1. Exception: Omit trap on fixtures with integral traps.
 - 2. Exception: Omit trap on indirect wastes, unless otherwise indicated.

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- O. 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.
- P. 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.

3.3 CONNECTIONS

- A. Piping installation requirements are specified in other Division 15 Sections. Drawings indicate general arrangement of piping, fittings, and specialties.
- B. Connect water supplies from water distribution piping to fixtures.
- C. Connect drain piping from fixtures to drainage piping.
- D. 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.
- E. 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.
- F. Ground equipment.
 - 1. Tighten electrical connectors and terminals according to manufacturer's published torque-tightening values. If manufacturer's torque values are not indicated, use those specified in UL 486A and UL 486B.

3.4 FIELD QUALITY CONTROL

- A. Verify that installed fixtures are categories and types specified for locations where installed.
- B. Check that fixtures are complete with trim, faucets, fittings, and other specified components.
- C. Inspect installed 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.
- B. Adjust water pressure at faucets, shower valves, and flushometer valves to produce proper flow and stream.
- C. Replace washers and seals of leaking and dripping faucets and stops.

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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.

3.7 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 15410