

**SECTION 22 42 13.16
COMMERCIAL URINALS**

PART 1 - GENERAL

1.1 STIPULATIONS

- A. The specifications sections "General Conditions to the Construction Contract", "Special Conditions" and "Division 01 - General Requirements" form a part of this Section by this reference thereto, and shall have the same force and effect as if printed herewith in full.

1.2 SUMMARY

- A. Section Includes:
 - 1. Wall-hung urinals.
 - 2. Urinal flushometer valves.
 - 3. Supports.

1.3 DEFINITIONS

- A. High-Efficiency Flush Volume: 0.125 gal. or less per flush.
- B. Water Sense Fixture: Urinal and/or flushometer valve certified by the EPA to meet the Water Sense performance criteria.
- C. Effective Flush Volume: Average of two reduced flushes and one full flush per fixture.
- D. Accessible: Plumbing fixture, building, facility, or portion thereof that provides means to approach, enter, and be used and operated by physically handicapped, disabled, and elderly people.
- E. Fitting: Device that controls flow of water into or out of plumbing fixture. Fittings specified in this Section include supplies and stops, flush valves, mounting carrier, waste connection flanges and waste pipes. Pipe fittings, tube fittings, and general-duty valves are included where indicated.

1.4 ACTION SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for urinals.
 - 2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.
- B. Shop Drawings: Include diagrams for power, signal, and control wiring.

1.5 CLOSEOUT SUBMITTALS

- A. Operation and Maintenance Data: For flushometer valves and electronic sensors to include in operation and maintenance manuals.

1.6 MAINTENANCE MATERIAL SUBMITTALS

- A. Furnish extra materials that are packaged with protective covering for storage and identified with labels describing contents.
 - 1. Flushometer-Valve Repair Kits: Equal to 10 percent of amount of each type installed, but no fewer than three of each type.

PART 2 - PRODUCTS

2.1 URINAL PERFORMANCE REQUIREMENTS

- A. Urinal and Accessories: Provide urinals and accessories that are in compliance with current standards, regulations and requirements including the following:
 - 1. Furnish and install urinals, of types and variations scheduled and specified on the drawings that are required and necessary for the project applications. Refer to the Plumbing Fixtures Schedules on the drawings.
 - 2. The fixtures and associated trim components and accessories shall be vandal and ligature resistant throughout the facility where resident access and use is noted.
 - 3. Furnish and install rough-in components of types that are required and herein specified.
 - a. Supplies may be as manufactured by Moen, Brasscraft, McGuire Manufacturing Company, or approved equal.
 - b. American Standard, T & S Brass and Bronze Works, Inc., Cambridge Brass and Zurn Industries trim may be submitted as acceptable equals.
 - 4. The Contractor shall furnish and deliver all urinals, flush valves and accessory repair parts, kits and installation maintenance guides and instructions to the Client Agency, upon completion of the installation as recommended by the manufacturer supplier. The repair kits shall contain basic repair parts for fixture, flush valve and associated trim herein specified.
 - 5. The Contractor shall be responsible for coordinating and notifying the .1 General Contractor of exact locations and dimensions where lavatories and associated chair carriers, accessories and components are to be located, anchored, mounted or recessed. The exact locations of building structural members to provide adequate and necessary mounting connections, blocking and clearances for recessed plumbing fixtures and components.
 - 6. The Contractor' shall coordinate and verify the dimensions of the space, wall thickness, proposed finishes, materials, location of structural supports and substrate construction of the space available for the installation of chair carriers for the specified lavatories.
 - a. The Contractor and the carrier equipment supplier shall be responsible to ensure the installation of the support carriers accommodate the various wall thicknesses,

meets the appropriate urinal application, structural integrity and specified weight limitations.

7. Reference the Architectural Drawings for fixture mounting heights, designated ADA/ Handicap accessibility and locations. All additional and other related fixture equipment, trim, and accessories not indicated or shown as part of the Architectural Drawings shall be mounted or installed in accordance with roughing-in dimensions noted, specified as part of the plumbing drawings or obtained from the fixture manufacturer.
8. All exposed metal trim and components of all plumbing fixtures, components and accessories shall be polished-chromium-plated, except where specifically indicated otherwise. All escutcheons, floor plates, and wall plates shall be polished chromium plated cast brass, set-screw type, including those escutcheons provided with equipment, such as flush valves supplies, etc.
9. Toilet Room accessories shall be furnished and installed by the .1 General Contractor.
10. Upon completion of the plumbing installation, the Contractor shall adjust all new fixture flush valve control stops throughout the building for a minimum flow.
11. Contractor shall furnish and install all necessary adapters required to make complete final connections.
12. Contractor shall make all necessary repairs to, or replacement of existing wall tiles, or other tiled surfaces.
13. Chair carriers shall be furnished and installed for plumbing fixtures wherever possible. Provide suitable structural reinforcement for all wall supports as required.
14. New plumbing fixtures shall be securely attached and supported by the existing structure of the existing building construction where designated. Provide suitable structural reinforcement for all wall supports, carriers and anchors, as required for a substantial installation.
15. Where exposed vertical supplies above floor are indicated for fixtures, supply piping shall be polished chromium plated, with setscrew escutcheons and loose key type stops.
16. The height of each urinal designated as an ADA handicap accessible fixture, must meet and not exceed ADA handicapped mounting height and clearance requirements. All other fixture components, trim and accessories installation must conform to ADA handicap accessibility mounting height and clearance space requirements. The force required to operate a designated ADA handicap manual hand-activated control device must not exceed 5 pounds. Self-closing or automated valves shall remain open for at least 10 seconds.
17. Apply two coats of white enamel paint to all exposed metal or cast iron parts of fixtures.

B. Chair Carriers

1. Wall-mounted Urinal shall be supported on a Zurn No. Z-1221 02 Z1222 Series chair carrier, Josam, J.R. Smith, Wade, or approved equal. Carrier shall be complete with steel uprights with support plates mounted on adjustable headers, and mounting fasteners. Carrier shall be specially designed for narrow partitions.

C. Flush Valve Trim: (As scheduled on drawings and specified herein.)

1. Flush valves shall incorporate the non-hold-open feature.
2. Flush valves shall incorporate the "low water consumption" feature and shall include vandal resistant control stop cover.
3. Flush valves for ADA handicapped fixtures shall include approved handle assembly.

D. Caulking

1. Plumbing Contractor shall furnish and install caulking around all wall-mounted fixtures, floor mounted fixtures, service receptors, sinks, prefabricated shower stalls, fixture accessories and other similar fixtures.
2. Caulking shall be the Dow Corning No. 786 Mildew Resistant Silicone Sealant, or equal, white. Coordinate all work with the General Contractor.
3. At locations where new plumbing fixtures are installed to replace existing fixtures, modify the existing piping systems as required to accommodate the installation of the new fixtures.

E. Flow Rates and Flush Volumes (EDIT PER PROJECT)

1. Maximum flush volumes for Water Closets shall be as follows:
 - a. Urinals 0.125 GPF
2. Comply with applicable standards below and other requirements specified.
 - a. Enameled, Cast-Iron Fixtures: ASME A112.19.1M.
 - b. National Sanitation Foundation Construction: NSF 2.
 - c. Vitreous-China Fixtures: ASME A112.19.2/CSA B45.1.

2.2 WALL-HUNG URINALS

A. Urinals - Wall Hung, Back Outlet, Washout: (U-#) Refer to the Plumbing Fixture Schedules on Drawings for additional information and specific fixture designations. The fixture schedule identifies the basis of design, product descriptions, make, models, details, components and accessories.

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.
 - b. Kohler Co.
 - c. Zurn Industries. LLC.
 - d. Or equal as approved by the Professional.
2. Fixture:
 - a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5/CSA B45.15.
 - b. Material: Vitreous china.
 - c. Strainer or Trapway: Manufacturer's standard strainer with integral trap.
 - d. Water Consumption: 0.125 gpf.
 - e. Spud Size and Location: NPS 3/4; back.
 - f. Waste Outlet Size and Location: NPS 2; back.
 - g. Color: White.
3. Flushometer Valve: Refer to the specification article herein and the Fixture Schedules on the Plumbing Drawings for the basis of design flushometer-valve information for the designated fixture.

4. Waste Fitting:
 - a. Standard: ASME A112.18.2/CSA B125.2 for coupling.
 - b. Size: NPS 2.
 5. Support: Type I urinal carrier with fixture support plates and coupling with seal and fixture bolts and hardware matching fixture. Include rectangular, steel uprights.
 6. Urinal Mounting Height: Handicapped/elderly according to ICC A117.1.
- B. Solenoid-Actuator, Electric Sensor Operated Diaphragm Flushometer Valves: (U-#) Refer to the Plumbing Fixture Schedules on Drawings for additional information and specific fixture designations. The fixture schedule identifies the basis of design, product descriptions, make, models, details, components and accessories.
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. Delany Products.
 - b. Sloan Valve Company.
 - c. Zurn Industries, LLC.
 - d. Or equal as approved by the Professional.
 2. Standard: ASSE 1037/ASME 112.1037/CSA B125.37.
 3. Minimum Pressure Rating: 125 psig.
 4. Features: Include integral check stop and backflow-prevention device.
 5. Material: Brass body with corrosion-resistant components.
 6. Exposed Flushometer-Valve Finish: Chrome plated.
 7. Panel Finish: Chrome plated or stainless steel.
 8. Style: Concealed.
 9. Actuator: Solenoid complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.
 10. Trip Mechanism: Hard-wired electronic sensor complying with UL 1951; listed and labeled as defined in NFPA 70, by a qualified testing agency; and marked for intended location and application.
 11. Consumption: 0.125 per flush.
 12. Minimum Inlet: NPS 3/4.
 13. Minimum Outlet: NPS 2.

2.3 SUPPORTS

- A. Type I Urinal Carrier:
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. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. Zurn Industries, LLC.
 - e. Or equal as approved by the Professional.
 2. Standard: ASME A112.6.1M.

B. Type II Urinal Carrier:

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - a. Jay R. Smith Mfg Co; a division of Morris Group International.
 - b. Josam Company.
 - c. MIFAB, Inc.
 - d. Zurn Industries, LLC.
2. Standard: ASME A112.6.1M.

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 urinal installation.
- B. Examine walls and floors for suitable conditions where urinals will be installed.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Urinal Installation:
 1. Install urinals level and plumb according to rough-in drawings.
 2. Install wall-hung, back-outlet urinals onto waste fitting seals and attached to supports.
 3. Install accessible, wall-mounted urinals at mounting height for the handicapped/elderly, according to ICC A117.1.
- B. Support Installation:
 1. Install supports, affixed to building substrate, for wall-hung urinals.
 2. Use off-floor carriers with waste fitting and seal for back-outlet urinals.
 3. Use chair-type carrier supports with rectangular steel uprights for accessible urinals.
- C. Flushometer-Valve Installation:
 1. Install flushometer-valve water-supply fitting on each supply to each urinal.
 2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
 3. Install hardwire electric-powered, electronic-sensor mechanisms.
- D. Wall Flange and Escutcheon Installation:
 1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations.
 2. Install deep-pattern escutcheons if required to conceal protruding fittings.
 3. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."

- E. Joint Sealing:
 - 1. Seal joints between urinals and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.
 - 2. Match sealant color to urinal color.
 - 3. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 PIPING CONNECTIONS

- A. Connect urinals with water supplies and soil, waste, and vent piping. Use size fittings required to match urinals.
- B. Comply with water piping requirements specified in Section 221116 "Domestic Water Piping."
- C. Comply with soil and waste piping requirements specified in Section 221316 "Sanitary Waste and Vent Piping."
- D. Where installing piping adjacent to urinals, allow space for service and maintenance.

3.4 ADJUSTING

- A. Operate and adjust urinals and controls. Replace damaged and malfunctioning urinals, fittings, and controls.
- B. Adjust water pressure at flushometer valves to produce proper flow.
- C. Adjust electronic-sensor mechanisms.

3.5 CLEANING AND PROTECTION

- A. Clean urinals and fittings with manufacturers' recommended cleaning methods and materials.
- B. Install protective covering for installed urinals and fittings.
- C. Do not allow use of urinals for temporary facilities unless approved in writing by Client Agency.

END OF SECTION