

**SECTION 22 40 00  
PLUMBING FIXTURES**

**PART 1 - GENERAL**

**1.1 DESCRIPTION**

Plumbing fixtures, associated trim and fittings necessary to make a complete installation from wall or floor connections to rough piping, and certain accessories.

**1.2 RELATED WORK**

- A. Sealing between fixtures and other finish surfaces: Section 07 92 00, JOINT SEALANTS.
- B. Through bolts: Section 10 21 13, TOILET COMPARTMENTS.
- D. Section 22 05 11, COMMON WORK RESULTS FOR PLUMBING.

**1.3 SUBMITTALS**

- A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, AND SAMPLES.
- B. Submit plumbing fixture information in an assembled brochure, showing cuts and full detailed description of each fixture.

**1.4 APPLICABLE PUBLICATIONS**

- A. The publications listed below form a part of this specification to the extent referenced. The publications are referenced in the text by the basic designation only.
- B. American National Standard Institute (ANSI):  
The American Society of Mechanical Engineers (ASME):  
A112.6.1M-02(R2008).....Floor Affixed Supports for Off-the-Floor  
Plumbing Fixtures for Public Use  
A112.19.2M-03(R2008)....Vitreous China Plumbing Fixtures
- C. American Society for Testing and Materials (ASTM):  
A276-2003.....Stainless and Heat-Resisting Steel Bars and  
Shapes
- D. American Society of Sanitary Engineers (ASSE):  
1016-05.....Performance Requirements for Individual  
Thermostatic, Pressure Balancing and Combination  
Pressure Balancing and Thermostatic Control  
Valves for Individual Fixture Fittings
- E. National Sanitation Foundation (NSF)/American National Standards  
Institute (ANSI):  
61-03.....Drinking Water System Components-Health Effects
- F. American with Disabilities Act (A.D.A) Section 4-19.4 Exposed Pipes  
and Surfaces

**PART 2 - PRODUCTS****2.1 STAINLESS STEEL**

- A. Corrosion-resistant Steel (CRS):
  - 1. Plate, Sheet and Strip: CRS flat products shall conform to chemical composition requirements of any 300 series steel specified in ASTM A276.
  - 2. Finish: Exposed surfaces shall have standard polish (ground and polished) equal to NAAMM finish Number 4.
- B. Die-cast zinc alloy products are prohibited.

**2.2 STOPS**

- A. Provide lock-shield screw driver pattern angle stops, straight stops or stops integral with faucet, with each compression type faucet whether specifically called for or not, including sinks in wood and metal casework. Locate stops centrally above or below fixture in accessible location.
- B. Supply from stops not integral with faucet shall be chrome plated copper flexible tubing or flexible stainless steel with inner core of non-toxic polymer.
- C. Supply pipe from wall to valve stop shall be rigid threaded IPS copper alloy pipe, i.e. red brass pipe nipple.

**2.3 ESCUTCHEONS**

Heavy type, chrome plated, with set screws. Provide for piping serving plumbing fixtures and at each wall, ceiling and floor penetrations in exposed finished locations and within cabinets and millwork.

**2.4 LAMINAR FLOW CONTROL DEVICE**

- A. Smooth, bright stainless steel or satin finish, chrome plated metal laminar flow device shall provide non-aeration, clear, coherent laminar flow that will not splash in basin. Device shall also have a flow control restrictor and have vandal resistant housing.
- B. Flow Control Restrictor:
  - 1. Capable of restricting flow to 32 mL/s (0.5 gpm) for lavatories and 95 mL/s (1.5 gpm) for sink P-528.
  - 2. Compensates for pressure fluctuation maintaining flow rate specified above within 10 percent between 170 and 550 kPa (25 and 80 psi).
  - 3. Operates by expansion and contraction, eliminates mineral/sediment build-up with self-clearing action, and is capable of easy manual cleaning.
- C. Device manufactured by OMNI Products, Inc. or equal.

## 2.5 CARRIERS

- A. ASME/ANSI A112.6.1M, with adjustable gasket faceplate chair carriers for wall hung closets with auxiliary anchor foot assembly, hanger rod support feet, and rear anchor tie down.
- B. Where water closets, lavatories or sinks are installed back-to-back and carriers are specified, provide one carrier to serve both fixtures in lieu of individual carriers. The drainage fitting of the back to back carrier shall be so constructed that it prevents the discharge from one fixture from flowing into the opposite fixture.

## 2.6 WATER CLOSETS

- A. (P-103) Water Closet (Wall Hung, ASME/ANSI A112.19.2M, Figure 9) office and industrial, elongated bowl, siphon jet dual flush 6 L/4.2 L (1.6/1.1 gallons) per flush, wall outlet. Top of rim shall be between 410 and 435 mm (16 to 17 inches) above finished floor.
  - 1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally molded bumpers, concealed check hinge with stainless steel post. Seat shall be posture contoured body design. Color shall be white.
  - 2. Fittings and Accessories: Gaskets - neoprene; bolts with chromium plated caps nuts and washers.
  - 3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, battery powered active infra-red sensor for automatic operation with courtesy flush button for manual operation, water saver design dual flush 6 L/4.2 L (1.6/1.1 gallons) per flush with maximum 10 percent variance, 25mm (one-inch) screwdriver back check angle stop with vandal resistant cap, adjustable tailpiece, a high back pressure vacuum breaker, spud coupling for 40 mm (1-1/2 inch) top spud, wall and spud flanges, and sweat solder adapter with cover tube and set screw wall flange. Valve body, cover, tailpiece and control stop shall be in conformance with ASTM alloy classification for semi-red brass. Seat bumpers shall be integral part of flush valve. Set centerline of inlet 292 mm (11-1/2 inches) above rim.
- B. (P-104) Water Closet (Wall Hung, ASME/ANSI A112.19.2M, Figure 9) office and industrial, elongated bowl, siphon jet dual flush 6 L/4.2 L (1.6/1.1 gallons) per flush, wall outlet. Water closet shall have rim set 460 mm (18 inches) above finished floor.
  - 1. Seat: Institutional/Industrial, extra heavy duty, chemical resistant, solid plastic, open front less cover for elongated bowls, integrally

- molded bumpers, concealed check hinge with stainless steel post. Seat shall be posture contoured body design. Color shall be white.
2. Fittings and Accessories: Gaskets - neoprene; bolts with chromium plated caps nuts and washers.
  3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, battery powered active infra-red sensor for automatic operation with courtesy flush button for manual operation, water saver design dual flush 6 L/4.2 L (1.6/1.1 gallons) per flush with maximum 10 percent variance, 25mm (one-inch) screwdriver back check angle stop with vandal resistant cap, adjustable tailpiece, a high back pressure vacuum breaker, spud coupling for 40 mm (1-1/2 inch) top spud, wall and spud flanges, and sweat solder adapter with cover tube and set screw wall flange. Valve body, cover, tailpiece and control stop shall be in conformance with ASTM alloy classification for semi-red brass. Seat bumpers shall be integral part of flush valve. Set centerline of inlet 292 mm (11-1/2 inches) above rim.

## 2.7 URINALS

- A. (P-202) Urinal (Wheelchair, Wall Hung, ANSI A112.19.2M, Figure 30) bowl with integral flush distribution, wall to front of flare 356mm (14 inches). Wall hung with integral trap, siphon jet flushing action 2 L (0.5 gallons) per flush with 50mm (2-inch) back outlet and 20 mm (3/4 inch) top inlet spud.
  1. Support urinal with chair carrier and install with rim 380 mm (15 inches) above finished floor.
  2. Flushing Device: Large chloramines resistant diaphragm, semi- red brass body, electronic sensor operated, battery powered active infrared sensor for automatic operation, with courtesy flush button for manual operation, water saver design, 20 mm (3/4-inch) capped screwdriver angle stop valve. Set centerline of inlet 292 mm (11-1/2 inches) above urinal. Valve body, cover, tailpiece and control stop shall be in conformance with ASTM alloy classification for semi-red brass.

## 2.8 LAVATORIES

- A. Dimensions for lavatories are specified, Length by width (distance from wall) and depth.
- B. Brass components in contact with water shall contain no more than 3 percent lead content by dry weight.

- C. (P-413) Lavatory (Under Mounted ASME/ANSI A112.19.2M) vitreous china, ADAAG compliant, approximately 480 mm (19 inches) by 429 mm (17 inches) oval. Mount unit under countertop.
1. Faucet: Solid cast brass construction with washerless ceramic disc mixing cartridge type, integral cast brass spout with outlet 41 mm (1-5/8 inches) above slab with 51 mm (two-inch) single wing canopy handles with hot and cold service buttons. Provide laminar flow control device. Faucet, wall and floor escutcheons shall be either copper alloy or CRS. Exposed metal parts shall be chrome plated with a smooth bright finish.
  2. Drain: cast or wrought brass with flat grid strainer, offset tailpiece, brass, chrome plated.
  3. Stops: Angle type. See paragraph 2.2. Stops
  4. Trap: Cast copper alloy, 40 by 32 mm (1-1/2 by 1-1/4 inch) P-trap, adjustable with connected elbow and 1.4mm thick (17 gauge) tubing extension to wall. Exposed metal trap surface and connection hardware shall be chrome plated with a smooth bright finish. Set trap parallel to the wall.
  5. Provide cover for drain, stops and trap per A.D.A 4-19.4.

## 2.9 SINKS

- A. Dimensions for sinks are specified, length by width (distance from wall) and depth.
- B. (P-528) Sink (CRS, Single Compartment, Counter Top ASME/ANSI A112.19.2M, Kitchen Sinks, Figure 5), ADAAG compliant, self rimming, back faucet ledge, approximately 634 by 558 mm (25 by 22 inches) with single compartment inside dimensions approximately 532 by 406 by 152 mm (21 by 16 by 6 inches) deep. Shall be minimum of 1.3 mm thick (18 gauge) CRS. Corners and edges shall be well rounded:
1. Faucet: Solid brass construction, deck mounted combination faucet with monel or ceramic seats, removable replacement unit containing all parts subject to ware, swivel gooseneck spout with approximately 200 mm (8-inches) reach with spout outlet 150 mm (6-inches) above deck and 102 mm (4 inch) wrist blades Faucet shall be polished chrome plated.
  2. Drain: Drain plug with cup strainer, stainless steel.
  3. Trap: Cast copper alloy 40 mm (1-1/2 inch) P-trap with cleanout plug. Provide wall connection and escutcheon.
  4. Provide cover for drain, stops and trap per A.D.A 4-19.4.
- I. (P-531) Sink (CRS, Double Compartment with Drainboards, floor mounted) 14 gage CRS approximately 610 mm by 610 mm (24 inches by 24 inches) by

356 mm (14 inches) deep with 203 mm (8 inches) splash back and drainboard at right or left as shown on the drawings. Overall dimensions (sink and drainboard), approximately 1438 mm (96 inches) long by 610 mm (24 inches) wide. Slope drainboard to compartment and brace rigidly with CRS reinforcements. Provide rolled rim on 42 mm (1-5/8 inches) O.D. tubular legs, 16 gage wall thickness and adjustable bullet shaped feet. Set rim of sink 914 mm (36 inches) above finished floor.

1. Drain: Drain plug with cup strainers.
2. Trap: Cast copper alloy, 38 mm (1 1/2 inches) P-trap. Adjustable with connected elbow and nipple to wall and escutcheon.
3. Control and Faucet: Solid brass construction, wrist blade control, backsplash hung, with swivel gooseneck spout. Provide laminar flow control device.

## **2.10 MISCELLANEOUS DEVICES**

- A. (P-811) Ice Maker/Water Supply Units: Fabricate of 20-gage steel with highly corrosion resistant epoxy finish. Unit to have 15 mm (1/2-inch) MPT brass sweat connection, 1/4 turn ball type shut-off valve, valves shall comply with requirements of NSF 61, Section 9, size 171 by 171 mm (6-3/4 inch by 6-3/4 inch).

## **PART 3 - EXECUTION**

- A. Fixture Setting: Opening between fixture and floor and wall finish shall be sealed as specified under Section 07 92 00, JOINT SEALANTS.
- B. Supports and Fastening: Secure all fixtures, equipment and trimmings to partitions, walls and related finish surfaces. Exposed heads of bolts and nuts in finished rooms shall be hexagonal, polished chrome plated brass with rounded tops.
- C. Through Bolts: For free standing marble and metal stud partitions refer to Section 10 21 13, TOILET COMPARTMENTS.
- D. Toggle Bolts: For hollow masonry units, finished or unfinished.
- E. Expansion Bolts: For brick or concrete or other solid masonry. Shall be 6 mm (1/4-inch) diameter bolts, and to extend at least 75 mm (3-inches) into masonry and be fitted with loose tubing or sleeves extending into masonry. Wood plugs, fiber plugs, lead or other soft metal shields are prohibited.
- F. Power Set Fasteners: May be used for concrete walls, shall be 6 mm (1/4-inch) threaded studs, and shall extend at least 35 mm (1-1/4 inches) into wall.
- G. Tightly cover and protect fixtures and equipment against dirt, water and chemical or mechanical injury.
- H. Do not use aerators on lavatories and sinks.

**3.2 CLEANING**

At completion of all work, fixtures, exposed materials and equipment shall be thoroughly cleaned.

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