

**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. 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  
A112.19.1M-04..... Enameled Cast Iron Plumbing fixtures  
A112.19.2M-03(R2008)..... Vitreous China Plumbing Fixtures  
A112.19.3-2001(R2008)..... Stainless Steel Plumbing fixtures (Designed for Residential Use)
- C. American Society for Testing and Materials (ASTM):  
A276-2003..... Stainless and Heat-Resisting Steel Bars and Shapes
- D. National Association of Architectural Metal Manufacturers (NAAMM): NAAMM AMP 500-505 Metal Finishes Manual (1988)
- E. 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
- F. National Sanitation Foundation (NSF)/American National Standards Institute (ANSI):  
61-03 ..... Drinking Water System Components-Health Effects
- G. American with Disabilities Act(A.D.A) Section 4-19.4 Exposed Pipes and Surfaces

## **PART 2 - PRODUCTS**

### **2.1 STOPS**

- A. Provide lock-shield loose key or 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 casework. Locate stops centrally above or below fixture in accessible location.
- B. Furnish keys for lock shield stops to Project Engineer.
- C. 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.
- D. Supply pipe from wall to valve stop shall be rigid threaded IPS copper alloy pipe, i.e. red brass pipe nipple.

### **2.2 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.

### **2.3 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 from 32 mL/s (0.5 gpm) for lavatories; 125 to 140 mL/s (2.0 to 2.2 gpm) for sinks.
- C. Device manufactured by OMNI Products, Inc. or equal.

### **2.4 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. ASME/ANSI A112.6.1M, lavatory, chair carrier for thin wall construction steel plate as detailed on drawing. All lavatory chair carriers shall be capable of supporting the lavatory with a 250-pound vertical load applied at the front of the fixture.
- C. 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.

### **2.5 WATER CLOSETS**

- A. (P-104) Water Closet (Wall Hung with Bedpan Washer, ASME/ANSI A112.19.2M, Figure 9) elongated bowl, siphon jet, wall outlet, with bedpan lugs – bedpan washer with grab bar offset, flush valve operated 6L (1.6 gallons) per flush. Top of rim shall be 460 mm (18 inches) above

finished floor. Provide standoff bracket support between studs for bedpan washer at height recommended by the manufacture.

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 cap nuts and washers.
3. Flush valve: Large chloramines resistant diaphragm, semi-red brass valve body, exposed chrome plated, water saver design 6L (1.6 gallons) per flush with maximum 10 percent variance, non-hold-open ADA approved operating side oscillating handle, 25mm (1") IPS screwdriver back check angle stop with vandal resistant cap, adjustable tailpiece, high back pressure vacuum breaker, offset spud coupling for 40mm (1½ inch) top spud, cast screw wall and spud flanges, sweat solder adapter with cover tube and wall support at diverter valve body. Valve body, cover tailpiece and control stop shall be in conformance with ASTM alloy classification for semi-red brass. Set centerline of inlet 673 mm (26½ inches) above rim.

## 2.6 URINAL

- 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 4 L (1.0 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, exposed flush valve, // electronic sensor operated // battery powered active infrared sensor for automatic operation // non-hold-open, 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.

## 2.7 LAVATORIES

- A. Dimensions for lavatories are specified, Length by width (distance from wall) and depth.
- B. (P-418) Lavatory (Sensor Control, Gooseneck Spout, ASME/ANSI A112.19.2M, Figure 16) straight back, approximately 500 by 450 mm (20 by 18 inches) and a 102mm (4-inch) maximum apron, first quality vitreous china with punching for gooseneck spout. Set rim 864 mm (34 inches) above finished floor.
  1. Faucet: Solid cast brass construction, chrome plated, gooseneck spout with outlet 102 to 127 mm (4 to 5 inches) above rim. Electronic sensor operated, 102 mm (4 inch) center set mounting, battery operated electronic module solid brass hot-cold water mixer adjusted from top deck with barrier free design control handle. Provide laminar flow control device. Breaking

- the light beam shall activate the water flow. Flow shall stop when user moves away from light beam.
2. Drain: Cast or wrought brass with flat grid strainer with 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 17 gage tubing extension to wall. Exposed metal trap surface and connection hardware shall be chrome plated with a smooth bright finish. Set trap parallel to wall.
  5. Provide cover for drain, stops and trap per A.D.A 4-19.4.

## **2.8 SHOWER BATH FIXTURE**

- A. (P-711) Shower Bath Fixture (Detachable, Wall Mounted, Concealed Supplies, Type T/P Combination Valve and Thermometer):
1. Shower Installation: Wall mounted detachable spray assembly, 610 mm (24 inch) wall bar, elevated vacuum breaker, supply elbow and flange, concealed pipe to wall mounted thermometer, and valve. All external trim shall be chrome plated metal.
  2. Shower Head Assembly: Plastic shower head with flow control to limit discharge to 190 mL/s(3 gpm), 2150 mm (7-feet) of rubber lined CRS or chrome plated metal flexible or white vinyl reinforced hose and supply wall elbow. Design showerhead to fit in palm of hand. Provide CRS or chrome plated metal wall bar with an adjustable swivel hanger for showerhead. Fasten wall bar securely to wall for hand support.
  3. Valves: Type T/P combination thermostatic and pressure balancing, for wall mounted shower with chrome plated lever type operating handle with adjustment for rough-in variations and chrome plated metal or CRS face plate. Valve body for mixing valve and valve body for separate valves shall be any suitable copper alloy. Internal parts shall be copper, nickel alloy, CRS or thermoplastic material. Valve inlet and outlet shall be 15 mm (1/2-inch) IPS. Provide screwdriver check stops with strainers, vacuum breaker, flow control valve with four-arm or lever handle and temperature limit stops. Set stops for a maximum temperature of 40 degrees C (105 degrees F). All exposed fasteners shall be chrome plated. Valve shall provide a minimum of 380 mL/s at 310 kPa (6 gpm at 45 psi) pressure drop.
  4. Thermometer: Stainless steel, 65 mm (2-1/2 inch) dial type range from 0 to 60 degrees C (30 to 140 degrees F).

## **2.9 SINKS AND LAUNDRY TUBS**

### **A. DIMENSIONS FOR SINKS IS SPECIFIED, LENGTH BY WIDTH (DISTANCE FROM WALL) AND DEPTH.**

- A. (P-528) Sink (Single Compartment, Counter Top ASME/ANSI A112.19.2M,) self rimming, back faucet ledge, approximately 483 by 457 mm (19 by 18 inches) with single compartment inside dimensions approximately 406 by 292 by 165 mm (16 by 11 1/2 by 6 1/2 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 sensor operated ac-power 200 mm (8-inches) reach with spout outlet 150 mm (6-inches above deck. 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.
- B. (P-502) Service Sink (Corner, Floor Mounted) stain resistant terrazzo, 711 by 711 mm (28 by 28 by 12 inches) with 152 mm (six-inch) drop front. Terrazzo, composed of marble chips and white Portland cement, shall develop compressive strength of 20 684 kPa (3000 psi) seven days after casting. Provide extruded aluminum cap on front side.
1. Faucet: Solid brass construction, combination faucet with replaceable monel seat, removable replacement unit containing all parts subject to wear, integral stops, mounted on wall above sink. Spout shall have a pail hook, 20 mm (3/4-inch) hose coupling threads, vacuum breaker, and top or bottom brace to wall. Four-arm handles on faucets shall be cast, formed, or drop forged copper alloy. Escutcheons shall be either forged copper alloy or CRS. Exposed metal parts, including exposed part under valve handle when in open position, shall have a smooth bright finish. Provide 914 mm (three-foot) hose with wall hook. Centerline of rough in is 1220 mm (48 inches) above finished floor.

## **2.10 EMERGENCY FIXTURES**

- A. (P-708) Emergency Eye and Face Wash (Counter Mounted): CRS, deck mounted swing away. Mount eye and face wash spray heads 1065mm (42 inches) above finished floor. Eye and Face Wash shall right swing the spray heads assembly horizontally out over sink.
- B. (P-709) Emergency Eye and Face Wash (Wall Mounted): CRS, Wall mounted swing down. Mount eye and face wash spray heads 1065mm (42 inches) above finished floor. Eye and Face Wash shall right swing down the spray heads assembly horizontally out over sink.

## **PART 3 – EXECUTION**

### **3.1 INSTALLATION**

- 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. Toggle Bolts: For hollow masonry units, finished or unfinished.
- D. 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.

- E. 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.
- F. Tightly cover and protect fixtures and equipment against dirt, water and chemical or mechanical injury.
- G. Where water closet waste pipe has to be offset due to interference, provide correct and additional piping necessary to eliminate relocation of water closet.
- 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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