

SECTION 15440

PLUMBING FIXTURES

PART 1 – DESIGN DIRECTIVES

1.1 QUALITY ASSURANCE

A. Codes and Standards:

1. ASHRAE Standard 18: "Method of Testing for Rating Drinking Water Coolers with Self-Contained Mechanical Refrigeration Systems."
2. ARI Standard 1010: "Drinking-Fountains and Self-Contained Mechanically-Refrigerated Drinking-Water Coolers."
3. ANSI Standard A117.1: "Specifications for Making Buildings and Facilities Accessible To and Usable By Physically Handicapped People."
4. Public Law 101-336: "Americans with Disabilities Act of 1991".
5. All drinking fountains shall comply with ANSI/NSF 61, Section 9.

1.2 DESIGN CRITERIA

- A. The preferred manufacturer listed for china products is Eljer. Acceptable alternates, providing they conform to all of the provisions of this specification, are American Standard and Kohler.
- B. Where non-battery flushometers are used, the electrical transformer for the flushometers shall be dedicated to a given room. Do not use one transformer for multiple rooms (i.e. Men's & Women's).
- C. Install lavatories with straight tailpieces and P traps. Offset tailpieces are not allowed.
- D. The shower devices described in this Standard are intended for public showers, not intended although may be used in living quarters. An exposed piping system with removable cover is the preferred method in lieu of a pipe concealed in the wall system.

1.3 DELIVERY, STORAGE, AND HANDLING

- A. Store fixtures and trim in the manufacturer's original shipping containers. Do not stack containers or store in such a manner that may cause damage to the fixture or trim.

PART 2 – PRODUCTS

2.1 WATER CLOSET

- A. Wall Hung, Flush Valve: Siphon jet action, 1 1/2 inch top spud, vitreous china, 1.6 gallon water saving flush valve and elongated, open front seat. Provide compatible chair carrier, mounting height is 15", 17" for ADA. Sloan Royal flush valve #111-SMO.
  1. American Standard Afwall #2257.103
  - ~~2. Eljer Signature model # 111-2105.~~
  3. Kohler model #K-4330.

- B. Floor Mounted, Flush Valve: Siphon jet action, vitreous china, bolt caps, 1 1/2" top spud, 1.6 gallon water saving flush valve, open front, solid plastic elongated seat. Sloan Royal flush valve #111-SMO.
  - 1. American Standard Madera #2234.015; ADA # 3043.102
  - ~~2. Eljer Signature series model # 111-2125, ADA #111-2145.~~
  - ~~3-2.~~ Kohler model #K-4350, ADA #K-4368.
  
- C. Floor Mounted, Tank Type: Siphon jet action, close coupled tank, bolt caps and 1.6 gallon water saving trim, chrome plated angle stop, open front, solid plastic elongated seat.
  - 1. American Standard Cadet #4112.300; ADA #4112.016
  - ~~2. Eljer Patriot series model #091-2125, ADA #091-2175.~~
  - 2. *Toto Drake #CST744S, ADA #CST744SL*

2.2 URINAL

- A. Wall hung 3/4" top inlet spud, vitreous china, washout urinal, 1.0 gallon water saver flush valve, concealed chair carrier, mount top of rim 24" above floor. Sloan Royal flush valve #186-1.0-SMO.
  - 1. American Standard Washbrook #6501.010
  - 2. ~~Eljer Savon model # 161-1090.~~
  - 3. Kohler model #K-4989-T.
  
- B. Wall hung 3/4" top inlet spud, vitreous china, washout urinal, 0.5 liter (0.125 gallon) battery operated water saver flush valve, concealed chair carrier, mount top of rim 24" above floor.
  - 1. New Installations:
    - a. Zurn EcoVantage High Efficiency Urinal #Z5798
  - 2. Retrofit Installations:
    - a. Zurn EcoVantage High Efficiency Urinal #Z5758

2.3 LAVATORY

- A. Countertop: Vitreous china, 20" x 17" oval, self-rimming vitreous china, front overflow with faucet and waste assembly, supplies and adjustable "P" trap.
  - 1. American Standard Aqualyn #0476.028
  - ~~2. Eljer Laura model #051-3514.~~
  - ~~3-2.~~ Kohler model #K-2196.
  
- B. Wall Hung: Vitreous china, 20" x 18" oval, front overflow, soap depression, integral backsplash, concealed chair carrier, with faucet and waste assembly. Supply stops to be chrome plated.
  - 1. American Standard Lucerne #0355.012
  - ~~2. Eljer Signature model #051-2104.~~
  - ~~3-2.~~ Kohler model #K-2032.
  
- C. Faucet: Single lever, ADA compliant faucet, chrome finish, cartridge type flow elements, and 1/2"-14 NPSM threaded male inlet shanks. Delta faucet #525MPU (with pop-up); #505(less pop-up).
  - 1. Residential applications provide the #525MPU with standard 2.0 gpm flow aerator.
  - 2. Public applications provide the # 505 with model #RP31704, 0.5 gpm spray outlet. Other manufacturers may be considered only upon on-site, side by side demonstration. Dartmouth College will determine if the proposed product is equal to the specified product.
    - a. Allowed products:
      - 1.) Delta #RP31704
    - b. Products not allowed:
      - 1.) Conservator A112.18.1M

2.4 MOP SERVICE BASIN

- A. Floor mount, molded stone, 24" x 24" x 10 high, white color, with drain body complete with service faucet with integral spring check valves, vacuum breaker, hose, hose bracket, and mop hanger.
  - 1. Fiat basin #MSB2424;; hose bracket assembly #832-AA; mop hanger #889-CC; 12" stainless steel wall guards #MSG2424. Service faucet
    - a. #B-0665-BSTP manufactured by T&S Brass.
    - b. #445CR20089 manufactured by Chicago Faucet. (non-catalogued item)

2.5 DRINKING FOUNTAIN

- A. Electric Water Cooler: Wall hung, push bar on front and sides, Grey Beige color, mounting bracket, one piece backsplash and basin, polished to a satin finish, ADA compliant Elkay. #EZS-8.

2.6 SINKS

- A. Counter Top, Single Bowl (medium): 18 gauge, type 302 stainless steel, self rimming, undercoated, nominal 25" x 22" x 8" deep compartment, faucet with aerator, lever handles, and basket strainer.
  - A.1. Elkay #LR-2522.
- B. Faucet: ADA compliant, single handle, chrome finish, washerless, cartridge type flow elements, 8" long spout, 1/2"-14 NPSM threaded male inlet shanks, and 2.0 gpm flow aerator.
  - 1. Applications with spray attachment: Delta #420.
  - 2. Applications without spray attachment: Delta #120.
- C. Faucet: ADA compliant, two handle, chrome finish, washerless, cartridge type flow elements, 8" long spout, 1/2"-14 NPSM threaded male inlet shanks, and 2.0 gpm flow aerator.
  - 1. Applications with spray attachment: Delta #2400.
  - 2. Applications without spray attachment: Delta #2100.

2.7 WALL MOUNTED SHOWER ASSEMBLIES

- A. Mixing valve shall be a pressure balance, anti-scald type. Control lever shall conform to current ADA requirements. Stops shall be hidden from view but be accessible without removing the entire shroud. Showerhead shall be 2.5 gpm flow with vandal proof set screw. Pipe cover shall be 18 gage, type 304 stainless steel. Provide integral soap dish. All systems shall be considered heavy duty.
  - 1. Symmons – Hydapipe system, 1-800S series

2.8 FIXTURE SUPPORTS

- A. Lavatory supports shall be adjustable cast iron, with thin concealed arms and sleeves, and complete with escutcheons and mounting fasteners when mounting to masonry or concrete walls.
  - 1. *J. R. Smith 0720 series*
  - 2. *Watts CA-461*
  - A.3. Zurn #Z-1253

- B.** Lavatory supports shall be cast iron supports, having tubular steel uprights with concealed arms and sleeves, mounted on adjustable headers with escutcheons, and complete with heavy cast iron short feet, alignment trusses, and mounting fasteners.
1. *J.R. Smith 0700 series*
  2. *Watts WCA-411 series*
  - ~~B-3.~~ Zurn #Z-1231
- C.** Water closet supports shall be adjustable, factory painted, cast iron face plate, support base, and appropriate type waste fitting having face plate gasket; zinc plated steel fixture studs and fasteners; coated and threaded adjustable wall coupling with neoprene closet outlet gasket; and chrome plated fixture cap nuts and fiber fixture washers. Provide an appropriate model to suit deep or shallow rough-in, siphon jet or blow-out water closet, and type of sanitary piping system to which it is connected.
1. *J. R. Smith 0208 & 0230 series.*
  2. *Watts ISCA-101, 121, & 131 series.*
  - ~~C-3.~~ Zurn #Z1204 series.
- D.** Concealed arm supports for urinals shall have steel top ~~and bottom~~ plates with bolts to support fixture independently from the wall; adjustable sleeves, steel tubular uprights and alignment trusses, steel plates with adjustable holes, bolts, nuts, and chrome plated cap nuts and washers. Top supporting plates shall have cutouts when used with back inlet urinals.
1. *J. R. Smith 0616*
  2. *Watts CA-311*
  3. *Zurn Z1221*

**2.9 FITTINGS, TRIM, AND ACCESSORIES**

- A.** Toilet Seats: Elongated, solid white plastic, closed back/open front, less cover, and having stainless steel check hinge and replaceable bumpers.
1. Bemis Mfg. Co.
  2. Church Seat Co.
- B.** Supplies and Stops shall be polished chrome plated, angle stop having 3/8" IPS inlet and 3/8" O.D. compression x 12±" long flexible tubing or braided hose outlet, and wall flange and escutcheon. Threaded connections only.
- ~~B-1.~~ Brass Craft #0R15C or equal.
- C.** Traps shall be 17 gauge minimum, cast brass, adjustable "P" trap with cleanout and waste to wall.
1. Kitchen sink drain tail piece shall be a single tube, thread connection to the basket (*Hi-Way style*), with a slip connection at the trap. The use of slip connections in the vertical rise is not acceptable.
    - a. *McGuire Mfg. #111CxxG17 or 113CxxG17*
- D.** Provide chrome-plated sheet steel escutcheons with friction clips.

**PART 3 – EXECUTION**

**3.1 EXAMINATION**

- A.** Examine walls, floors, and cabinets for suitable conditions where fixtures are to be installed, do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Install plumbing fixtures level and plumb, in accordance with fixture manufacturer's written instructions.
- B. Fasten plumbing fixtures securely to supports or building structure. Secure supplies behind or within wall construction to provide rigid installation. *Wall hung lavatories shall be supported by an appropriate carrier specified in Part Two of this standard. Manufacturer's wall brackets are not acceptable.*
- C. Install a stop valve in an accessible location in the water connection to each fixture.
- D. Install escutcheons at each wall, floor, and ceiling penetration in exposed finished locations and within cabinets and millwork.
- E. Seal fixtures to walls and floors using a mildew resistant, flexible sealant, color to match fixture color.
- F. Where janitors sinks are located adjacent to sheetrock walls provide stainless steel splash plates.
- G. Where tank type toilets are installed in Residential Life buildings, use only Toto toilets, no substitutions.*
- H. Install floor mount water closets using wax rings less horn. Use horn type wax rings only where required for old construction.*

3.3 MOP BASIN INSTALLATION

- A. Install stainless steel guards around basin where basins are installed in sheetrock installations.
- B. Install a dedicated cold water only faucet (specified in DC Standards 15410) at each mop basin for connection to the owner supplied chemical dispensing station.

3.4 FIELD QUALITY CONTROL

- A. Test fixtures to demonstrate proper operation upon completion of installation and after units are water pressurized. Replace malfunctioning units, then retest.
- B. Inspect each installed unit for damage. Replace damaged fixtures.
- C. Repair or replace leaking or dripping faucets and stops.

3.5 PROTECTION

- A. Provide protective covering for installed fixtures, water coolers, and trim.
- B. Do not allow use of fixtures for temporary facilities.

END OF SECTION 15440