

DIVISION 22 – PLUMBING
SECTION 22 42 13.13 – COMMERCIAL WATER CLOSETS

1. GENERAL

1.1 WORK INCLUDES

A. Base Bid:

1. Plumbing Contractor
 - a. Water closets.
 - b. Flushometer valves.
 - c. Toilet seats.

1.2 SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for water closets.
2. Include rated capacities, operating characteristics, electrical characteristics, and furnished specialties and accessories.

B. Shop Drawings: Include diagrams for power, signal, and control wiring.

C. CLOSEOUT SUBMITTALS

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

D. MAINTENANCE MATERIAL SUBMITTALS

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

2. PRODUCTS

2.1 WALL-MOUNTED WATER CLOSETS

A. Water Closets: Wall mounted, top spud, **accessible**.

1. Bowl:

- a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5.
- b. Material: Vitreous china.
- c. Type: Siphon jet.
- d. Style: Flushometer valve.
- e. Height: Standard.
- f. Rim Contour: Elongated.
- g. Water Consumption: **1.6 gal. (6 L)**, per flush.
- h. Spud Size and Location: NPS 1-1/2 (DN 40); top.

2. Support:

- a. Standard: ASME A112.6.1M.
- b. Description: Waste-fitting assembly as required to match drainage piping material and arrangement with faceplates, couplings gaskets, and feet; bolts and hardware matching fixture.
- c. Water-Closet Mounting Height: **Standard, Child, Handicapped/elderly according to ICC/ANSI A117.1.**

B. Water Closets: Wall mounted, blowout, top spud, **accessible**.

1. Bowl:

- a. Standards: ASME A112.19.2/CSA B45.1 and ASME A112.19.5:
- b. Material: Vitreous china.
- c. Type: Blowout.
- d. Style: Flushometer valve.
- e. Height: Standard.
- f. Rim Contour: Elongated.
- g. Water Consumption: 3.5 gal. (13.2 L) per flush.
- h. Spud Size and Location: NPS 1-1/2 (DN 40); top.
- i. Color: **White**.

2. Support:

- a. Standard: ASME A112.6.1M.
- b. Description: Waste-fitting assembly, as required to match drainage piping material and arrangement with faceplates, couplings gaskets, and feet; bolts and hardware matching fixture.
- c. Water-Closet Mounting Height: **Standard, handicapped/elderly height according to ICC/ANSI A117.1.**

2.2 FLUSHOMETER VALVES

A. Lever-Handle, Diaphragm Flushometer Valves:

- 1. Standard: ASSE 1037.
- 2. Minimum Pressure Rating: 125 psig (860 kPa).
- 3. Features: Include integral check stop and backflow-prevention device.
- 4. Material: Brass body with corrosion-resistant components.
- 5. Exposed Flushometer-Valve Finish: Chrome plated.

6. Panel Finish: Chrome plated or stainless steel.
7. Style: **Exposed**.
8. Consumption: **1.6 gal. (6 L)**, per flush.
9. Minimum Inlet: NPS 1 (DN 25).
10. Minimum Outlet: NPS 1-1/4 (DN 32).

2.3 TOILET SEATS

A. Toilet Seats :

1. Standard: IAPMO/ANSI Z124.5.
2. Material: Plastic.
3. Type: **Commercial (Standard)**
4. Shape: **Elongated rim, open front**
5. Hinge: **Self-sustaining**
6. Hinge Material: Noncorroding metal.
7. Seat Cover: **Not required**.
8. Color: **White**

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

3.2 INSTALLATION

A. Water-Closet Installation:

1. Install level and plumb according to roughing-in drawings.
2. Install floor-mounted water closets on bowl-to-drain connecting fitting attachments to piping or building substrate.
3. Install accessible, wall-mounted water closets at mounting height for handicapped/elderly, according to ICC/ANSI A117.1.

B. Support Installation:

1. Install supports, affixed to building substrate, for floor-mounted, back-outlet water closets.
2. Use carrier supports with waste-fitting assembly and seal.
3. Install floor-mounted, back-outlet water closets attached to building floor substrate, onto waste-fitting seals; and attach to support.

4. Install wall-mounted, back-outlet water-closet supports with waste-fitting assembly and waste-fitting seals; and affix to building substrate.
- C. Flushometer-Valve Installation:
1. Install flushometer-valve, water-supply fitting on each supply to each water closet.
 2. Attach supply piping to supports or substrate within pipe spaces behind fixtures.
 3. Install lever-handle flushometer valves for accessible water closets with handle mounted on open side of water closet.
 4. Install actuators in locations that are easy for people with disabilities to reach.
 5. Install fresh batteries in battery-powered, electronic-sensor mechanisms.
- D. Install toilet seats on water closets.
- E. Wall Flange and Escutcheon Installation:
1. Install wall flanges or escutcheons at piping wall penetrations in exposed, finished locations and within cabinets and millwork.
 2. Install deep-pattern escutcheons if required to conceal protruding fittings.
 3. Comply with escutcheon requirements specified in Section 220518 "Escutcheons for Plumbing Piping."
- F. Joint Sealing:
1. Seal joints between water closets and walls and floors using sanitary-type, one-part, mildew-resistant silicone sealant.
 2. Match sealant color to water-closet color.
 3. Comply with sealant requirements specified in Section 079200 "Joint Sealants."

3.3 CONNECTIONS

- A. Connect water closets with water supplies and soil, waste, and vent piping. Use size fittings required to match water closets.
- 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 water closets, allow space for service and maintenance.

3.4 ADJUSTING

- A. Operate and adjust water closets and controls. Replace damaged and malfunctioning water closets, fittings, and controls.
- B. Adjust water pressure at flushometer valves to produce proper flow.
- C. Install fresh batteries in battery-powered, electronic-sensor mechanisms.

3.5 CLEANING AND PROTECTION

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

END OF SECTION

