

SECTION 22 40 00 - PLUMBING FIXTURES AND EQUIPMENT

- * Code reference - Applies only to projects in Philadelphia

PART 1 - GENERAL**1.01 REFERENCE**

- A. Refer to Section 22 05 00 for requirements which are applicable to this section.
- B. Reference the requirements of the International Plumbing Code.
- C. Where the contract documents are more stringent but not in conflict with the applicable codes, the more stringent requirements shall be followed.
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- D. City of Philadelphia Plumbing Code.

1.02 WORK INCLUDED

- A. Furnish and install plumbing fixtures, drains, trim, supplies, fastening devices, carriers, valves, and traps for a complete installation.
- B. Provide connection of all services for soil, waste, vent, cold and hot water.

1.03 SUBMITTALS

- A. Submit shop drawings of all materials and products described in this section and indicated on the drawings including that listed in the schedule on the drawings.
- B. Fixture submittals shall include all trim associated with the china. They shall be incorporated in a single brochure with the items being furnished clearly identified.

1.04 QUALITY ASSURANCE

- A. All fixtures shall be unmarked, uncracked, true, and level. All shall be warranted to not craze, color, or scale.
- B. Installations shall conform to the International Plumbing Code.
- C. Install all materials and equipment in accordance with the manufacturer's instructions and within the warranty requirements.
- D. All handicapped fixtures and their installation shall conform to the Americans with Disabilities Act and Fair Housing Amendments Act (Public Law 101-336).

PART 2 - PRODUCTS**2.01 TRAPS**

- A. Fixture traps shall be approved self-cleaning type with clean-outs.
- B. Traps shall be chrome plated cast brass.
- C. Traps for lavatories shall be 1 1/4" x 1 1/2" size.

2.02 TRIM

- A. All trim including faucets, waste fittings, strainers, valves, supplies, nipples, and escutcheons shall be chrome plated cast brass.
- B. Exposed water supply pipes shall be chrome plated brass with loose key angle stops.
- C. Fixtures shall be selected for low water consumption and limited to 1.6 gallons per flush on toilets, 2.2 gpm for faucets, and 2.5 gpm for showers.
- D. Public toilet room faucets shall be self-closing metering type when not indicated for the handicapped. Handicapped faucets shall conform to ADA requirements. Provide an approved temperature limiting device that conforms to ASSE 1070.
- E. All lavatories in public toilet rooms shall have grid type strainers.
- F. Waste connections for handicapped lavatories shall be offset. Contractor is to insulate all exposed domestic water and waste piping with prefab PVC jacketed assemblies.
- G. For fixtures requiring flush valves, they shall be of the low consumption type. Selection shall be for use with the specified fixture.
- H. 'Eco-drive' sensor operated flush valves and faucets shall include regenerating battery system.
- I. Water cooler shall have a bottle filler on the low station.

2.03 CARRIERS

- A. All wall hung fixtures shall be provided with floor mounted carriers.
- B. Floor mounted carriers shall have short pattern foot supports.
- C. Carriers for lavatories shall be concealed arm type.

2.04 MANUFACTURERS

- A. Fixtures; Kohler, American-Standard, Crane.
- B. Seats; Church, Olsonite, Sperzel, Benke, Bemis.
- C. Carriers; Josam, Zurn, Wade, J.R. Smith, Watts.
- D. Faucets; American-Standard, Speakman, Chicago, Kohler, Delta, Moen.
- E. Supplies and Traps; McGuire, Brass Craft, Central Brass, Kohler, American-Standard.
- F. Shower, Mop Receptors and Laundry Trays; Crane/Fiat, Stern/Williams.
- G. Domestic Water Heaters-Gas; Rheem/Rudd, A.O. Smith, Lochinvar, Jackson, State.
- H. Shower Enclosures - Kohler, American Standard, Crane/Fiat.
- I. Flush Valves - Sloan Royal
- J. * Flush Valves - Sloan Regal, Coyne and Delaney, Zurn.
- K. Insulation for handicapped lavatory and sink connections insulations - Truebro McGuire "pro-wrap".
- L. Alternate flush valve selection where budget consideration requires a lower cost valve and competitive pricing.

2.05 VACUUM BREAKERS

- A. Furnish and install vacuum breakers on all fixtures, trim, or faucets arranged for the connection of hoses. Vacuum breaker shall be located on the discharge side of the valve.
- B. Vacuum breakers shall be chrome plated brass where exposed and rough brass where concealed.
- C. Install vacuum breakers on wall hydrants, hose bibbs, janitor sinks and wherever else required by code.

2.06 WATER CLOSET CARRIER SELECTION.

- A. Carrier fitting configuration shall be suitable for the stack location shown on the drawings. Carriers to permit handicapped mounting of fixtures shall be utilized where required.

2.07 WALL HUNG WATER CLOSET SUPPORTS/FITTINGS

- A. Smith No. 0100 series "adjustable" deep rough-in support. Where floor construction is not suitable for deep rough-in, Smith No. 0200 series shallow rough-in type may be used. Where furred wall space is not sufficient for the adjustable series, Smith "compact" No. 0400 series may be used.

2.08 WALL HUNG BLOWOUT WATER CLOSET SUPPORTS/FITTINGS

- A. Smith No. 0300 series "adjustable series fixture supports with type No. 2 closet outlet connection. Where furred wall space is not sufficient for the adjustable series, Smith "compact" No. 0400 series or Smith No. 670 thru 680 waste fitting assemble with type No.2 closet outlet connection may be used.

2.09 FLOOR MOUNTED FLOOR OUTLET WATER CLOSET CONNECTION

- A. Smith No. 9230 cast bronze closet flange assembly complete with 5/16" bronze bolts, chromium plated nuts and washers and approved gasket.

2.10 WALL HUNG BLOWOUT URINALS ON FLOOR MOUNTED SUPPORT

- A. Smith No. 0629, 0630, 0632, or 0633 urinal support with adjustable coupling assembly. Face plate shall be supported by extra heavy cast iron base support which shall be securely bolted to floor construction.

2.11 WALL HUNG BLOWOUT AND WASH-OUT URINALS ON FLOOR MOUNTED SUPPORT

- A. Smith No. 0600 series urinal support. Uprights shall be high-strength steel with block bases securely bolted to floor construction.

2.12 ELECTRIC WATER COOLER WALL SUPPORT

- A. Smith No. 0830 floor mounted support electric water cooler support. Uprights shall be high strength steel with block bases securely bolted to floor construction.

2.13 STEEL BACKING PLATE FOR PLUMBING FIXTURES

- A. Where plumbing fixtures of the arms which support them are specified to be attached to a steel plate in the wall, furnish and install a 1/4" thick by 6" wide steel plate which shall extend at least one stud beyond the first and last fixture mounting points. Fixture or supporting arms shall be securely and firmly attached to the steel plate in accordance with the manufacturer's instructions.

2.14 FLAT-SLAB LAVATORIES-CONCEALED ARMS ON BACKING PLATE

- A. Lavatories shall be punched for Smith No. 0728 concealed arm fixture support with chromium plated threaded escutcheons. The arms shall be securely bolted to steel backing plate in the wall as herein before specified. They shall have positive mechanical locking device and shall be fully adjustable after installation of the finished wall.

2.15 FLAT-SLAB LAVATORIES-CONCEALED ARMS ON FLOOR SUPPORT

- A. Lavatories shall be punched for Smith No. 0700-E fixture support. Fixture support shall have

chromium plated threaded escutcheons and concealed arms with positive mechanical locking device. Arms shall be fully adjustable after installation of finished wall. Uprights shall be high-strength steel with block bases securely bolted to floor construction.

2.16 EMERGENCY FIXTURE TEMPERING VALVE

- A. Furnish and install a single valve emergency fixture tempering valve on all emergency fixtures utilizing domestic water with a 50-50 water mix ratio.
- B. Valve shall have a dual internal bypass that provides thermal and pressure assisted activation with triple duty check stops.
- C. Valve shall maintain cold water flow in event of failure.
- D. Valve sizing shall be in accordance with rated fixture demand at a maximum of 20 psi pressure drop.
- E. Valve conform to ANSI-Z-358-1.
- F. Valve to be manufactured by Powers Series ES or approved equal.

PART 3 - EXECUTION

3.01 INSTALLATIONS

- A. Plumbing fixtures shall be installed in a manner to afford easy access for cleaning. Where practical, all piping from fixtures shall run in the most direct route to the wall.
- B. Furnish and install all waste connections, traps, water supplies, final connections, etc., to equipment furnished under other portions of the specifications.
- C. Make final connections to all soil, waste, vent, and water piping to the fixtures.
- D. Fixtures shall be set level and in proper alignment with adjacent walls and fixtures.
- E. All wall hung fixture carriers to be securely anchored to the slab.
- F. Attach floor mounted water closets to floor with wax seal and lag screws. Do not use lead flashing to hold closet in place.
- G. Securely bolt all fixtures to the building construction and unless special hangers are indicated, provide hangers and/or carriers designed specifically for the fixtures by the fixture manufacture.
- H. Caulk all wall hung fixtures between fixture and wall with sealant specified in Section 07900. Provide sealant at all points where mop receptor meets walls and floor.
- I. Install electric water coolers with "P" trap and water shutoff valve within cabinet.
- J. Contractor shall insulate all exposed domestic water and drainage piping under all handicapped lavatories and sinks with pre-formed insulation kit with PVC jacket similar to, Lav-Guard as manufactured by Truebro. There shall be no sharp or abrasive surfaces under the handicapped lavatories.
- K. Contractor shall provide an offset tailpiece for the handicapped lavatory's drain piping to create space for wheelchair access.
- L. Emergency tempering valves shall be accessibly located above ceilings or provided with a recessed cabinet adjacent to the fixture.

3.02 MOUNTING HEIGHTS

- A. Mount fixtures with the following heights above finished floor, except where noted otherwise.

Water Closet:

Standard	15 inches to top of bowl rim
Handicapped	17 - 19 inches to top of seat

Urinal:

Standard	22 inches to top of bowl rim
Handicapped	17 inches to top of bowl rim

Lavatory:

Standard	31 inches to top of basin rim
Handicapped	34 inches to top of basin rim or 29 inches to underside of basin apron

Drinking Fountain:

Standard	40 inches to top of basin rim
Handicapped	36 inches to bubbler outlet

Water Closet Flush Valves:

Standard	11 inches minimum above bowl rim
Handicapped	Center line of flush valve shall not exceed 44" above fin. fl. Flush valve handle shall extend toward the wide side of stall.

Water Closet Tank Type - Trip Lever

Standard	Per manufacturer
Handicapped	Locate on tank side toward wide side of stall.

END OF SECTION