

SECTION 405 INSTALLATION OF FIXTURES

405.1 Water supply protection.

The supply lines and fittings for every plumbing fixture shall be installed so as to prevent backflow.

405.2 Access for cleaning.

Plumbing fixtures shall be installed so as to afford easy access for cleaning both the fixture and the area around the fixture.

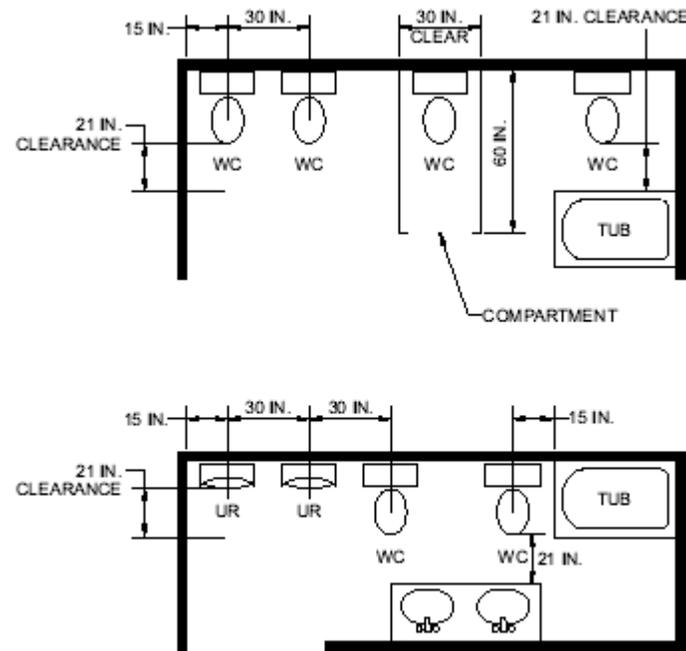
405.3 Setting.

Fixtures shall be set level and in proper alignment with reference to adjacent walls.

405.3.1 Water closets, urinals, lavatories and bidets.

A water closet, urinal, lavatory or bidet shall not be set closer than 15 inches (381 mm) from its center to any side wall, partition, vanity or other obstruction, or closer than 30 inches (762 mm) center-to-center between water closets, urinals or adjacent fixtures. There shall be at least a 21-inch (533 mm) clearance in front of the water closet, urinal or bidet to any wall, fixture or door. Water closet compartments shall not be less than 30 inches (762 mm) wide or 60 inches (1524 mm) deep. There shall be at least a 21-inch (533 mm) clearance in front of a lavatory to any wall, fixture or door (see Figure [405.3.1](#)).

**FIGURE 405.3.1
FIXTURE CLEARANCE**



405.3.2 Public lavatories.

In employee and public toilet rooms, the required lavatory shall be located in the same room as the required water closet.

405.4 Floor and wall drainage connections.

Connections between the drain and floor outlet plumbing fixtures shall be made with a floor flange. The flange shall be attached to the drain and anchored to the structure. Connections between the drain and wall-hung water closets shall be made with an approved extension nipple or horn adapter. The water closet shall be bolted to the hanger with corrosion-resistant bolts or screws. Joints shall be sealed with an approved elastomeric gasket, flange-to-fixture connection complying with ASME A112.4.3 or setting compound conforming to FS TT-P-1536a.

405.4.1 Floor flanges.

Floor flanges for water closets or similar fixtures shall not be less than 0.125 inch (3.2 mm) thick for brass, 0.25 inch (6.4 mm) thick for plastic, and 0.25 inch (6.4 mm) thick and not less than a 2-inch (51 mm) caulking depth for cast-iron or galvanized malleable iron.

Floor flanges of hard lead shall weigh not less than 1 pound, 9 ounces (0.7 kg) and shall be composed of lead alloy with not less than 7.75-percent antimony by weight. Closet screws and bolts shall be of brass. Flanges shall be secured to the building structure with corrosion-resistant screws or bolts.

405.4.2 Securing floor outlet fixtures.

Floor outlet fixtures shall be secured to the floor or floor flanges by screws or bolts of corrosion-resistant material.

405.4.3 Securing wall-hung water closet bowls.

Wall-hung water closet bowls shall be supported by a concealed metal carrier that is attached to the building structural members so that strain is not transmitted to the closet connector or any other part of the plumbing system. The carrier shall conform to ASME A112.6.1M or ASME A112.6.2.

405.5 Water-tight joints.

Joint formed where fixtures come in contact with walls or floors shall be sealed.

405.6 Plumbing in mental health centers.

In mental health centers, pipes or traps shall not be exposed, and fixtures shall be bolted through walls.

405.7 Design of overflows.

Where any fixture is provided with an overflow, the waste shall be designed and installed so that standing water in the fixture will not rise in the overflow when the stopper is closed, and no water will remain in the overflow when the fixture is empty.

405.7.1 Connection of overflows.

The overflow from any fixture shall discharge into the drainage system on the inlet or fixture side of the trap.

Exception: The overflow from a flush tank serving a water closet or urinal shall discharge into the fixture served.

405.8 Slip joint connections.

Slip joints shall be made with an approved elastomeric gasket and shall only be installed on the trap outlet, trap inlet and within the trap seal.

Fixtures with concealed slip-joint connections shall be provided with an access panel or utility space at least 12 inches (305 mm) in its smallest dimension or other approved arrangement so as to provide access to the slip joint connections for inspection and repair.

405.9 Design and installation of plumbing fixtures.

Integral fixture fitting mounting surfaces on manufactured plumbing fixtures or plumbing fixtures constructed on site, shall meet the design requirements of ASME A112.19.2M or ASME A112.19.3M.