

CHAPTER 4

PLUMBING FIXTURES AND FIXTURE FITTINGS

401.0 Materials – General Requirements.

401.1 Quality of Fixtures. Plumbing fixtures shall be constructed of dense, durable, non-absorbent materials and shall have smooth, impervious surfaces, free from unnecessary concealed fouling surfaces. Except as permitted elsewhere in this code, all fixtures shall conform in quality and design to nationally recognized applicable standards included in Table 14-1.

401.2 Lead. See Table 14-1. Sheet lead shall be not less than the following:

For safe pans not less than four (4) pounds per square foot (19.5 kg/m²) or 1/16 inch (1.6 mm) thick.

401.3 Plumbing fixture fittings covered under the scope of NSF 61 shall comply with the requirements of NSF 61.

402.0 Water-Conserving Fixtures and Fittings.

402.1 Flush volumes for low-consumption and water-saver water closets and urinals shall be in accordance with applicable standards referenced in Table 14-1.

402.2 Water Closets. Water closets, either flush tank, flushometer tank, or flushometer valve operated, shall have an average consumption of not more than 1.6 gallons (6.1 liters) of water per flush.

402.3 Urinals. Urinals shall have an average water consumption of not more than 1.0 gallon (3.8 liters) of water per flush.

402.4 Metered Faucets. Self-closing or self-closing metering faucets shall be installed on lavatories intended to serve the transient public, such as those in, but not limited to, service stations, train stations, airports, restaurants, and convention halls. Metered faucets shall deliver not more than 0.25 gallons (1.0 liter) of water per use.

402.5 Emergency Safety Showers. Emergency safety showers shall not be limited in their water supply flow rates.

402.6 Installation. Water-conserving fixtures shall be installed in strict accordance with the manufacturers' instructions to maintain their rated performance.

403.0 Overflows.

When any fixture is provided with an overflow, the waste shall be so arranged that the standing water in the fixture cannot rise in the overflow when the stopper is closed or remain in the overflow when the

fixture is empty. The overflow pipe from a fixture shall be connected on the house or inlet side of the fixture trap, except that overflow on flush tanks may discharge into the water closets or urinals served by them, but it shall be unlawful to connect such overflows with any other part of the drainage system.

404.0 Strainers and Connections.

404.1 Strainers. All plumbing fixtures, other than water closets and urinals, shall be equipped with approved strainers having an approved waterway area. Strainers serving shower drains shall have a waterway equivalent to the area of the tailpiece.

404.2 Connections. Fixtures having concealed slip joint connections shall be provided with an access panel or utility space at least twelve (12) inches (305 mm) in its least dimension and so arranged without obstructions as to make such connections accessible for inspection and repair.

404.3 Continuous wastes and fixture tailpieces shall be constructed from the materials specified in Section 701.0 for drainage piping, provided, however, that such connections where exposed or accessible may be of seamless drawn brass not less than No. 20 B&S Gauge (0.032 inches) (0.8 mm). Each such tailpiece, continuous waste, or waste and overflow shall not be less than one and one-half (1-1/2) inches (40 mm) O.D. for sinks, dishwashers, laundry tubs, bathtubs, urinals, and similar fixtures, and not less than one and one quarter (1-1/4) inches (32 mm) for lavatories, drinking fountains, and similar small fixtures.

404.4 Approved wye or other directional-type branch fittings shall be installed in all continuous wastes connecting or receiving the discharge from food waste disposal units, dishwashers, clothes washers, or other force discharge fixtures or appliances. No dishwasher drain shall be connected to a sink tailpiece, continuous waste, or trap on the discharge side of a food waste disposal unit.

405.0 Prohibited Fixtures.

405.1 Water closets having an invisible seal or an unventilated space or having walls which are not thoroughly washed at each discharge shall be prohibited. Any water closet that might permit siphonage of the contents of the bowl back into the tank shall be prohibited. Drinking fountains shall not be installed in public toilet rooms.

405.2 Prohibited Urinals. Floor-type and wall-hung

type trough urinals shall be prohibited. Urinals that have an invisible seal or that have an unventilated space or wall that is not thoroughly washed at each discharge shall be prohibited.

→ **405.3** Fixed wooden, or tile wash trays or sinks for domestic use shall not be installed in any building designed or used for human habitation. No sheet metal-lined wooden bathtub shall be installed or reconnected. No dry or chemical closet (toilet) shall be installed in any building used for human habitation, unless first approved by the Health Officer.

→ **406.0 Special Fixtures and Specialties.**

→ **406.1 Water and Waste Connections.** Baptisteries, ornamental and lily ponds, aquaria, ornamental fountain basins, and similar fixtures and specialties requiring water and/or waste connections shall be submitted for approval to the Authority Having Jurisdiction prior to installation.

→ **406.2** Restaurant kitchen and other special use sinks may be made of approved-type bonderized and galvanized sheet steel of not less than No. 16 U.S. gauge (0.0625 inches) (1.6 mm). All sheet-metal plumbing fixtures shall be adequately designed, constructed, and braced in an approved manner to satisfactorily accomplish their intended purpose.

→ **406.3 Special Use Fixtures.** Special use fixtures shall be made of one of the following:

- (A) Soapstone
- (B) Chemical stoneware
- (C) Copper-based alloy
- (D) Nickel-based alloy
- (E) Corrosion-resistant steel
- (F) Other materials suited for the intended use of the fixture.

→ **406.4 Zinc Alloy Components.** Zinc alloy components shall meet the applicable nationally recognized standards and shall be used in accordance with their listing.

407.0 Installation.

407.1 Cleaning. Plumbing fixtures shall be installed in a manner to afford easy access for repairs and cleaning. Where practical, all pipes from fixtures shall be run to the nearest wall.

407.2 Joints. Where a fixture comes in contact with the wall or floor, the joint between the fixture and the wall or floor shall be made watertight.

407.3 Securing Fixtures. Floor-outlet or floor-mounted fixtures shall be rigidly secured to the drainage connection and to the floor, when so designed, by screws or bolts of copper, brass, or other

equally corrosion-resistant material.

407.4 Wall-Hung Fixtures. Wall-hung fixtures shall be rigidly supported by metal supporting members so that no strain is transmitted to the connections. Flush tanks and similar appurtenances shall be secured by approved non-corrosive screws or bolts.

407.5 Securing Floor-Mounted, Back-Outlet Water Closet Bowls. Floor-mounted, back-outlet water closet bowls shall be set level with an angle of ninety (90) degrees (1.58 rad) between the floor and wall at the centerline of the fixture outlet. The floor and wall shall have a flat mounting surface for at least five (5) inches (127 mm) to the right and left of the fixture outlet centerline. The fixture shall be secured to the wall outlet flange or drainage connection and to the floor by corrosion-resistant screws or bolts. The closet flange shall be secured to a firm base.

Where floor-mounted, back-outlet water closets are used, the soil pipe shall not be less than three (3) inches (80 mm) in diameter. Offset, eccentric, or reducing floor flanges shall not be used.

407.6 Setting. Fixtures shall be set level and in proper alignment with reference to adjacent walls. No water closet or bidet shall be set closer than fifteen (15) inches (381 mm) from its center to any side wall or obstruction nor closer than thirty (30) inches (762 mm) center to center to any similar fixture. The clear space in front of any water closet or bidet shall not be less than twenty-four (24) inches (610 mm). No urinal shall be set closer than twelve (12) inches (305 mm) from its center to any side wall or partition nor closer than twenty-four (24) inches (610 mm) center to center.

407.7 Installations for Persons with Disabilities. Where facilities for persons with disabilities are required in applicable building regulations, the facilities shall be installed in accordance with those regulations.

407.8 Supply Fittings. The supply lines and fittings for every plumbing fixture shall be so installed as to prevent backflow as required in Chapter 6.

408.0 Water Closets.

408.1 Water closet bowls for public use shall be of the elongated type. In nurseries, schools, and other similar places where plumbing fixtures are provided for the use of children under six (6) years of age, water closets shall be of a size and height suitable for children's use. All water closets shall be equipped with seats as required below.

408.2 Water Closet Seats.

408.2.1 Water closet seats shall be of smooth, non-absorbent material.

408.2.2 All water closet seats, except those

within dwelling units, shall be either of the open front type or have an automatic seat cover dispenser.

408.2.3 Water closet seats shall be properly sized for the water closet bowl type.

408.2.4 Seats for use in public buildings shall conform to the standard listed in Table 14-1.

409.0 Urinals.

Every water supply to a urinal shall be protected by an approved-type vacuum breaker or other approved backflow prevention device as described in Section 603.3.

410.0 Flushing Devices for Water Closets and Urinals.

410.1 Flushing Devices Required. Each water closet, urinal, clinic sink, or other plumbing fixture that depends on trap siphonage to discharge its waste contents shall be provided with a flushometer valve, flushometer tank, or flush tank designed and installed so as to supply water in sufficient quantity and rate of flow to flush the contents of the fixture to which it is connected, to cleanse the fixture, and to refill the fixture trap, without excessive water use. Flushing devices shall meet anti-siphon requirements required in Chapter 6.

410.2 Automatic Flushing Tanks. Tanks flushing more than one (1) urinal shall be automatic in operation and of sufficient capacity to provide the necessary volume to flush and properly cleanse all urinals simultaneously. Automatically controlled flushometer valves may be substituted for flush tanks.

410.3 Flushometer Valves. No manually controlled flushometer valve shall be used to flush more than one (1) urinal, and each such urinal flushometer valve shall be an approved, self-closing type discharging a predetermined quantity of water. Flushometers shall be installed so that they will be accessible for repair. Flushometer valves shall not be used where the water pressure is insufficient to properly operate them. When the valve is operated, it shall complete the cycle of operation automatically, opening fully and closing positively under the line water pressure. Each flushometer shall be provided with a means for regulating the flow through it.

410.4 Water Supply for Flush Tanks. An adequate quantity of water shall be provided to flush and clean the fixture served. The water supply for flushing tanks and flushometer tanks equipped for manual flushing shall be controlled by a float valve or other automatic device designed to refill the tank after each discharge and to completely shut off the water flow to the tank when the tank is filled to operational capacity.

Provision shall be made to automatically supply water to the fixture so as to refill the trap seal after each flushing. The water supply to flush tanks equipped for automatic flushing shall be controlled by a suitable timing device.

410.5 Overflows in Flush Tanks. Flush tanks shall be provided with overflows discharging into the water closet or urinal connected thereto. Overflows supplied as original parts with the fixture shall be of sufficient size to prevent tank flooding at the maximum rate at which the tank is supplied with water under normal operating conditions and when installed per manufacturer's instructions.

411.0 Floor Drains and Shower Stalls.

411.1 Floor drains shall be considered plumbing fixtures, and each such drain shall be provided with an approved-type strainer having a waterway equivalent to the area of the tailpiece. Floor drains, floor receptors, and shower drains shall be of an approved type, suitably flanged to provide a watertight joint in the floor.

411.2 Location of Floor Drains. Floor drains shall be installed in the following areas:

411.2.1 Toilet rooms containing two (2) or more water closets or a combination of one (1) water closet and one (1) urinal, except in a dwelling unit.

411.2.2 Commercial kitchens.

411.2.3 Laundry rooms in commercial buildings and common laundry facilities in multi-family dwelling buildings.

411.3 Food Storage Areas. If drains are provided in storerooms, walk-in freezers, walk-in coolers, refrigerated equipment, or other locations where food is stored, such drains shall have indirect waste piping. Separate waste pipes shall be run from each food storage area, each with an indirect connection to the building sanitary drainage system. Traps shall be provided if required under Section 801.2.2 of this code and shall be vented.

Indirect drains may be located in freezers or other spaces where freezing temperatures are maintained, provided that traps, when supplied, are located where the seal will not freeze. Otherwise, the floor of the freezer shall be sloped to a floor drain located outside of the storage compartment.

411.4 Floor Slope. Floors shall be sloped to floor drains.

411.5 Shower receptors are plumbing fixtures and shall conform to the general requirements contained in Section 401.0. Each such shower receptor shall be constructed of vitrified china or earthenware, ceramic tile, porcelain-enameled metal, or of such other material as may be acceptable to the Authority Having

Linings shall be properly recessed and fastened to approved backing so as not to occupy the space required for the wall covering and shall not be nailed or perforated at any point that may be less than one (1) inch (25.4 mm) above the finished dam or threshold. An approved-type subdrain shall be installed with every shower subpan or lining. Each such subdrain shall be of the type that sets flush with the subbase and shall be equipped with a clamping ring or other device to make a tight connection between the lining and the drain. The subdrain shall have weep holes into the waste line. The weep holes located in the subdrain clamping ring shall be protected from clogging.

All shower lining materials shall conform to approved standards acceptable to the Authority Having Jurisdiction.

~~*Lead and copper~~ subpans or linings shall be insulated from all conducting substances other than their connecting drain by fifteen (15) pound (6.8 kg) asphalt felt or its equivalent, and no lead pan or liner shall be constructed of material weighing less than four (4) pounds per square foot (19.5 kg/m²). Copper pans or liners shall be at least No. 24 B & S Gauge (0.02 inches) (0.5 mm). Joints in lead pans or liners shall be burned. Joints in copper pans or liners shall be soldered or brazed. Plastic pans shall not be coated with asphalt-based materials.

411.8.1 Tests for Shower Receptors. Shower receptors shall be tested for watertightness by filling with water to the level of the rough threshold. The test plug shall be so placed that both upper and under sides of the subpan shall be subjected to the test at the point where it is clamped to the drain.

411.9 Floors of public shower rooms shall have a nonskid surface and shall be drained in such a manner that wastewater from one bather will not pass over areas occupied by other bathers. Gutters in public or gang shower rooms shall have rounded corners for easy cleaning and shall be sloped not less than two (2) percent toward drains. Drains in gutters shall be spaced not more than eight (8) feet (2438 mm) from sidewalls nor more than sixteen (16) feet (4879 mm) apart.

411.10 Location of Valves and Heads. Control valves and showerheads shall be located on the sidewall of shower compartments or be otherwise arranged so that the showerhead does not discharge directly at the entrance to the compartment and the bather can adjust the valves prior to stepping into the shower spray.

411.11 Water Supply Riser. Every water supply

riser from the shower valve to the showerhead outlet, whether exposed or not, shall be securely attached to the structure.

412.0 Minimum Number of Required Fixtures.

412.1 Fixture Count. Plumbing fixtures shall be provided for the type of building occupancy and in the minimum number shown in Table 4-1.

412.2 Access to Fixtures.

412.2.1 In multi-story buildings, accessibility to the required fixtures shall not exceed one (1) vertical story.

412.2.2 Fixtures accessible only to private offices shall not be counted to determine compliance with this section.

412.3 Separate Facilities.

Separate toilet facilities shall be provided for each sex.

Exceptions:

- (1) Residential installations.
- (2) In occupancies serving ten (10) or fewer people, one (1) toilet facility, designed for use by no more than one (1) person at a time, shall be permitted for use by both sexes.
- (3) In business and mercantile occupancies with a total floor area of fifteen hundred (1500) square feet (139.5 m²) or less, one (1) toilet facility, designed for use by no more than one (1) person at a time, shall satisfy the requirements for serving customers and employees of both sexes.

412.4 Fixture Requirements for Special Occupancies.

412.4.1 Additional fixtures may be required when unusual environmental conditions or special activities are encountered.

412.4.2 In food preparation areas, fixture requirements may be dictated by health codes.

412.4.3 Types of occupancy not shown in Table 4-1 shall be considered individually by the Authority Having Jurisdiction.

412.5 Facilities in Mercantile and Business Occupancies Serving Customers.

412.5.1 Requirements for customers and employees shall be permitted to be met with a single set of restrooms accessible to both groups. The required number of fixtures shall be the greater of the required number for employees or the required number for customers.

412.5.2 Fixtures for customer use shall be permitted to be met by providing a centrally located facility accessible to several stores. The maximum distance from entry to any store to

this facility shall not exceed five hundred (500) feet (152.4 m).

412.5.3 In stores with a floor area of one hundred fifty (150) square feet (13.9 m²) or less, the requirement to provide facilities for employees shall be permitted to be met by providing a centrally located facility accessible to several stores. The maximum distance from entry to any store to this facility shall not exceed three hundred (300) feet (91.4 m).

412.6 Food Service Establishments. Food service establishments with an occupant load of one hundred (100) or more shall be provided with separate facilities for employees and customers. Customer and employee facilities may be combined for occupant loads less than one hundred (100).

412.7 Toilet Facilities for Workers.

Suitable toilet facilities shall be provided and maintained in a sanitary condition for the use of workers during construction.

413.0 Fixtures and Fixture Fittings for Persons with Disabilities.

Plumbing fixtures and fixture fittings for persons with disabilities shall conform to the appropriate standards referenced in Table 14-1 of this code.

413.1 Limitation of Hot Water Temperature for Public Lavatories.

Hot water delivered from public-use lavatories shall be limited to a maximum temperature of 120°F. The water heater thermostat shall not be considered a control for meeting this provision.

414.0 Bathtubs and Whirlpool Bathtubs.

Unless otherwise listed, all bathtubs and whirlpool bathtubs shall comply with the following requirements:

414.1 A removable panel shall be provided to access and remove the pump. Whirlpool pump access located in the crawl space shall be located no more than twenty (20) feet (6096 mm) from an access door, trap door, or crawl hole.

414.2 The circulation pump shall be located above the crown weir of the trap.

414.3 The pump and the circulation piping shall be self-draining to minimize water retention in accordance with standards referenced in Table 14-1.

414.4 Suction fittings on whirlpool bathtubs shall comply with the listed standards.

414.5 Limitation of Hot Water in Bathtubs and Whirlpool Bathtubs. The maximum hot water temperature discharging from the bathtub and whirlpool bathtub filler shall be limited to 120°F. The

water heater thermostat shall not be considered a control for meeting this provision.

415.0 Installation of Fixture Fittings.

Where two separate handles control the hot and cold water, the left-hand control of the faucet when facing the fixture fitting outlet shall provide the means to alter the hot water temperature from the fixture fitting.

Single-handle mixing valves shall have the flow of hot water correspond to the markings on the fitting.

416.0 Bidets.

416.1 Materials. Bidets shall conform to the standards listed in Table 14-1.

416.2 Backflow Protection. The water supply to the bidet shall be protected according to Chapter 6, which allows for an airgap or vacuum breaker.

417.0 Future Fixtures.

When provision is made for the future installation of fixtures, those provided for shall be considered in determining the required sizes of drain pipes. Construction for future installations shall be terminated with a plugged fitting or fittings. Where the plugged fitting is at the point where the trap of a fixture may be installed, the plumbing system for such fixture shall be complete and conform with all plumbing requirements of this code.

418.0 Shower and Tub-Shower Combination Control Valves.

Showers and tub-shower combinations in all buildings shall be provided with individual control valves of the pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valve type that provide scald and thermal shock protection. These valves shall conform to ASSE 1016. Gang showers, when supplied with a single temperature-controlled water supply pipe, may be controlled by a master thermostatic mixing valve in lieu of individually controlled pressure balance, thermostatic, or combination pressure balance/thermostatic mixing valves. Handle position stops shall be provided on such valves and shall be adjusted per the manufacturer's instructions to deliver a maximum mixed water setting of 120°F (49°C). The water heater thermostat shall not be considered a suitable control for meeting this provision.

**TABLE 4-1
Minimum Plumbing Facilities¹**

Each building shall be provided with sanitary facilities, including provisions for persons with disabilities as prescribed by the Department Having Jurisdiction. For requirements for persons with disabilities, ICC/ANSI A117.1, Accessible and Usable Buildings and Facilities, may be used.

The total occupant load shall be determined by minimum exiting requirements. The minimum number of fixtures shall be calculated at fifty (50) percent male and fifty (50) percent female based on the total occupant load.

The occupant load and use of the building or space under consideration shall first be established using the Occupant Load Factor Table A. Once the occupant load and uses are determined, the requirements of Section 412.0 and Table 4-1 shall be applied to determine the minimum number of plumbing fixtures required.

This table applies to new buildings, additions to a building, changes of occupancy or type in an existing building resulting in increased occupant load (example: change an assembly room from fixed seating to open seating). Exception: New cafeterias for employee use are the only use exempted from this requirement.

Type of Building or Occupancy ²	Water Closets ¹⁴ (Fixtures per Person)	Urinals ^{5, 10} (Fixtures per Person)	Lavatories (Fixtures per Person)	Bathtubs or Showers (Fixtures per Person)	Drinking Fountains ^{3, 13, 18} (Fixtures per Person)
Assembly places – theatres, auditoriums, convention halls, etc.– for permanent employee use	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons. Female 1: 1-15 3: 16-35 4: 36-55	Male 0: 1-9 1: 10-50 Add one fixture for each additional 50 males.	Male 1 per 40 Female 1 per 40		
Assembly places – theatres, auditoriums, convention Halls, etc. – for public use	Male 1: 1-100 2: 101-200 3: 201-400 Over 400, add one fixture for each additional 500 males and 1 for each additional 125 females. Female 3: 1-50 4: 51-100 8: 101-200 11: 201-400	Male 1: 1-100 2: 101-200 3: 201-400 4: 401-600 Over 600, add 1 fixture for each additional 300 males.	Male 1: 1-200 2: 201-400 3: 401-750 Over 750, add one fixture for each additional 500 persons. Female 1: 1-200 2: 201-400 3: 401-750		1: 1-150 2: 151-400 3: 401-750 Over 750, add one fixture for each additional 500 persons.
Dormitories ⁵ – School or labor ¹⁷	Male 1 per 10 Add 1 fixture for each additional 25 males (over 10) and 1 for each additional 20 females (over 8). Female 1 per 8	Male 1 per 25 Over 150, add 1 fixture for each additional 50 males.	Male 1 per 12 Over 12, add one fixture for each additional 20 males and 1 for each 15 additional females. Female 1 per 12	1 per 8 For females, add 1 bathtub per 30. Over 150, add 1 bathtub per 20.	1 per 150 ¹²
Dormitories – for staff use ¹⁷	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons. Female 1: 1-15 3: 16-35 4: 36-55	Male 1 per 50	Male 1 per 40 Female 1 per 40	1 per 8	
Dwellings ⁴ Single dwelling Multiple dwelling or apartment house ¹⁷	1 per dwelling 1 per dwelling or apartment unit		1 per dwelling 1 per dwelling or apartment unit	1 per dwelling 1 per dwelling or apartment unit	
Hospital waiting rooms	1 per room		1 per room		1 per 150 ¹²
Hospitals – for employee use	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons. Female 1: 1-15 3: 16-35 4: 36-55	Male 0: 1-9 1: 10-50 Add one fixture for each additional 50 males.	Male 1 per 40 Female 1 per 40		
Hospitals Individual room Ward room	1 per room 1 per 8 patients		1 per room 1 per 10 patients	1 per room 1 per 20 patients	1 per 150 ¹²
Industrial ⁶ warehouses, workshops, foundries, and similar establishments – for employee use	Male 1: 1-10 2: 11-25 3: 26-50 4: 51-75 5: 76-100 Over 100, add 1 fixture for each additional 30 persons. Female 1: 1-10 2: 11-25 3: 26-50 4: 51-75 5: 76-100		Up to 100, 1 per 10 persons Over 100, 1 per 15 persons ^{7, 8}	1 shower for each 15 persons exposed to excessive heat or to skin contamination with poisonous, infectious, or irritating material	1 per 150 ¹²
Institutional – other than hospitals or penal institutions (on each occupied floor)	Male 1 per 25 Female 1 per 20	Male 0: 1-9 1: 10-50 Add one fixture for each additional 50 males.	Male 1 per 10 Female 1 per 10	1 per 8	1 per 150 ¹²
Institutional – other than hospitals or penal institutions (on each occupied floor) – for employee use	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons. Female 1: 1-15 3: 16-35 4: 36-55	Male 0: 1-9 1: 10-50 Add one fixture for each additional 50 males.	Male 1 per 40 Female 1 per 40	1 per 8	1 per 150 ¹²

Table 4-1 continued

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Type of Building or Occupancy ²	Water Closets ¹⁴ (Fixtures per Person)		Urinals ^{5,10} (Fixtures per Person)	Lavatories (Fixtures per Person)		Bathtubs or Showers (Fixtures per Person)	Drinking Fountains ^{3,13} (Fixtures per Person)
Office or public buildings	Male 1: 1-100 2: 101-200 3: 201-400 Over 400, add one fixture for each additional 500 males and 1 for each additional 150 females.	Female 3: 1-50 4: 51-100 8: 101-200 11: 201-400	Male 1: 1-100 2: 101-200 3: 201-400 4: 401-600 Over 600, add 1 fixture for each additional 300 males.	Male 1: 1-200 2: 201-400 3: 401-750 Over 750, add one fixture for each additional 500 persons.	Female 1: 1-200 2: 201-400 3: 401-750		1 per 150 ¹²
Office or public buildings – for employee use	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons.	Female 1: 1-15 3: 16-35 4: 36-55	Male 0: 1-9 1: 10-50 Add one fixture for each additional 50 males.	Male 1 per 40	Female 1 per 40		
Penal institutions – for employee use	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons.	Female 1: 1-15 3: 16-35 4: 36-55	Male 0: 1-9 1: 10-50 Add one fixture for each additional 50 males.	Male 1 per 40	Female 1 per 40		1 per 150 ¹²
Penal institutions – for prison use							
Cell	1 per cell		Male 1 per exercise room	1 per cell			1 per cell block floor
Exercise room	1 per exercise room			1 per exercise room			1 per exercise room
Public or professional offices ¹⁵	Same as Office or Public Buildings for employee use ¹⁵		Same as Office or Public Buildings for employee use ¹⁵	Same as Office or Public Buildings for employee use ¹⁵			Same as Office or Public Buildings for employee use ¹⁵
Restaurants, pubs, and lounges ^{11,15,16}	Male 1: 1-50 2: 51-150 3: 151-300 Over 300, add 1 fixture for each additional 200 persons.	Female 1: 1-50 2: 51-150 4: 151-300	Male 1: 1-150 Over 150, add 1 fixture for each additional 150 males.	Male 1: 1-150 2: 151-200 3: 201-400 Over 400, add 1 fixture for each additional 400 persons.	Female 1: 1-150 2: 151-200 3: 201-400		
Retail or Wholesale Stores	Male 1:1-100 2:101-200 3:201-400 Over 400, add one fixture for each additional 500 males and one for each 150 females	Female 1:1-25 2:26-100 4:101-200 6:201-300 8: 301-400	Male 0:0-25 1:26-100 2:101-200 3:201-400 4:401-600 Over 600, add one fixture for each additional 300 males	One for each two water closets			0: 1-30 ¹⁷ 1:31-150 One additional drinking fountain for each 150 persons thereafter
Schools – for staff use All schools	Male 1: 1-15 2: 16-35 3: 36-55 Over 55, add 1 fixture for each additional 40 persons.	Female 1: 1-15 2: 16-35 3: 36-55	Male 1 per 50	Male 1 per 40	Female 1 per 40		
Schools – for student use Nursery	Male 1: 1-20 2: 21-50 Over 50, add 1 fixture for each additional 50 persons.	Female 1: 1-20 2: 21-50		Male 1: 1-25 2: 26-50 Over 50, add 1 fixture for each additional 50 persons.	Female 1: 1-25 2: 26-50		1 per 150 ¹²
Elementary	Male 1 per 30	Female 1 per 25	Male 1 per 75	Male 1 per 35	Female 1 per 35		1 per 150 ¹²
Secondary	Male 1 per 40	Female 1 per 30	Male 1 per 35	Male 1 per 40	Female 1 per 40		1 per 150 ¹²
Others (colleges, universities, adult centers, etc.)	Male 1 per 40	Female 1 per 30	Male 1 per 35	Male 1 per 40	Female 1 per 40		1 per 150 ¹²
Worship places educational and activities Unit	Male 1 per 150	Female 1 per 75	Male 1 per 150	1 per 2 water closets			1 per 150 ¹²
Worship places principal assembly place	Male 1 per 150	Female 1 per 75	Male 1 per 150	1 per 2 water closets			1 per 150 ¹²

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- ¹ The figures shown are based upon one (1) fixture being the minimum required for the number of persons indicated or any fraction thereof.
- ² Building categories not shown on this table shall be considered separately by the Authority Having Jurisdiction.
- ³ Drinking fountains shall not be installed in toilet rooms.
- ⁴ Laundry trays. One (1) laundry tray or one (1) automatic washer standpipe for each dwelling unit or one (1) laundry tray or one (1) automatic washer standpipe, or combination thereof, for each twelve (12) apartments. Kitchen sinks, one (1) for each dwelling or apartment unit.
- ⁵ For each urinal added in excess of the minimum required, one water closet may be deducted. The number of water closets shall not be reduced to less than two-thirds (2/3) of the minimum requirement.
- ⁶ As required by ANSI Z4.1, Sanitation in Places of Employment.
- ⁷ Where there is exposure to skin contamination with poisonous, infectious, or irritating materials, provide one (1) lavatory for each five (5) persons.
- ⁸ Twenty-four (24) lineal inches (610 mm) of wash sink or eighteen (18) inches (457 mm) of a circular basin, when provided with water outlets for such space, shall be considered equivalent to one (1) lavatory.
- ⁹ Laundry trays, one (1) for each fifty (50) persons. Service sinks, one (1) for each hundred (100) persons.
- ¹⁰ General. In applying this schedule of facilities, consideration shall be given to the accessibility of the fixtures. Conformity purely on a numerical basis may not result in an installation suited to the needs of the individual establishment. For example, schools should be provided with toilet facilities on each floor having classrooms.
- a. Surrounding materials, wall, and floor space to a point two (2) feet (610 mm) in front of urinal lip and four (4) feet (1219 mm) above the floor, and at least two (2) feet (610 mm) to each side of the urinal shall be lined with non-absorbent materials.
 - b. Trough urinals shall be prohibited.
- ¹¹ A restaurant is defined as a business that sells food to be consumed on the premises.
- a. The number of occupants for a drive-in restaurant shall be considered as equal to the number of parking stalls.
 - b. Employee toilet facilities shall not be included in the above restaurant requirements. Hand-washing facilities shall be available in the kitchen for employees.
- ¹² Where food is consumed indoors, water stations may be substituted for drinking fountains. Offices, or public buildings for use by more than six (6) persons shall have one (1) drinking fountain for the first one hundred fifty (150) persons and one (1) additional fountain for each three hundred (300) persons thereafter.
- ¹³ There shall be a minimum of one (1) drinking fountain per occupied floor in schools, theatres, auditoriums, dormitories, offices, or public buildings.
- ¹⁴ The total number of water closets for females shall be at least equal to the total number of water closets and urinals required for males. This requirement shall not apply to Retail or Wholesale Stores.
- ¹⁵ For smaller-type Public and Professional Offices such as banks, dental offices, law offices, real estate offices, architectural offices, engineering offices, and similar uses. A public area in these offices shall use the requirements for Retail or Wholesale Stores.
- ¹⁶ A unisex facility (one water closet and one lavatory) may be used when the customer occupant load for the dining area, including outdoor seating area, is 10 or less and the total number of employees for the space is 4 or less.
- ¹⁷ Recreation or community room in multiple dwellings or apartment buildings, regardless of their occupant load, shall be permitted to have separate single-accommodation facilities in common-use areas within tracts or multi-family residential occupancies where the use of these areas is limited exclusively to owners, residents, and their guests. Examples are community recreation or multi-purpose areas in apartments, condos, townhouses, or tracts.
- ¹⁸ A drinking fountain shall not be required in occupancies of 30 or less. When a drinking fountain is not required, then footnotes 3, 12, and 13 are not applicable.

Table A. Occupant Load Factor:

Occupancy*, **	Occupant Load Factor (square feet) (CBC 2001, Table A-29A)
Group A	
1. Auditoriums, convention halls, dance floors, lodge rooms, stadiums, and casinos (use 1/2 "one-half" the number of fixed seating)	15 (where no fixed seating is provided)
2. Conference rooms, dining rooms, drinking establishments, exhibit rooms, gymnasiums, lounges, stages, and similar uses, including restaurants classified as Group B occupancies	30
3. Worship places; principal assembly area, educational and activity unit (use 1/2 "one-half" the number of fixed seating)	30 (where no fixed seating is provided)
Group B	
Office or public buildings (area accessible to the public)	200
Group E	
Schools for daycare, elementary, secondary	50
Educational Facilities Other than Group E	
Colleges, universities, adult centers, etc.	50
Group F	
Workshops, foundries and similar establishments	2,000
Group H	
Hazardous materials fabrication and storage	2,000
Group I	
Hospital general use area, health care facilities	200
Group M	
Retail or Wholesale stores	200
Group R	
Congregate residence, Group R-1	200
Group S	
Warehouse	5,000
* Any uses not specifically listed shall be based on similar uses listed in this table.	
** For building or space with mixed occupancies, use appropriate occupancy group for each area (for example, a school may have an "A" occupancy for the gymnasium, a "B" occupancy for the office, an "E" occupancy for the classrooms, etc.) Accessory areas may be excluded (for example: hallway, restroom, stair enclosure)	