

CHAPTER 4 PLUMBING FIXTURES

401 GENERAL

401.1 Scope

The provisions of this chapter shall govern the materials, design, installation, and quality of fixtures.



401.5 Prohibited Fixtures and Connections

401.5.1 Fixtures. Pan, valve, plunger, offset, washout, latrine, frostproof and other water closets having an invisible seal or an unventilated space or having walls which are not thoroughly washed at each discharge, and floor type trough urinals shall be prohibited. Any water closet which might permit siphonage of the contents of the bowl back into the tank shall be prohibited (for example, low down tank type water closets, etc.).

401.5.2 Connections. Fixtures having concealed slip-joint connections shall be provided with an access panel or utility space so arranged as to make the slip connections accessible for inspection and repair.

401.5.3 Limited Access. When access to waste and overflow fittings cannot be provided as required for slip joints in 401.5.2 or when bathtubs are set head-to-head, joints complying with 612.2 may be used. In such limited access cases, waste and overflow shall be of the straight-through type with overflow connecting to the tee branch which will allow the fixture, drain, and trap to be cleaned without disturbing concealed joints. Connections shall be inspected prior to concealment.

402 DEFINITIONS

The following definitions have been moved to Chapter 2: PRIVATE OR PRIVATE USE, PUBLIC OR PUBLIC USE.

403 INSTALLATION

403.1 Cleaning

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

403.2 Joints

Where a fixture comes in contact with a wall or floor, the joint shall be watertight.

403.3 Wall-Hung Bowls

Wall-hung water closet bowls shall be rigidly supported by a concealed metal supporting member so that no strain is transmitted to the closet connection.

403.4 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 15 inches (381 mm) from its center to any side wall or partition nor closer than 30 inches (762 mm) center-

to-center with adjacent fixtures. No urinal shall be set closer than 12 inches (305 mm) from its center to any side wall or partition nor closer than 24 inches (610 mm) center-to-center with adjacent urinal fixtures. See 708.

403.5 Sanitation

All public toilet room floor surfaces shall be of non-absorbent, impervious material.

404 LOCATION OF FIXTURES

404.1 Light and Ventilation

404.1.1 Means of Ventilation

404.1.1.1 Every restroom, bathroom or water closet combination shall be provided with ventilation by one or more operable windows opening to the outside of the building, by mechanical exhaust or by other means approved by the administrative authority.

404.1.1.2 When an operable window opening to the outside of the building is used for ventilation, an insect mesh screen shall be installed on such opening.

404.1.1.3 Public restrooms, bathrooms or water closet combinations shall be provided with ventilation by mechanical exhaust. When separate facilities for employees or staff of food service establishments, markets and retail food stores are provided, such facilities shall also be provided with ventilation by mechanical exhaust.

404.1.2 Combustion Chambers

The combustion chambers of all heaters, heating systems and other fired equipment shall be vented to the atmosphere. Other parts of the heating, cooling and ventilating system shall be so designed, built and maintained as to ensure that the pressure in the space from which combustion air is drawn does not become negative with respect to the atmosphere.

404.1.3 Mechanical Exhaust

All restrooms, bathrooms and water closet combinations which are ventilated by mechanical exhaust shall have fixed openings from adjacent room or corridors or from other approved sources, large enough to provide a sufficient inflow of air to make exhaust ventilation effective. Ventilation ducts from restrooms, bathrooms and water closet combinations shall be exhausted to the outside air or be connected into an independent system that exhausts to the outside air.

404.1.4 Illumination Level

Artificial lighting shall be installed in every restroom, bathroom or water closet combination sufficient to provide an illumination level of at least ten foot-candles, measured three feet off of the floor.

404.1.5 Partitions

Where a water closet is completely enclosed by partitions, such enclosure shall be separately lighted and ventilated.

404.2 Improper Location

Piping, fixtures or equipment shall not be located in such a manner as to interfere with the normal operation of windows, doors or other exit openings. Toilet rooms for public use shall not open directly into a room for the preparation of food for service to the public.

404.3 Toilet Facilities for Construction Workers

Toilet facilities, of the type and in the quantity approved by the administrative authority, shall be provided and maintained in a sanitary condition for the use of workmen during construction.

405 MATERIALS AND PERFORMANCE STANDARDS

Plumbing fixtures shall be constructed from approved materials, have smooth impervious surfaces, be free from defects and concealed fouling surfaces. Except as permitted elsewhere in this code, plumbing fixtures shall conform to the standards listed in Table 405, other than maximum flow limitations.

**Table 405
General Fixtures and Accessories**

MATERIALS	STANDARDS
Plumbing Fixture Fittings	ASME A112.18.1M
Flexible Water Connectors	ASME A112.18.6
Fixtures, Enameled Cast Iron Plumbing	ASME A112.19.1M
Fixtures, Non-Vitreous Ceramic (Fireclay)	ASME A112.19.9M
Fixtures, Vitreous China Plumbing	ASME A112.19.2M
Fixtures, Hydraulic Performance for Water Closets and Urinals	ASME A112.19.6
Fixtures, Stainless Steel Plumbing (Designed for Residential Use)	ASME A112.19.3M
Porcelain Enameled Formed Steel Plumbing Fixture	ASME A112.19.4M
Fixtures, Plumbing (for) Land Use, including Fixtures for Medical and Dental Facilities	FS WW-P-541 E/GEN(1)
Fixture-Setting Compound	FS HH-C-536c
Lead, Caulking	FS QQ-L-156
Plastic Bathtub Units	ANSI Z124.1
Plastic Lavatories	ANSI Z124.3
Plastic Sinks	ANSI Z124.6
Plastic Water Closet Bowls and Tanks	ANSI Z124.4
Trim for Water Closet Bowls, Tanks and Urinals	ASME A112.19.5
Water Hammer Arresters	ASSE 1010

406 WATER CONSERVATION

Plumbing fixtures and plumbing fixture fittings should conform to the following requirements.

- All faucets, showerheads and their packaging should be marked by the manufacturer in accordance with the provisions of ASME Standard A 112.18.1M listed in Table 405. Water closets and urinals and their packaging should be marked in accordance with the provisions of ASME A 112.19.2M listed in Table 405.
- New or replacement water closets, and urinals, should not be installed with a flow rate or flush volume in excess of the maximum specified in Table 406, when tested in accordance with the provisions of the applicable ASME Standard listed in Table 405.

**Table 406
Maximum Allowable
Water Usage For Plumbing Fixtures¹**

Water closets, flushometer tank or close-coupled 2-piece gravity-flush type	1.6 gal/flush
Water closets, one-piece	1.6 gal/flush
Water closets, nonresidential application	3.5 gal/flush
Urinals	1.0 gal/flush

1 gpm = 0.0631 L/s

1 gallon = 3.7854 L

Note:

1. Maximum allowable water usage for plumbing fixtures and fixture fittings not listed in this table should conform to the applicable ANSI or ASME standard listed in Table 405. Blowout fixtures, panelwear, clinic sinks and service sinks shall be exempted from these limitations.

407 MINIMUM PLUMBING FIXTURES

407.1 General

407.1.1 Restroom Plumbing Fixtures. Notwithstanding the provisions of section 1:011(b) of the Louisiana State Sanitary Code, in new construction, substantial renovation or building additions and in changes of occupancy classification or real property ownership, at least the minimum type(s) of rest room plumbing fixtures provided for in this section shall be installed, and the minimum number of each type of restroom plumbing fixture shall be in accordance with Table 407. The term "substantial renovation" as used 407.1.1 includes, but is not limited to, a renovation/operational change which would trigger the need, pursuant to the requirements of Table 407, for additional restroom plumbing fixtures to be installed, even if the occupancy classification itself may not have changed.

407.1.2 Non-Restroom Plumbing Fixtures. Where the construction of buildings and facilities was approved by the State Health Officer pursuant to Sanitary Code requirements then in effect, upgrading of such buildings and facilities to comply with the non-restroom plumbing fixture requirements of Table 407 shall not be required except where:

1. substantial renovation or building additions are undertaken, or
2. where the occupant or real property ownership thereof or the occupancy classification located therein changes subsequent to the effective date hereof, or
3. where a serious health threat to the public health exists, unless otherwise specifically provided hereinafter.

The term "substantial renovation" as used in 407.1.2 includes, but is not limited to, a renovation/operational change which would trigger the need, pursuant to the requirements of Table 407, for additional non-restroom plumbing fixtures to be installed, even if the occupant or the occupancy classification itself may not have changed.

407.1.3 Except as may be otherwise specifically noted within Table 407, the number of occupants of a building shall be determined by the square feet of usable floor space. In determining the usable floor space, the square foot area of permanent structural building components, food service establishment kitchens, toilet rooms, corridors, stairways, vertical shafts and equipment rooms, when necessary for the operation of building utilities only, may be deducted from the total aggregate floor area.

407.1.4 Tenancies, rental units or other usable areas within a building when separated from the required toilet facilities by walls or partitions without common access openings shall be considered independently from the remainder of the building and shall be provided with separate facilities in accordance with this chapter regardless of the type of occupancy.

407.1.5 In self-storage (mini-warehouse) complexes, facilities shall not be required in each building, but shall be located at the office or entrance and such that the plumbing official determines the intent of the code is satisfied (see 407.2).

407.2 Table 407 — General

407.2.1 In applying the schedule of facilities recorded in Table 407, consideration must be given to the accessibility of the fixtures. Conformity purely on a numerical basis may not result in an installation suitable to the need of the individual establishment. For example, schools should be provided with toilet facilities on each floor having classrooms.

407.2.2 Every building and each subdivision thereof intended for public use shall be provided with facilities in accordance with this chapter. Required facilities shall be directly accessible to the public through direct openings or

corridors from the area or areas they are intended to serve. Required facilities shall be free and designated by legible signs for each sex. Pay facilities may be installed when in excess of the required minimum facilities.

**Table 407
Minimum Plumbing Fixtures¹**

Building or Occupancy ²	Occupant Content ²	Water Closets ³			Lavatories ⁴			Bathtubs, Showers and Miscellaneous Fixtures	
Dwelling or Apt. House	Not Applicable	1 for each dwelling or dwelling unit			1 for each dwelling or dwelling unit			Washing machine connection per unit ⁵ . Bathtub or shower - one per dwelling or dwelling unit. Kitchen sink - one per dwelling or dwelling unit.	
Schools: Licensed Pre-School, Day Care or Nursery	Maximum Daily Attendance	Children (total)		Fixtures	To be provided in the same proportions as the number of water closets required			Kitchen: Children (total)	
		Age 0-4 years				Kitchen:			7-15
		1-20		1		1 in each food preparation and utensil washing area located to permit convenient use by all food and utensil handlers.			3 compartment sink (or approved domestic or commercial dishwashing machine and a 2 compartment sink) ¹⁸
		21-40		2					1 6-up 3 compartment sink (dishwashing machine, if provided, must be a commercial type) ¹⁸
		41-80		3					
		For each additional 40 children over 80, add		1		Caring for Infants:			
		Age 5 years and above				1 in or adjacent to each diaper changing area but never to be located in a food preparation/storage or utensil washing area.			One laundry tray, service sink, or curbed cleaning facility with floor drain on premises for cleaning of mops/mop water disposal.
			Male	Female					Caring for Infants:
		1-40	1	1					One extra laundry tray, service sink, or similar fixture is required to clean and sanitize toilet training potties immediately after each use. Such fixture shall be dedicated solely for this purpose and shall not be in the food preparation/storage, utensil washing, or dining areas.
		41-80	1	2					
		81-120	2	3					
		121-160	2	4					
		For each additional 40 females over 160, add		1					
		For each additional 80 males over 160, add		1					
Schools: Elementary & Secondary	Maximum Daily Attendance	Persons (total)	Male	Female	Persons (total)	Male	Female	One drinking fountain for each 3 classrooms, but not less than one each floor	
		1-50	2	2	1-120	1	1		
		51-100	3	3	121-240	2	2		
		101-150	4	4	For each additional 120 persons over 240, add	1	1		
		151-200	5	5					
		For each additional 50 persons over 200, add		1					
Office ⁶ and Public Buildings ²²	100 sq ft per person	Persons (total)	Male	Female	Persons (total)	Male	Female	Drinking Fountains Persons Fixtures	
		1-15	1	1	1-15	1	1	1-100	1
		16-35	1	2	16-35	1	2	101-250	2
		36-55	2	2	36-60	2	2	251-500	3
		56-100	2	3	61-125	2	3	No less than one fixture each floor subject to access.	
		101-150	3	4	For each additional 120 persons over 125, add	1	1.5 ⁷		
		For each additional 100 persons over 150, add		1					

(continued)

**Table 407
Minimum Plumbing Fixtures¹**

Building or Occupancy ⁷	Occupant Content ²	Water Closets ³			Lavatories ⁴			Bathtubs, Showers and Miscellaneous Fixtures	
		Persons (total)	Male	Female	Persons (total)	Male	Female	Persons	Drinking Fountains Fixtures
Common toilet facilities for areas of commercial buildings of multiple tenants ^{8, 9, 27}	Use the sq ft per person ratio								
	single type occupancy(s) occupying the greatest aggregate floor area	1-50	2	2	1-15	1	1	1-50	1
	(Consider separately each floor area of a divided floor)	50-100	3	3	16-35	1	2	101-250	2
		101-150	4	4	36-60	2	2	251-500	3
		For each additional 100 persons over 150, add	1	1.5 ⁷	61-125	2	3	501-1000	4
				For each additional 120 persons over 125, add	1	1.5 ⁷	Not less than one fixture each floor subject to access.		
Retail Stores ^{6, 20, 23}	200 sq ft per person	Persons (total)	Male	Female	Persons (total)	Male	Female	Drinking Fountains Fixtures	
		1-35	1	1	1-15	1	1	1-100	1
		36-55	1	2	16-35	1	2	101-250	2
		56-80	2	3	36-60	1	3	251-500	3
		81-100	2	4	61-125	2	4	501-1000	4
		101-150	2	5	For each additional 200 persons over 125, add	1	1.75 ⁷	Not less than one fixture each floor subject to access.	
		For each additional 200 persons over 150, add	1	1.75 ⁷	<u>Retail Food Markets that also processes or packages meat or other food items:</u>		All Retail Food Markets:		
					1 in each food processing, packaging, and utensil washing area located to permit convenient use by all food and utensil handlers.		One laundry tray, service sink, or curbed cleaning facility with floor drain on premises for cleaning of mops/mop water disposal.		
					<u>Retail Food Markets that also processes or packages meat or other food items</u>		<u>Retail Food Markets that also processes or packages meat or other food items</u>		
							3 compartment sink ¹⁸		
Restaurants/Food Service Establishments ^{6, 17, 23}	30 sq ft per person	Persons (total)	Male	Female	Persons (total)	Male	Female	Drinking Fountains ²⁴ Fixtures	
		1-50	1	1	1-150	1	1	1-100	1
		51-100	2	2	151-200	2	2	101-250	2
		101-200	3	3	201-400	3	3	251-500	3
		201-300	4	4	For each additional 200 persons over 400, add	1	1	<u>Kitchen:</u>	
		For each additional 200 persons over 300, add	1	2	<u>Kitchen:</u>		3 compartment sink (dishwashing machine, if provided, must be a commercial type) ¹⁸		
					1 in each food preparation and utensil washing area located to permit convenient use by all food and utensil handlers		<u>Other Fixtures:</u>		
							One laundry tray, service sink, or curbed cleaning facility with floor drain on premises for cleaning of mops/mop water disposal.		

(continued)

**Table 407
Minimum Plumbing Fixtures¹**

Building or Occupancy ²	Occupant Content ²	Water Closets ³			Lavatories ⁴			Bathtubs, Showers and Miscellaneous Fixtures	
		Persons (total)	Male	Female	Persons (total)	Male	Female	Persons	Drinking Fountains ³⁴ Fixtures
Clubs, Lounges, and Restaurants/ Food Service Establishments with Club, or Lounge ^{17,23}	30 sq ft per person	1-25	1	1	1-150	1	1	1-100	1
		26-50	2	2	151-200	2	2	101-250	2
		51-100	3	3	201-400	3	3	251-500	3
		101-300	4	4	For each additional 200 persons over 400, add	1	1	<u>Bar:</u> 3 compartment sink (dishwashing machine, if provided, must be a commercial type) ¹⁸	
		For each additional 200 persons over 300, add	1	2	<u>Bar:</u> 1 in each drink preparation and utensil washing area located to permit convenient use by all drink and utensil handlers.			<u>Other Fixtures:</u> One laundry tray, service sink, or curbed cleaning facility with floor drain on premises for cleaning of mops/mop water disposal.	
Do it yourself Laundries ⁴	50 sq ft per person	Persons (total)	Male	Female	Persons (total)	Male	Female	One drinking fountain and one service sink.	
		1-50	1	1	1-100	1	1		
Beauty Shops, Barber Shops, Nail Salons, and Tanning Facilities ⁶	50 sq ft per person	Persons (total)	Male	Female	Persons (total)	Male	Female	One drinking fountain and one service sink or other utility sink.	
		1-35	1	1	1-75	1	1		
Heavy manufacturing, ¹⁰ warehouses ¹¹ , foundries, and similar establishments ^{12,13}	Occupant content per shift, substantiated by owner. Also see 407.3.2	Persons (total)	Male	Female	Persons (total)	Male ¹⁴	Female ¹⁴	One drinking fountain for each 75 persons. One shower for each 15 persons exposed to excessive heat or to skin contamination with poisonous, infectious, or irritating material.	
		1-10	1	1	1-15	1			
		11-25	2	1	16-35	2			
		26-50	3	1	36-60	3			
		51-75	4	1	61-90	4			
		76-100	5	1	91-125	5			
For each additional 60 persons over 100, add	1	0.1 ⁷	For each additional 100 persons over 125, add	1	0.1 ⁷				
Light Mfg. ¹⁰ Light Warehousing ¹¹ and workshops, etc. ^{12,13}	Occupant content per shift, substantiated by owner. Also see 407.3.2	Persons (total)	Male	Female	Persons (total)	Male ¹⁴	Female ¹⁴	One drinking fountain for each 75 persons. One shower for each 15 persons exposed to excessive heat or to skin contamination with poisonous, infectious, or irritating material.	
		1-25	1	1	1-35	1	1		
		26-75	2	2	36-100	2	2		
		76-100	3	3	101-200	3	3		
		For each additional 60 persons over 100, add	1	1	For each additional 100 persons over 200, add	1	1		

(continued)

Table 407
Minimum Plumbing Fixtures¹

Building or Occupancy ²	Occupant Content ²	Water Closets ³			Lavatories ⁴			Bathubs, Showers and Miscellaneous Fixtures	
		Persons (total)	Male ¹⁶	Female ¹⁶	Persons (total)	Male	Female	Persons	Fixtures
Dormitories ¹⁵	50 sq ft per person (calculated on sleeping area only)	1-10	1	1	1-12	1	1	One drinking fountain for each 75 persons. Washing machine may be used in lieu of laundry trays. ¹⁵ One shower or bathtub for each 8 persons. Over 150 persons add 1 shower or bathtub for each 20 persons.	
		11-30	1	2	13-30	2	2		
		31-100	3	4	For each additional 30 persons over 30, add				
		For each additional 50 persons over 100, add	1	1		1	1		
Places of Public Assembly without seats and Waiting Rooms at Transportation Terminals and Stations	70 sq ft per person (calculated from assembly area.) Other areas considered separately. (See Office or Public Buildings.)	Persons (total)	Male	Female	Persons (total)	Male	Female	Drinking Fountains	
		1-50	2	2	1-200	1	1	Persons	Fixtures
		51-100	3	3	201-400	2	2	1-100	1
		101-200	4	4	401-750	3	3	101-350	2
		201-400	5	5	Over 750 persons, lavatories shall be required at a number equal to not less than 1/3 of total of required water closets and urinals.			Over 350 add one fixture for each 400.	
		For each additional 250 persons over 400, add	1	2					
Theaters, Auditoriums, Stadiums ²¹ , Arenas ²¹ , and Gymnasiums ²⁶	Use the number of seats as basis	Persons (total)	Male	Female	Persons (total)	Male	Female	Drinking Fountains	
		1-50	2	2	1-200	1	1	Persons	Fixtures
		51-100	3	3	201-400	2	2	1-100	1
		101-200	4	4	401-750	3	3	101-350	2
		201-400	5	5	Over 750 persons, lavatories shall be required at a number equal to not less than 1/3 of total of required water closets and urinals.			Over 350 add one fixture for each 400.	
For each additional 250 persons over 400, add	1	2							
Churches, Mosques, Synagogues, Temples, and other Places of Worship ²⁶	Use the number of seats as basis	Persons (total)	Male	Female	Persons (total)	Male	Female	Drinking Fountains	
		1-70	1	1	1-200	1	1	Persons	Fixtures
		71-150	2	2	201-400	2	2	1-100	1
		151-500	3	3	401-750	3	3	101-350	2
		For each additional 500 persons over 500, add	1	1	Over 750 persons, lavatories shall be required at a number equal to not less than 1/3 of total of required water closets and urinals.			Over 350 add one fixture for each 400.	
Retail Fuel Stations (Along an Interstate highway when the station property is located within 1/2 mile of the nearest toe ²⁵ of the exit/entrance ramp) ²³	Use the number of Fueling Points ¹⁹ as the basis	Fueling Points	Male	Female	Fueling Points	Male	Female	Drinking Fountains	
		1-8	1	1	1-12	1	1	Fueling Points	Fixtures
		9-12	2	2	13 or more	1	2	1-12	1 13
		13 or more	2	3				13 or more	2
Retail Fuel Stations not meeting above criteria ²³	Use the number of Fueling Points ¹⁹ as the initial basis	Fueling Points	Male	Female	Fueling Points	Male	Female	Drinking Fountains	
		1 or more	1	1	1 or more	1	1	Fueling Points	Fixtures
Other Miscellaneous Buildings or Occupancies ²⁸									

1 ft² = 0.0929 m²

Notes:

1. The figures shown are based upon one fixture being the minimum required for the number of persons indicated or any fraction thereof.
2. The occupant content and the number of required facilities for occupancies other than listed shall be determined by the plumbing official. Plumbing facilities in the occupancies or tenancies of similar use may be determined by the plumbing official from this table.
3. Urinals can be substituted for up to 1/2 of the required water closets.
4. Twenty-four linear inches (610 mm) of wash sink or 18 inches (457 mm) of a circular basin, when provided with water outlets for such space, shall be considered equivalent to 1 lavatory.
5. When central washing facilities are provided in lieu of washing machine connections in each living unit, central facilities shall be located for the building served at the ratio of not less than one washing machine for each 12 living units, but in no case less than two machines for each building of 15 living units or less. See 409.4.5.
6. With the exception of retail stores associated with retail fuel stations and/or restaurant/food service establishments associated with retail fuel stations and retail stores that require 2 or more different food permits (see note #20 below), a single facility consisting of one water closet and one lavatory may be used by both males and females in the following occupancies subject to the building area limitations:

Occupancy	Total Building Area (sq ft)
Office	1200
Retail Store (within covered mall)	3500
Laundries (Self-Service)	1400
Beauty Shops, Barber Shops, Tanning Facilities, and Nail Salons	900

Occupancy	Usable Building Area (sq ft)
Restaurant/Food Service Establishment (excluding retail fuel)	500
Retail Store (excluding retail fuel stations)	1500

7. After totaling fixtures, round up any fraction to the next highest whole number of fixtures.
8. Common toilet facilities (separate for males and females) for each floor are acceptable in lieu of separate facilities required by this section only when the applicable building occupant content has common access from within the building. When tenancies, rental units, etc., are to be provided with separate facilities of a partial nature, such facilities are not deductible from the total common facilities required.
9. (a) Applicable to small stand-up restaurants and similar occupancies.
(b) Not applicable to do-it-yourself laundries, beauty shops and similar occupancies where persons must remain to receive personal services.
10. (a) Light manufacturing is applicable to those manufacturers manufacturing finished products which require no special equipment to handle single finished products but may require special equipment to handle the products when packaged in containers containing multiple products, (b) Heavy manufacturing is applicable to those manufacturing processes requiring overhead cranes or similar equipment for the movement of raw materials and/or the finished products.
11. (a) Light Storage: Light storage is the storage of items which can be handled without the aid of special handling equipment such as cranes, forklifts or similar equipment, (b) Heavy Storage: Heavy storage is the storage of items which require special equipment for handling such as cranes, forklifts or similar equipment.
12. For other than industrial areas of the occupancy, see other applicable type occupancies (applicable to facilities provided due to inaccessibility of those in main or initial occupancy).
13. As required by the Minimum Requirements for Sanitation in Places of Employment (ANSI Z4.1).
14. Where there is exposure to skin contamination with poisonous, infectious, or irritating materials, provide 1 lavatory for each 15 persons.
15. Laundry trays, 1 for each 50 persons. Service sinks, 1 for each 100 persons.
16. For exclusively male or female dorms, the fixtures shall be double the amount required for the particular gender in a co-ed dorm.
17. If alcoholic beverages are to be served, facilities shall be as required for clubs or lounges.
18. At the discretion of the Plumbing Official, one properly sized grease trap for wastewater from the kitchen utensil washing sink(s), dishwashing machine(s), etc., is also required.
19. Fueling point means the number of fueling hoses which may be activated simultaneously while refueling automobiles or other motor vehicles.
20. Retail stores, regardless of the size of the building area, which require two or more different food permits (e.g., Grocery Permit, Restaurant Permit, etc.) shall be required to provide no less than a minimum of two facilities consisting of one water closet and one lavatory each.
21. a.) Trough urinals may only be used for stadiums, arenas, and jails, prisons, or other institutions of detention or incarceration. Trough urinals, when used, shall conform to the following requirements: They shall not be less than 6 inches deep and shall be furnished with one piece backs and have strainers with outlets at least 1/2 inches in diameter. The washdown pipe shall be perforated so as to flush with an even curtain of water against the back of the urinal. This pipe shall be securely clamped as high as practicable to the back of the urinal. Trough urinals, where so equipped, shall have tanks with a flushing capacity of not less than 1 1/2 gallons of water for each 2 feet of urinal length, b.) Trough urinals shall be figured on the basis of one (1) urinal for each 18 inches of length, provided that: 24-inch urinal equals 1 urinal; 36-inch urinal equals 2 urinals; 48-inch urinal equals 3 urinals; 60-inch urinal equals 4 urinals; and a 72-inch urinal equals 5 urinals, c.) Privacy screens shall not be required for trough urinals.
22. Applies to educational occupancies above the 12th grade.
23. If building is a multi-purpose facility (i.e., a retail fuel station and a retail store, or a retail fuel station and a retail store and a restaurant, or a retail store and retail fuel station, etc.), the occupancy which requires the largest number of fixtures shall apply.
24. Drinking fountain requirement may be waived if drinking water is dispensed in an approved, sanitary manner in accord with the requirements of Chapter XXIII of the Louisiana State Sanitary Code.
25. "Toe" is defined as the point where the Interstate highway's exit/entrance ramp meets the intersecting highway.
26. For pew or bench type seating, each 18 inches of pew or bench shall equate to one (1) person.
27. Central facilities shall be installed such that the path of travel to such facilities shall not exceed a distance of 500 feet and such facilities shall be located not more than one story above or below the space required to be provided with toilet facilities. The maximum travel distance to the central toilet facilities shall be measured from the main entrance of any store or tenant space.
28. Refer to the following chapters of the Louisiana State Sanitary Code for specific information relative to the number of plumbing fixtures required for these other miscellaneous buildings or occupancies:

Building or Occupancy	Louisiana State Sanitary Code
Wholesale Seafood Plants (Marine and Freshwater)	Chapter IX
Campsites	Chapter XVI
Jails, Prisons and Other Institutions of Detention or Incarceration ^{2, 1}	Chapter XVIII
Hospitals, Ambulatory Surgical Centers, Renal Dialysis Centers	Chapter XIX
Nursing Homes	Chapter XX
Temporary Food Service (Festivals or Fairs)	Chapter XXIII
Swimming Pools	Chapter XXIV
Mass Gathering Areas	Chapter XXV

407.3 Adjustments to Minimum Facilities

407.3.1 The plumbing official may make adjustments in the distribution of facilities between male and female when furnished satisfactory data to substantiate a claim that the numbers of male and female fixtures in Table 407 would not provide a satisfactory ratio of facilities based on the male-female ratio for the ultimate users. In any case, where deviation is permitted, in accordance with this section, the plumbing official may require additional facilities if the data submitted proves to be in error or if changes are made that affect such data, whether it be by the original or later owner or occupants of the building or tenancy.

407.3.2 The plumbing official may make adjustments in the occupant content established by Table 407 when, in a particular case, satisfactory data, accompanied by plans, is furnished which substantiates a claim that the occupant content of a particular building or tenancy will, at all times, be less than provided for in the above table. Approval of such data and accompanying claims shall not prevent the plumbing official from requiring additional facilities based on the above table, should changes be made affecting the data or plan upon which the original approval was based whether such changes be made by the original or ultimate owner or building occupant or occupants. The remainder of the facilities' requirements of 407 are not affected by this paragraph.

407.4 Facilities' Separation

The occupant content established by this code shall not be construed to have any force or effect upon the occupant content requirements of the Standard Building Code and is established only to calculate the number of plumbing facilities required for a building or for a tenancy within a building when such tenancy is separated from the remainder of the building by walls or partitions or when central facilities would not provide for the satisfactory needs of a tenant's patrons who must remain in a given area to receive the service rendered.

408 FIXTURE OUTLETS

408.1 Lavatory Waste Outlets

Lavatories shall have waste outlets not less than 1 1/4-inch diameter. Waste outlets may have open strainers or may be provided with stoppers.

408.2 Sink Waste Outlets

Sinks shall be provided with waste outlets not less than 1 1/2-inch diameter. Waste outlets may have open strainers or may be provided with stoppers.

408.3 Strainers and Fixture Outlets

All plumbing fixtures, other than water closets and syphon-action washdown or blowout urinals, shall be provided with strainers having waterway area complying with Table 405.

408.4 Overflows

408.4.1 Design. 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.

408.4.2 Connection. The overflow pipe from a fixture shall be connected on the house or inlet side of the fixture trap, except that overflows of 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.

409 FIXTURE TYPES

409.1.1 Commercial Dishwashing Machines

409.1.1.1 Protection. Commercial dishwashing machines shall meet requirements of 606.

409.1.1.2 Waste Connection. Each unit may be separately trapped or discharge indirectly into a properly trapped and vented fixture. A commercial dishwashing machine shall not be directly connected to a drainage system. When a commercial dishwashing machine is located within five feet of a trapped floor drain, the dishwasher waste outlet may be connected directly on the inlet side of a properly vented floor drain trap.

409.1.1.3 Sanitization. Commercial dishwashing machines shall be installed and operated in accord with the manufacturer's recommendations and with the mechanical cleaning and sanitizing requirements contained within Chapter XXIII (Eating and Drinking Establishments) of the Louisiana State Sanitary Code.

409.1.1.4 Flow Pressure. When spray-type dishwashing machines are used in commercial installations, the pressure measured in the final rinse water line shall be at least 15 psi (103 kPa) and not more than 25 psi (172 kPa) when the final rinse spray is operating. A suitable pressure gauge and gage cock shall be provided in a readily accessible location immediately upstream from the final rinse sprays to permit checking the flow pressure of the final rinse water. If necessary, a permanently installed pressure regulator shall be provided on the final rinse water line in order to maintain the proper water pressure in the line when the final rinse spray is operating.

409.1.2 Domestic Dishwashing Machines

409.1.2.1 Protection. Domestic dishwashing machines shall meet requirements of 606.

409.1.2.2 Waste Connection. Each unit may be separately trapped or discharge indirectly into a properly trapped and vented fixture. A domestic dishwashing machine shall not be directly connected to a drainage system. It may be connected through a wye

connection into the tail piece of a sink or into the body of a disposal unit with the flexible dishwasher hose looped up to within 2 inches of the bottom of the counter top.

409.2 Drinking Fountains

409.2.1 Design and Construction. Drinking fountains shall conform to ASME A 112.19.2M if of vitreous china, ANSI/ARI 1010 if of the mechanically refrigerated type, or ASME A 112.1.2 if of the bubbler type.

409.2.2 Protection of Water Supply. Stream projectors shall be so assembled as to provide an orifice elevation as specified by ASME A 112.1.2.

409.2.3 Prohibited Location. Drinking fountains shall not be installed in public toilet rooms.

409.3 Garbage Can Washers

Garbage can washers shall be separately trapped. The receptacle receiving the wash from garbage cans shall be provided with a removable basket or strainer to prevent discharge of large particles into the building drainage system. Any water supply connection shall be protected against backflow by an air gap or a backflow prevention device.

409.4 Floor Drains

409.4.1 Installation

409.4.1.1 Floor drains shall be installed in all public toilet rooms, etc., (see definition of Public or Public Use in Chapter 2) except for hotel and motel guest rooms and patient rooms of hospitals and nursing homes. When floor drains are installed in the above mentioned rooms, the floor drains shall be not less than 2 inches and the trap shall be equipped with an approved trap primer to maintain the water seal in the floor drain trap. When a trap primer is connected to a potable water supply pipe, an approved backflow preventer shall be separately installed on the trap primer's individual supply line.

409.4.1.2 Floor drains shall connect into a trap so constructed that it can be readily cleaned and of a size to serve efficiently the purpose for which it is intended. The drain inlet shall be so located that it is, at all times, in full view.

409.4.1.3 Floor drains subject to backflow shall not be directly connected to the drainage system or shall be provided with a backwater valve.

409.4.1.4 Floor drain trap seals subject to evaporation shall be of the deep-seal type of not less than a 4-inch (102 mm) water seal or shall be fed from an approved plumbing fixture or by means of an approved automatic priming device designed and approved for that purpose.

409.4.1.5 Floor drain traps and drains shall be not less than 2-inch diameter.

409.4.2 Strainers. Floor drains shall be provided with removable strainers, the open area of which shall be not less than two-thirds of the cross-sectional area of the trap to which it connects. ★

409.4.4 Prohibited Location

409.4.4.1 No floor drain or other plumbing fixture except electric water heaters shall be installed in a room containing air handling machinery when such room is used as a plenum. When rooms are used as a plenum, equipment drains shall be conveyed through an indirect waste receptor located outside such rooms or other approved point of disposal. When such equipment rooms are not used as a plenum, floor drains may be installed if an approved trap primer is installed. ★

409.4.4.2 Floor drains directly connected to the plumbing system shall not be located in elevator pits.

409.4.4.3 No floor drains shall be permitted in food storage areas unless installed in accordance with Section 804.1.

409.4.4.4 Floor drains are not permitted in walk-in coolers or freezers unless they are provided with indirect connections to the sanitary sewer located outside the walk-in cooler or freezer.

409.4.5 Required Location and Construction

In public coin operated laundries and in the central washing facilities of apartment buildings or in rooms containing connections for laundry machines except in one and two family dwellings, the rooms containing the laundry machines shall be provided with adequate floor drains located to readily drain the entire floor area. Such drains shall have a minimum outlet cross section of not less than 2-inch diameter, and, except when such floor drains are embedded in concrete floors, the floors shall be treated as required by 409.8.2 for floors under shower compartments. Required floor drains shall meet the design criteria for shower drains in 409.8.1.

409.5 Food Waste Grinder Units

409.5.1 Separate Connections. Domestic food waste disposal units may be connected and trapped separately from any other fixture or compartment. Units may have either automatic or hand-operated water-supply control. See 606.

409.5.2 Commercial Type Grinders. Food grinders used in commercial buildings shall have an automatic water-supply and shall be provided with not less than 2-inch (51mm) waste line. Each waste line shall be trapped and vented as provided in other sections of this code, (see 1004.11)

409.6 Laundry Trays

409.6.1 Waste Outlets. Each compartment of a laundry tray shall be provided with a waste outlet not less than 1 1/2 inches in diameter.

409.6.2 Overflow. Laundry tray overflows shall conform to the requirements of 408.4.

409.7 Multiple Washsinks

409.7.1 Circular Type. Each 18 inches (457 mm) of wash sink circumference (circular type) shall be equivalent to one lavatory.

409.7.2 Straight-Line Type. Multiple wash sinks of the straight-line type shall have hot and cold combination spouts not closer than 18 inches (457 mm) from adjacent similar spouts and each spout shall be considered the equivalent of one lavatory.

409.8 Shower Compartments

409.8.1 Shower. Shower compartments shall conform to Table 409.8 and shall have approved shower pan material or the equivalent thereof as determined by the plumbing official. The pan shall turn up on three sides at least 2 inches (51 mm) above finished curb level. The remaining side shall wrap over the curb. Shower drains shall be constructed with a clamping device so that the pan may be securely fastened to the shower drain thereby making a watertight joint. Shower drains shall have an approved weephole device system to insure constant drainage of water from the shower pan to the sanitary drainage system. There shall be a watertight joint between the shower drain and trap. Shower receptacle waste outlets shall be not less than 2 inches and shall have a removable strainer.

EXCEPTION: Shower compartments with prefabricated receptors conforming to the standards listed in Table 409.8 or special use shower compartments for accessible use which comply with the ANSI A117.1 accessibility standard.

**Table 409.8
Prefabricated Shower Receptor Standards**

MATERIALS	STANDARDS
Plastic Shower Receptors and Shower Stalls	ANSI Z1 24.2
Shower Pans Nonmetallic	ASTMD 4551, See 303.7

409.8.2 Construction. Floors under shower compartments shall be laid on a smooth and structurally sound base and shall be lined and made watertight with sheet lead, copper or other acceptable materials.

409.8.3 Public or Institutional Showers. Floor of public shower rooms shall be drained in such a manner that no waste water from any shower head will pass over floor areas occupied by other bathers.

409.9 Special Fixtures

409.9.1 Water Drain and Connections. Baptistries, ornamental and lily pools, aquaria, ornamental fountain basins and similar constructions when provided with water supplies shall be protected from back-siphonage as required in 606.1.

409.9.2 Approval. Specialties requiring water and waste connections shall be submitted for approval of the plumbing official.

409.9.3 Accessible Fixtures. Accessible fixtures shall comply with the requirements of ANSI A117.1.

409.10 Swimming Pools, Spas, and Hot Tubs

409.10.1 Water circulation system components for swimming pools, spas or hot tubs shall meet the requirements of ANSI/NSF 50. The circulation system components are diatomite type filters, sand type filters, cartridge type filters, recessed automatic surface skimmers, centrifugal pumps of 7.5 horsepower (5.6 kW) or smaller, adjustable output rate chemical feeding equipment, multiport valves and flow-through chemical feeding equipment. [For other plumbing requirements, also see Chapter XXIV (Swimming Pools) - Louisiana State Sanitary Code]

409.10.2 Suction Fittings. Suction fittings shall conform to ASME A 112.19.8M. Public, Residential Spas shall comply with the standards listed in Table 409.10.

**Table 409.10
Public and Residential Spas Standards**

MATERIALS	STANDARDS
Public Spas	ANSI/NSPI 2
Residential Spas, Permanently Installed	ANSI/NSPI 3
Residential Spas, Portable	ANSI/NSPI 6

409.11 Urinals

409.11.1 Automatic Flushing Tank. Tanks flushing more than one urinal shall be automatic in operation and of sufficient capacity to provide the necessary volume to flush and properly cleanse all urinals simultaneously.

409.11.2 Urinals Equipped with Automatic Flush Valves. Flushometers shall be as prescribed in 409.13.5 and no valve shall be used to flush more than one urinal.

409.12 Washing Machines for Residences

409.12.1 Protection. Domestic washing machines shall meet the requirements of 606.1.

409.12.2 Separate Trap. Each unit shall be separately trapped or discharge indirectly into a properly trapped and vented fixture, (see 1001.9)

409.12.3 Cross Fittings. Automatic washing machines shall not be connected to a 2-inch or smaller cross type fitting.

409.13 Water Closets

409.13.1 Public Use. Water closet bowls for public use shall be of the elongated type.

409.13.2 Flushing Device. Water closet gravity, tanks, flushometer tanks and flushometer valves shall have a flushing capacity sufficient to properly flush the water closet bowls to which they are connected.

409.13.3 Float Valves. Float valves in water closet tanks shall close tight and provide water to properly refill the trap seal in the bowl.

409.13.4 Close-Coupled Tanks. The flush valve seat in close-coupled water closet combinations shall be 1 inch (25.4 mm) or more above the rim of the bowl, so that the flush valve will close even if the closet trapway is clogged. Any closets with flush valve seats below the rim of the bowl shall be so constructed that in case of trap stoppage, water will not flow continuously over the rim of the bowl.

409.13.5 Automatic Flush Valve. Flushometers shall be so installed that they will be readily accessible for repairing. When the valve is operated, it shall complete the cycle of operation automatically, opening fully and closing positively under the service pressure. At each operation, the valve shall deliver water in sufficient volume and at a rate that will thoroughly flush the fixture and refill the fixture trap. Means shall be provided for regulating flush valve flow. Not more than one fixture shall be served by a single flush valve.

409.13.6 Seats. Water closets shall be equipped with seats of smooth nonabsorbent material. All seats of water closets provided for public use shall be of the open-front type. Integral water closet seats shall be of the same material as the fixture. The seat contour shall be the same contour as the water closet.

409.14 Whirlpool Bathtubs

409.14.1 Access. An access panel of sufficient size shall be installed to provide access to the pump for repair and replacement.

409.14.2 Pump. When not factory assembled to the tub assembly, the circulation pump shall be accessibly located above the crown weir of the trap. The pump drain line shall be properly graded to assure minimum water retention in the volute after fixture use.

409.14.3 Operation. Leak testing and pump operation shall be performed in accordance with manufacturer's recommendations.

409.14.4 Hydromassage Bathtubs. Hydromassage bathtubs shall comply with UL 1795.

409.14.5 Whirlpool Bathtub Appliances. Whirlpool bathtub appliances shall comply with ASME A 112.19.7M.

409.14.6 Suction Fittings. Suction fittings for use in whirlpool bathtubs shall comply with ASME A 112.19.8M.

410 APPENDIX REFERENCES

Additional provisions for plumbing fixtures are contained in Appendix G - Medical Facilities Plumbing Systems. These provisions are applicable only when they are referenced in the body of the code sections or when included in the adopting ordinance.