

CHAPTER 29

PLUMBING SYSTEMS

SECTION 2901 GENERAL

2901.1 Scope. The provisions of this chapter and the *International Plumbing Code* shall govern the erection, installation, alteration, repairs, relocation, replacement, addition to, use or maintenance of plumbing equipment and systems. Plumbing systems and equipment shall be constructed, installed and maintained in accordance with the *International Plumbing Code*. Private sewage disposal systems shall conform to the *International Private Sewage Disposal Code*.

[P] SECTION 2902 MINIMUM PLUMBING FACILITIES

2902.1 Minimum number of fixtures. In new construction or building additions and in changes of occupancy as defined in the North Carolina Building Code, plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 2902.1.1. Types of occupancies not shown in Table 2902.1 shall be considered individually by the building official. The number of occupants shall be determined by this Code. Occupancy classification shall be determined in accordance with Chapter 3.

2902.1.1 Unisex toilet and bath fixtures. Fixtures located within unisex toilet bathing rooms complying with Section 404 of the *International Plumbing Code* are permitted to be included in determining the minimum required number of fixtures for assembly and mercantile occupancies.

2902.2 Separate facilities. Where plumbing fixtures are required, separate facilities shall be provided for each sex.

Exceptions:

1. Separate facilities shall not be required for private facilities.
2. Separate employee facilities shall not be required in occupancies in which 25 or fewer people are employed.
3. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and customers, of 25 or less.
4. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 100 or less.

2902.3 Number of occupants of each sex. The required water closets, lavatories and showers or bathtubs shall be distributed equally between the sexes based on the percentage of each sex anticipated in the occupant load. The occupant load shall be composed of 50 percent of each sex, unless statistical data approved by the building official indicate a different distribution of the sexes.

2902.3.1 Adjustments in occupant content. If an owner or tenant requests, the plumbing official shall make adjust-

ments in the occupant content established by Table 2902.1 for manufacturing, workshops, loft building, foundries, storage, aircraft hangars, garages and similar establishments. The owner or occupant shall provide satisfactory written data, accompanied by plans, 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 floor 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 Section 2902.2 are not affected by this paragraph.

2902.4 Location of employee toilet facilities in occupancies other than assembly or mercantile. Access to toilet facilities in occupancies other than mercantile and assembly shall be from within the employees' working area. Employee facilities shall be either separate facilities or combined employee and public facilities.

Exception: Facilities that are required for employees in storage structures or kiosks, and are located in adjacent structures under the same ownership, lease or control, shall be a maximum travel distance of 500 feet (152 m) from the employees' working area.

2902.4.1 Travel distance. The required toilet facilities in occupancies other than assembly or mercantile shall be located not more than one story above or below the employees' working area and the path or travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum travel distances to required employee toilet facilities in factory and industrial occupancies are permitted to exceed that required in Section 2902.4.1, provided the location and maximum travel distance are approved by the building official.

2902.5 Location of employee toilet facilities in mercantile and assembly occupancies. Employees shall be provided with toilet facilities in building and tenant spaces utilized as restaurants, nightclubs, places of public assembly and mercantile occupancies. The employee facilities shall be either separate facilities or combined employee and public facilities. The required toilet facilities shall be located not more than one story above or below the employees' work area and the path of travel to such facilities, in other than covered malls, shall not exceed a distance of 500 feet (152 m). The path of travel to required facilities in covered malls shall not exceed a distance of 300 feet (91 m).

Exception: Employee toilet facilities shall not be required in tenant spaces where the travel distance from the main entrance of the tenant spaces to a central toilet area does not exceed 300 feet (91 m) and such central toilet facilities are located not more than one story above or below the tenant space.

TABLE 2902.1
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a
(See Sections 2902.2 and 2902.3)

No.	CLASSIFICATION	USE GROUP	DESCRIPTION	WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE FOR URINALS) ^j		LAVATORIES ^l		BATHS OR SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE) ^j	OTHER ⁹
				MALE	FEMALE	MALE	FEMALE			
1	Assembly (see Sections 2902.2, 2902.5 and 2902.6)	A-1	Theaters usually with fixed seats and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200	—	1 per 500	—	
				1 per 125 ⁱ	1 per 100	1 per 200	—	1 per 500	1 service sink	
		A-2	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75	—	1 per 500	—	
				1 per 75	1 per 75	1 per 200	—	1 per 500	1 service sink ^h	
		A-3	Cafeterias in K-12 schools ^l Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 100	1 per 200	—	1 per 500	—	
				1 per 125	1 per 65	1 per 200	—	1 per 500	—	
				1 per 125	1 per 100	1 per 200	—	1 per 500	1 service sink	
				1 per 500	1 per 500	1 per 750	—	1 per 1,000	1 service sink	
		A-3	Places of worship and other religious services. Churches without assembly halls ^h	1 per 150	1 per 75	1 per 200	—	1 per 1,000	—	
		A-4	Coliseums, arenas, skating rinks, pools and tennis courts for indoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder	1 per 40 for the first 1,500 and 1 per 60 for the remainder	1 per 200	1 per 150	1 per 1,000	—	
A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities ^k	1 per 75 for the first 1,500 and 1 per 120 for the remainder	1 per 40 for the first 1,500 and 1 per 60 for the remainder	1 per 200	1 per 150	1 per 1,000	—			
2	Business (see Sections 2902.2, 2902.4, 2902.4.1 and 2902.6)	B	K-12 stadiums, bleachers and grandstands for outdoor sporting events and activities ^k Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 125	1 per 100	1 per 250	1 per 200	1 per 1,000	—	
				1 per 25 for the first 50 occupants and 1 per 50 for the remainder exceeding 50	1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80	1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80	15-100 101-250 251-500 add 1 per 500 exceeding 500	1 2 3 add 1 per 500 exceeding 500		

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TABLE 2902.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES^a

No.	CLASSIFICATION	USE GROUP	DESCRIPTION	WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE FOR URINALS) ^b		LAVATORIES ^c		BATHUBS OR SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE) ^e	OTHER ^g
				MALE	FEMALE	MALE	FEMALE			
3	Educational	E	Educational facilities ^d K-8 9 thru 12 teacher/staff	1 per 50 1 per 25 1 per 30 1 per 30	1 per 50 1 per 60 1 per 100 1 per 100	—	—	1 per 100	—	
4	Factory and industrial	F-1 and F-2	Structures in which occupants are engaged in work fabricating, assembly or processing of products or materials (See Section 2902.3.1 for adjustments in occupant content)	1 per 100	1 per 100	(See Section 411)	—	1 per 400	—	
5	Institutional	I-1	Residential care	1 per 10	1 per 10	1 per 8	—	—	—	
		I-2	Hospitals, and other health care facilities ^{c,d}	Fixture requirements are regulated and enforced by state licensing and certification jurisdictions only.						
			Employees	1 per 25	1 per 35	—	—	1 per 100	—	
		Visitors	1 per 75	1 per 100	—	—	1 per 500	—		
		I-3	Prisons ^e	Fixture requirements are regulated and enforced by state licensing and certification jurisdictions only.						
			Reformatories, detention centers and correctional centers ^e	Fixture requirements are regulated and enforced by state licensing and certification jurisdictions only.						
6	Mercantile (see Section 2902.2, 2902.5 and 2902.6)	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 25	1 per 35	—	—	1 per 100	—	
				1 per 75	1 per 100	—	—	1 per 500	—	
				1 per 15	1 per 25	Note e	—	—	—	
				1 per 25	1 per 35	—	—	1 per 100	—	
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per 75	1 per 100	—	—	1 per 500	—	
			Dormitories, fraternities, sororities and boarding house (not transient)	1 per 500	1 per 750	—	—	1 per 1,000	—	
7	Residential	R-2	Apartment house	1 per guestroom	1 per guestroom	1 per guestroom	1 per guestroom	—	—	
			Apartment house	1 per 10	1 per 10	1 per 8	1 per 100	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units ^f	

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TABLE 2902.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FACILITIES^a

No.	CLASSIFICATION	USE GROUP	DESCRIPTION	WATER CLOSETS (SEE SECTION 419.2 OF THE INTERNATIONAL PLUMBING CODE FOR URINALS) ^f		LAVATORIES ^l		BATHUBS OR SHOWERS	DRINKING FOUNTAINS (SEE SECTION 410.1 OF THE INTERNATIONAL PLUMBING CODE) ^j	OTHER ^g
				MALE	FEMALE	MALE	FEMALE			
7	Residential	R-3	One- and two-family dwellings	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit
		R-4	Residential care/unlicensed assisted living facilities	1 per 10		1 per 10		1 per 8	—	—
8	Storage (see Sections 2902.2, 2902.4 and 2902.4.1)	S-1	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard ^{m,n}	1 per 100		1 per 100		See Section 411	—	—
		S-2								

- a. The fixtures shown are based on one fixture being the minimum required for the number of persons indicated or any fraction of the number of persons indicated. The number of occupants shall be determined by the *International Building Code*.
- b. The number of fixtures provided shall be based on either the capacity of the church sanctuary or the church educational building, whichever is larger.
- c. Toilet facilities for employees shall be separate from facilities for inmates or patients.
- d. A single-occupant toilet room with one water closet and one lavatory serving not more than two adjacent patient rooms shall be permitted where such room is provided with direct access from each patient room and with provisions for privacy.
- e. For day nurseries, a maximum of one bathtub shall be required.
- f. For attached one- and two-family dwellings, one automatic clothes washer connection shall be required per 20 dwelling units.
- g. A mop receptacle with a water supply, or a hose bib and floor drain, may be used in lieu of a service sink.
- h. A can wash may be used in lieu of a service sink.
- i. See Section 2902.9 for additional information on plumbing fixtures for schools.
- j. When the rearrangement of an area or space increases the occupant content, the plumbing facilities shall be increased in accordance with this code.
- k. For baseball stadiums, the number of fixtures shall be reduced by 50 percent.
- l. Service sink may be omitted when located within a single-family dwelling.
- m. Self-service mini-storage facilities without an office area are exempt.
- n. Unheated storage buildings which are used periodically are not required to have toilet rooms.

2902.6 Public facilities. Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. Public toilet facilities shall be located not more than one story above or below the space required to be provided with public toilet facilities and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

2902.6.1 Covered malls. In covered mall buildings, the path of travel to required toilet facilities shall not exceed a distance of 300 feet (91 m). Facilities shall be installed in each individual store or in a central toilet area located in accordance with this section. The maximum travel distance to the central toilet facilities in covered mall buildings shall be measured from the main entrance of any store or tenant space.

2902.6.2 Pay facilities. Where pay facilities are installed, such facilities shall be in excess of the required minimum facilities. Required facilities shall be free of charge.

2902.7 Signage. A legible sign designating the sex shall be provided in a readily visible location near the entrance to each toilet facility. Signs for accessible toilet facilities shall comply with ICC A117.1.

2902.8 Multiplex theaters. Plumbing fixtures for multiple adjoining motion picture theaters with a common lobby shall be based upon the seating capacity of the largest single auditorium plus 50 percent of the seats in the remaining auditoriums.

2902.9 Plumbing fixtures for public schools.

2902.9.1 Occupant content. Occupant content of public schools for the purpose of determining the number of required facilities shall be the maximum legal class size multiplied by the number of classrooms. A public school classroom is a room or space 500 square feet (46.5 m²) or larger normally used for instructional purposes. Maximum class sizes are 29 students for grades K-9 and 33 students for grades 10-12. (GS 115C-301). The occupant load for private schools shall be as listed in Table 1004.1.2 in the North Carolina Building Code.

2902.9.2 Occupant load and distance. The total student occupant load shall be the sum of the occupant loads for all classrooms, labs, shops and vocational spaces. The total occupant load for all buildings on a campus may be utilized when calculating the total number of fixtures required. Toilet facilities for students and teachers may be located in an adjacent building but shall be located so that no person will have more than 200 feet (60 960 mm) of accessible, covered horizontal travel distance from any classroom lab, shop or vocational space closest door for access to the required number of fixtures. The occupant content of kindergarten and first grade classrooms with internal toilet facilities is not required to be used in determining the number of group facilities for the entire school.

2902.9.3 Occupant load for teachers and staff. Fixtures provided for teachers and staff shall be determined by multiplying the number of classrooms by 1.75. Staffing ratio for grades K-8 is 80 percent female and 20 percent male.

2902.9.4 Gymnasiums, cafeterias, auditoriums and stadiums for schools. Fixtures in group toilet facilities provided for classroom areas may be used toward satisfying the

total number of required fixtures for gymnasiums, cafeterias and auditoriums provided that such facilities are located within 200 feet (60 960 mm) from the space and cannot be locked-off from access during after-school-hours use of the gymnasium, cafeteria or auditorium. Simultaneous use of classrooms, gymnasium, cafeteria or auditoriums shall not be considered for calculation of occupant loads for toilet fixtures. Stadium facilities shall be located within 400 feet (122 m) of the closest bleacher exit from each set of bleachers that the facility serves.

2902.9.5 Miscellaneous provisions.

2902.9.5.1 Unisex facilities. A single unisex facility may be used when the classroom area served is 1,200 square feet (111.5 m²) or less and is used either for kindergarten through grade 2 or is a modular classroom used for any grade level. Unisex facilities may be provided for teacher/staff if their total occupant load within 200 feet (60 960 mm) is 15 or less.

2902.9.5.2 Student group facilities. Every public school group facility shall have a minimum of four flushing type fixtures. Four flushing male group toilets shall have a minimum of two water closets.

2902.9.5.3 Substitutions. Water closets may be substituted for urinals for grades K through 2. Urinals may be substituted for water closets in male group toilet rooms for teachers/staff and gyms, auditoriums, cafeterias or stadiums. The number of water closets shall not be reduced to less than one-third of the required total number of flushing fixtures.

2902.9.5.4 Modular classroom buildings. Toilet rooms may be omitted in a modular classroom building when facilities of sufficient capacity for the additional occupants are provided in an adjacent building and located within 200 feet (60 960 mm) of horizontal travel distance from the modular classroom.

2902.9.5.5 Temporary modular classroom buildings. Toilet rooms may be omitted in modular classroom buildings housing grades 9 through 12 when these temporary buildings are to be replaced by permanent facilities which are under contract. Facilities of sufficient capacity for the additional occupants shall be provided within 450 feet (137 m) of horizontal travel distance from the modular classroom.

