

CHAPTER 29 PLUMBING SYSTEMS

SECTION 2901 GENERAL

[P] 2901.1 Scope. The provisions of this chapter and the *Phoenix 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 *Uniform Plumbing Code*.

SECTION 2902 MINIMUM PLUMBING FACILITIES

[P] 2902.1 Minimum number of fixtures. Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 2902.1 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.

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

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION ⁿ	WATER CLOSETS ^{l,m}		LAVATORIES ^l		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS ^{e,f,g,h}	OTHER	
				MALE	FEMALE	MALE	FEMALE				
1		Assembly (see Sections 2902.2, 2902.4 and 2902.4.1)	A-1 ^d	Theaters and other buildings for the performing arts and motion pictures	1 per 125	1 per 65	1 per 200		—	1 per 500	—
			A-2 ^d	Nightclubs, bars, taverns, dance halls and buildings for similar purposes	1 per 40	1 per 40	1 per 75		—	1 per 500	—
				Restaurants, ⁱ banquet halls and food courts	1 per 75	1 per 75	1 per 200		—	1 per 500	—
			A-3 ^d	Auditoriums without permanent seating, art galleries, exhibition halls, museums, lecture halls, libraries, arcades and gymnasiums	1 per 125	1 per 65	1 per 200		—	1 per 500	—
				Passenger terminals and transportation facilities	1 per 500	1 per 500	1 per 750		—	1 per 1,000	—
				Places of worship and other religious services	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 exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	—	1 per 1,000	—
			A-5	Stadiums, amusement parks, bleachers and grandstands for outdoor sporting events and activities	1 per 75 for the first 1,500 and 1 per 120 for the remainder exceeding 1,500	1 per 40 for the first 1,500 and 1 per 60 for the remainder exceeding 1,500	1 per 200	1 per 150	—	1 per 1,000	—

(continued)

PLUMBING SYSTEMS

**[P] TABLE 2902.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a**

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION ^a	WATER CLOSETS ^{j,m}		LAVATORIES ^l		BATHTUBS OR SHOWERS	DRINKING FOUNTAINS ^{e,f,g,h}	OTHER
				MALE	FEMALE	MALE	FEMALE			
2	Business (see Sections 2902.2, 2902.4 and 2902.4.1)	B	Buildings for the transaction of business, professional services, other services involving merchandise, office buildings, banks, light industrial and similar uses	1 per 25 for the first 50 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 100	—
3	Educational	E	Educational facilities ^k	1 per 50		1 per 50		—	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	1 per 100		1 per 100		—	1 per 400	—
5	Institutional	I-1	Residential care	1 per 10		1 per 10		1 per 8	1 per 100	—
		I-2	Hospitals, ambulatory nursing home patients ^b	1 per per room ^c		1 per per room ^c		1 per 15	1 per 100	—
			Employees, other than residential care ^b	1 per 25		1 per 35		—	1 per 100	—
			Visitors, other than residential care	1 per 75		1 per 100		—	1 per 500	—
		I-3	Prisons ^b	1 per cell		1 per cell		1 per 15	1 per 100	—
		I-3	Reformatories, detention centers and correctional centers ^b	1 per 15		1 per 15		1 per 15	1 per 100	—
		I-4	Adult day care and child care	1 per 15		1 per 15		—	1 per 100	—
6	Mercantile (see Section 2902.2, 2902.4, 2902.4.1 and 2902.4.2)	M	Retail stores, service stations, shops, salesrooms, markets and shopping centers	1 per 500		1 per 750		—	1 per 1,000	—
7	Residential	R-1	Hotels, motels, boarding houses (transient)	1 per sleeping unit		1 per sleeping unit		1 per sleeping unit	—	—
		R-2	Dormitories, fraternities, sororities and boarding house (not transient)	1 per 10		1 per 10		1 per 8	1 per 100	—
		R-2	Apartment house	1 per dwelling unit		1 per dwelling unit		1 per dwelling unit	—	1 kitchen sink per dwelling unit; 1 automatic clothes washer connection per 20 dwelling units

(continued)

[P] TABLE 2902.1—continued
MINIMUM NUMBER OF REQUIRED PLUMBING FIXTURES^a

No.	CLASSIFICATION	OCCUPANCY	DESCRIPTION ⁿ	WATER CLOSETS ^{l,m}		LAVATORIES ^l		BATHTUBS/ SHOWERS	DRINKING FOUNTAINS ^{g,i,g,h}	OTHER
				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; 1 automatic clothes washer connection per 20 dwelling units
		R-4	Residential care/assisted living facilities	1 per 10		1 per 10		1 per 8	1 per 100	—
8	Storage (see Sections 2902.2, 2902.4 and 2902.4.1)	S-1 S-2	Structures for the storage of goods, warehouses, storehouses and freight depots, low and moderate hazard	1 per 100		1 per 100		—	1 per 1,000	—

- 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 this code.
- b. Toilet facilities for employees shall be separate from facilities for inmates or patients.
- c. 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.
- d. The occupant load for seasonal outdoor seating and entertainment areas shall be included when determining the minimum number of facilities required.
- e. A drinking fountain shall not be required in occupancies of 50 or less.
- f. Each floor level of a multistory building shall have a drinking fountain available within one floor level, either above or below the level that has no fountain.
- g. Where food is consumed indoors, water stations may be substituted for drinking fountains.
- h. Drinking fountains shall not be installed in toilet rooms.
- i. 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. Separate hand-washing facilities shall be available in the kitchen for employees.
- j. When urinals are installed they may be substituted for water closets, provided the number of water closets is not reduced to less than two-thirds of the minimum required by Table 2902.1.
- k. Schools shall be provided with toilet facilities and drinking fountains on each floor that has classrooms.
- l. Twenty-four (24) lineal inches rectangular wash sink, or eighteen (18) inches of a circular basin, when provided with water outlets for such space, shall be considered equivalent to one lavatory.
- m. 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.
- n. Building categories not shown on this table shall be considered separately by the building official.

[P] 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.

[P] 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 dwelling units and sleeping units.
- 2. Separate facilities shall not be required in structures or tenant spaces with a total occupant load, including both employees and visitors, of 15 or less.

3. Separate facilities shall not be required in mercantile occupancies in which the maximum occupant load is 50 or less.

[P] 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.

[P] 2902.4 **Required public toilet facilities.** Customers, patrons and visitors shall be provided with public toilet facilities in structures and tenant spaces intended for public utilization. The accessible route to public facilities shall not pass through kitchens, storage rooms, closets or similar spaces. Employees shall be provided with toilet facilities in all occupancies. Employee toilet facilities shall be either separate or combined employee and public toilet facilities.

[P] 2902.4.1 Location of toilet facilities in occupancies other than covered malls. In occupancies other than covered malls, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities and the path of travel to such facilities shall not exceed a distance of 500 feet (152 m).

Exception: The location and maximum travel distances to required employee facilities in factory and industrial occupancies are permitted to exceed that required by this section, provided that the location and maximum travel distance are approved.

[P] 2902.4.2 Location of toilet facilities in covered malls. In covered mall buildings, the required public and employee toilet facilities shall be located not more than one story above or below the space required to be provided with toilet facilities, and the path of travel to such facilities shall not exceed a distance of 300 feet (91 440 mm). In covered mall buildings, the required facilities shall be based on total square footage, and 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. In covered mall buildings, where employees' toilet facilities are not provided in the individual store, the maximum travel distance shall be measured from the employees' work area of the store or tenant space.

[P] 2902.4.3 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.

[P] 2902.5 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.

SECTION 2903 SPECIAL INSPECTIONS

2903.1 General. In addition to the inspections required by Section 109 of the *Phoenix Building Construction Code—Administrative Provisions*, the owner, engineer or architect of record acting as the owner's agent shall employ one or more special inspectors who shall provide inspections during construction on the types of work listed under Section 2903.5.

Exception: Special inspections are not required for work of a minor nature or as warranted by conditions in the jurisdiction as approved by the building official.

2903.2 Special inspector. The special inspector shall be a qualified person who shall demonstrate competence, to the satisfaction of the building official, for inspection of the particular type of construction or operation requiring special inspection.

Special inspectors shall be independent, third-party individuals, firms or testing agencies and shall not be the installing

contractor or any other person responsible for performing the work.

2903.3 Duties and responsibilities of the special inspector. The special inspector shall observe the work assigned for conformance with the approved design drawings and specifications.

The special inspector shall furnish inspection reports to the building official, the engineer or architect of record or other designated persons. All discrepancies shall be brought to the immediate attention of the contractor for correction, then, if uncorrected, to the proper design authority and to the building official.

The special inspector shall submit a final signed report stating whether the work requiring special inspection was, to the best of the inspector's knowledge, in conformance with the approved plans and specifications and the applicable workmanship provisions of this code.

2903.4 Standard of quality. Testing and inspection procedures for plumbing special inspection shall be in accordance with regulations established by the building official.

2903.5 Types of work. Except as provided in Section 2903.1, the types of equipment or installations noted below shall be tested or inspected by a special inspector.

1. Medical gas and vacuum systems as required by Section 320.0 of the *Uniform Plumbing Code*.
2. Special cases—work that, in the opinion of the building official, involves unusual hazards or conditions.

SECTION 2904 PLUMBING OBSERVATION

2904.1 General. In addition to the inspections required by Section 109 of the *Phoenix Building Construction Code—Administrative Provisions* and the special inspections required by Section 2903, plumbing observation shall be provided when one of the following conditions exist:

1. When such observation is specifically required by the building official.
2. The owner shall employ the engineer responsible for the plumbing design, or another engineer designated by the engineer responsible for the plumbing design, to perform visual observation of complex plumbing equipment and systems for general conformance to the approved plans and specifications, including, but not limited to, placement and interconnection of equipment. Plumbing observation shall be performed at significant stages of the construction and when the installation is complete and ready to be inspected.

2904.2 Procedures. The engineer responsible for plumbing observation shall personally visit the site prior to completion of the Certificate of Compliance and periodically during the course of construction requiring plumbing observation as set forth in the inspection and observation program for each project.

The engineer responsible for performing plumbing observation shall complete a signed written report after each site visit.

A copy of each report shall be kept on the job site for review by an inspector at all times until the inspector has issued final approval. Any and all deviations from the approved plans or specifications shall be immediately reported to the contractor for correction and then, if uncorrected, shall be reported to the engineer or architect of record and to the building official.

In addition to individual reports, the engineer or architect of record shall file with the building official a written monthly progress report indicating the dates of each site visit, the special inspections or observations performed, any deviations noted from approved plans and specifications and any resulting instructions or change orders issued to the contractor.

2904.3 Certificate of Compliance. Upon completion of the portions of the work requiring plumbing observation, a Certificate of Compliance shall be issued to the building official under the seal and signature of the engineer responsible for such observation. A Certificate of Occupancy will not be issued until the building official receives all required special inspection reports and the Certificates of Compliance.

The Certificate of Compliance for plumbing observation shall read as follows:

“I certify to the best of my knowledge the plumbing requirements of the *Phoenix Building Construction Code* and approved plans and specifications have been complied with insofar as the portion of the work requiring plumbing observation is concerned, except for those deviations that have been previously reported. A guarantee that the contractor has constructed the building in full accord with the plans and specifications is neither intended nor implied.”

