

*2000 Standard Plumbing Code
Online Classes*

**Chapter 4
Fixtures, Faucets and
Fixture Fittings**

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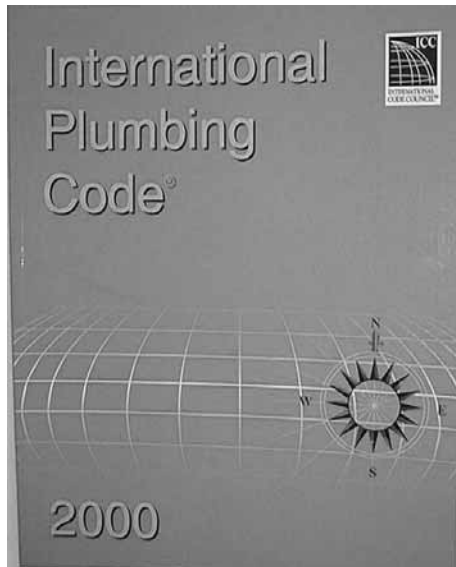
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CHAPTER 4

- FIXTURES
- FAUCETS
- FIXTURE FITTINGS

- *The following slides are designed to show the most important sections of Chapter Four of the 2000 Standard Plumbing Code (International Plumbing Code) It does not cover all requirements set forth by this chapter of the code!*

2000 STANDARD PLUMBING CODE



CHAPTERS

- 4 - Fixtures, Faucets, & Fixture Fittings

CHAPTER 4

Fixtures, faucets and Fixture Fittings

- Chapter 4 covers the requirements for plumbing fixtures and the materials used to connect them to the plumbing system.
- All fixtures and fittings must be manufactured to recognized standards and installed by methods which comply to those listed in this chapter.
- *Always remember that Sections of this chapter have been amended by the State of Georgia.*

CHAPTER 4

- 401.2 Prohibited fixtures and connections.
- *Some type fixtures are prohibited by the code.*
- Water closets having a concealed trap seal or an unventilated space or having walls that are not thoroughly washed at each discharge in accordance with ASME A112.19.2 shall be prohibited. Any water closet that permits siphon age of the contents of the bowl back into the tank shall be prohibited. Trough urinals shall be prohibited.
- **Some fixture because of their make up are prohibited by the code. Such as the trough urinals are prohibited by the code because they waste water and don't comply with water conversation guidelines.**

CHAPTER 4

- 401.3 Water conservation. The maximum water flow rates and flush volume for plumbing fixtures and fixture fittings shall comply with Section 604.4.
- *The following flow rates are established by the federal government as part of the 1988 Water Conversation Act. It is illegal to install fixtures that do not comply with the following table.*

CHAPTER 6 TABLE 604.4

- Water closet 1.6 gallons per flushing cycle
 - Urinal 1.0 gallon per flushing cycle
 - Shower head 2.5 gpm at 60 psi
 - Lavatory, private 2.2 gpm at 60 psi
 - Lavatory public 0.5 gpm at 60 psi
 - Lavatory, public 0.25 gallon per metering cycle
 - Sink faucet 2.2 gpm at 60 psi
-
- *All new fixtures manufactured today must meet these flow standards.*

403 Minimum Plumbing Facilities

- Plumbing fixtures shall be provided for the type of occupancy and in the minimum number shown in Table 403.1. Types of occupancies not shown in Table 403.1 shall be considered individually by the code official. The number of occupants shall be determined by the **Standard Building Code**. Occupancy classification shall be determined in accordance with the **Standard Building Code**.
- *To calculate the number of fixtures required for a building you must first know the occupancy (Use) and the square footage of the building. The Standard Building Code gives the amount of area (square feet) required for each occupant according to the use or occupancy of the building. For instance, the amount of space required for a person to sit in the stands at a stadium is less than required for a person working in an office with a desk and equipment. The occupant load of the stadium is far greater and so more fixtures are required. The tables in this chapter of the plumbing code list the number of fixtures required by occupancy per number of people. Once you have determined the number of people the building will hold by using the Standard Building Code, you can determine how many fixtures are required.*



**Determine the Minimum Number of
Facilities for Sanford Stadium**

**Estimated Total Capacity 100,000
(Modified to make the math easier)**

Determine the Minimum Number of Facilities for Sanford Stadium

Looking at Table 403.1 under Assembly Occupancy you find Stadiums (3000 seats or greater)

Male water closets 1 per 150

50% of 100,000 = 50,000

50,000 / 150 = 334 w/c

The code allows urinals to be substituted for 67% of the required water closets to be in each toilet room.

The Section 403.3 of the code requires that unless you can justify otherwise, the number of occupants shall be divided in half with 50% being male and 50% female. Dividing the total number of occupants for each sex by the number allowed for each fixture you can determine fixtures required.

Determine the Minimum Number of Facilities for Sanford Stadium

Female water closets

1 per 75

50% of 100,000 = 50,000

50,000 / 75 = 667 w/c

You see that the number of women's fixture is greater than men's (twice as many). The reason is that women require more time to use the restrooms than men because of clothing etc. Although the code does allow urinal substitution in the women's fixture count the cost of a women's urinal makes it cost prohibitive in most cases.

Determine the Minimum Number of Facilities for Sanford Stadium

Male Lavatories 1 per 200

50% of 100,000 = 50,000

50,000 / 200 = 250 Lavatories

Determine the Minimum Number of Facilities for Sanford Stadium

Female Lavatories 1 per 150
50% of 100,000 = 50,000
50,000 / 150 = 334 Lavatories.

Again you see that a greater number of female fixtures are required

Determine the Minimum Number of Facilities for Sanford Stadium

Drinking Fountains 1 per 1000
 $100,000 / 1000 = 100 \text{ DF}$

Even though Section 410.1 states that drinking fountains are not required if water is served or bottled water coolers are provided, The State of Georgia amended the code by deleting this section. Currently drinking fountains are still required in all non-residential occupancies except restaurants where water is served.

Plumbing Fixtures Required by the Code

SERVICE SINKS (No longer Required)

The requirement for Service Sinks has been deleted by the State of Georgia. The reason for this amendment is that service sinks are seldom used and the traps go dry allowing sewer gas to seep into the building. It is now totally up to the design professional and owner to decide if service sinks are to be installed in new buildings.

Plumbing Fixtures Required by the Code

403.1.1 Unisex Toilet Bath Facilities

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

Where unisex bathrooms are installed in assembly and mercantile occupancies, they are allowed to be counted as part of the fixtures required for both male and female. The local plumbing inspector has the ability to make this adjustment on all occupancies, but it is their choice to allow this adjustment.

403.2 Separate Bathroom Facilities

- Where plumbing fixtures are required, separate facilities shall be provided for each sex.
- Except under the following conditions
- *Separate bathroom facilities is required for each sex unless the following conditions exist. Under these situations a unisex bathroom is allowed.*

Separate Facilities Required

EXCEPTIONS

1. Separate facilities shall not be required for private facilities.
2. Separate employee facilities shall not be required in occupancies in which 15 or less 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 15 or less.

403.4 Location of employee toilet facilities other than Assembly or Mercantile

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

The code limits the distance a person must travel to use the restroom facilities. The following code section lay out distance limitations. You are allowed to have your bathrooms serve for both employees and the public as long as your fixture count is adequate. There is the following exception.

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 from the employees' regular working area.

This would be common in buildings such as airports where kiosks are found.

Next Page