

CHANGE TYPE: Modification

CHANGE SUMMARY: The minimum fixture quantities for multiple-user toilet facilities designed to serve all genders must be calculated 100 percent based on total occupant load.

2021 CODE: 403.1.1 Fixture calculations. To determine the occupant load of each sex, the total occupant load shall be divided in half. To determine the required number of fixtures, the fixture ratio or ratios for each fixture type shall be applied to the occupant load of each sex in accordance with Table 403.1. Fractional numbers resulting from applying the fixture ratios of Table 403.1 shall be rounded up to the next whole number. For calculations involving multiple occupancies, such fractional numbers for each occupancy shall first be summed and then rounded up to the next whole number.

Exceptions:

1. The total occupant load shall not be required to be divided in half where approved statistical data indicate a distribution of the sexes of other than 50 percent of each sex.
2. Where multiple-user facilities are designed to serve all genders, the minimum fixture count shall be calculated 100 percent, based on total occupant load. In such multiple-user facilities, each fixture type shall be in accordance with ICC A117.1 and each urinal that is provided shall be located in a stall.
3. Distribution of the sexes is not required where single-user water closets and bathing room fixtures are provided in accordance with Section 403.1.2.

403.1.1

Fixture Quantity Calculations for Multiple User Facilities

Plumbing Fixture Calculations

Multiple-User Facility for Serving All Genders

Given: Business Use having an Occupant Load of 60. Toilet facility design chosen to be one multiple-user facility to serve all genders.

Per Table 403.1:

Water Closet Ratio: 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50

Lavatory Ratio: 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80

Calculations:

WCs: $50/25 + (60 - 50)/50 = 2.2$ Round up to 3.

LAVs: $60/40 = 1.5$ Round up to 2.

Single-User Facilities

Given: Business Use having an Occupant Load of 60. Toilet facility design chosen to be all single-user facilities.

Per Table 403.1:

Water Closet Ratio: 1 per 25 for the first 50 and 1 per 50 for the remainder exceeding 50

Lavatory Ratio: 1 per 40 for the first 80 and 1 per 80 for the remainder exceeding 80

Calculations:

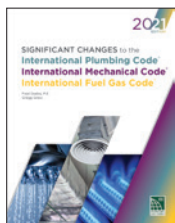
WCs: $50/25 + (60 - 50)/50 = 2.2$ Round up to 3.

LAVs: $60/40 = 1.5$ Round up to 2. However, because each single-user facility requires a LAV, the required number of LAVs = 3.

CHANGE SIGNIFICANCE: The new Exception 2 introduces the concept of multiple-user toilet facilities designed to serve all genders. In the context of this exception, gender does not mean sex. Such multiple-user facilities are available for any person to use, regardless of their gender identity. Along with Exception 6 of Section 403.2, additional requirements for this type of facility are few. Many arrangements are possible and other than urinal locations, additional privacy features, beyond what is already required in any multiple-user toilet room intended for use by the same sex, are not required. The design need only serve all genders.

The requirement, “the minimum fixture count shall be calculated 100 percent, based on the total occupant load,” attempts to override the requirement of the base section for dividing the total occupant load of the building in half (assuming a 50-50 male/female distribution) when applying the fixture ratios of Table 403.1. Calculations are straight forward where the male and female fixture ratios in the table are identical. Where different table ratios are indicated, calculations will require adjustments to accommodate the difference.

Where a building is designed to have single-user toilet facilities (the subject of Section 403.1.2), and the male and female fixture ratios in the table are identical, Exception 2 (proposal P15) allows the calculations to be straight forward (i.e., distribution of sexes is not required). However, where different table ratios are indicated, calculations will require adjustments to accommodate the difference.



This excerpt is taken from *Significant Changes to the International Plumbing/Mechanical/Fuel Gas Codes, 2021 Edition*.

The Significant Changes series takes you directly to the most important changes that impact projects. Key changes are identified then followed by in-depth discussion of how the change affects real-world application. Photos, tables and illustrations are included to further clarify application. Available for the IBC, IRC, IFC, IECC and IPC/IMC/IFGC, the Significant Changes publications are very useful training and review tools for transitioning to a new code edition.