

# How To Properly Calculate Toilet Facilities

## Part 1, Day Care Centers

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This is the first of a series of articles explaining how to calculate the proper number of toilet rooms and plumbing fixtures for various building uses. We will start with one of, if not the most difficult and confusing uses to calculate toilet facilities, Day Care Centers.

We will be working with 248 C.M.R. section 10.10,18,e, page 153, and table #1 on page 157. Also 521 C.M.R. section 30.14 (Children's Water Closets) on page 127 and 128. Please have these codes ready for reference.

First we will figure the toilet rooms for employees or staff. Separate toilet rooms are required for employees for this use, see table #1. You must know how many employees work there, and the size (sq. ft.) of the day care. If the total sq. ft. of the day care is less than 1200 sq. ft. you are allowed to install one unisex handicapped toilet room for the employees or staff. This is covered under 10.10,18,i (Employee Toilet Facilities For Non-Industrial Establishments). If you read i4 carefully you will see there is no mention of a unisex toilet room, what it does say is one toilet room located within the establishment provided with the number of fixtures according to table #1. This has caused much confusion, but the true intent of the code is; if the facility is less than 1200 sq. ft. one unisex toilet room is allowed. If the facility is 1200 sq. ft. or more, separate men's and women's toilet rooms must be provided for the staff. See i,1. At that point the number of employees must be counted, and plumbing fixtures calculated by table #1. Always use a 50% ratio. If there are 30 employees, 15 men and 15 women. According to table #1, one men's room and one women's room containing one toilet and lav. each, shall be required. These two toilet rooms will cover up to a maximum of 40 employees.

Toilet rooms for the children. It is critical to know how many children the Day Care is licensed for, and most important the ages of the children. Section 10,10 18,e allows unisex toilet rooms for children six (6) years of age or younger. However unlike employees the size of the facility does not matter. There is no 1200 sq. ft. exception. The code will read, *table 1 shall apply where more fixtures are required*. The question is more than what? Therefore we must rely on table one. Example, if the day care has 16 children using the 50 % ratio that would be 8 girls and 8 boys, table one will dictate you will need one water closet for the girls, and one water closet for the boy's. If the children are 6 years old or under both of those toilet rooms may be unisex. In no way could you put the two water closets in one room. This would violate our definition of unisex, which is a room containing only one water closet and one lav, therefore the code would defeat itself.

If you get into higher numbers of students that would require more fixtures, the unisex option goes away altogether. Example, the Day Care is licensed for 50 students, 50 % ratio 25 Girls, 25 Boys. Table 1 will show one water closet for 20 girls, and one water closet for 20 boys. This would calculate to two water closets for the girls, and two water closets for the boys. Again if each toilet room contains more than one water closet they must be designated boys and girls. The unisex option can only be used for so called single user toilet rooms, and only if the children are 6 or under.

Fixtures for the disabled children. Back in 1996 the Architectural Access Board (A.A.B.) added a section for children's toilet facilities in 521 C.M.R. See section 30.14, on page 127. This section will detail many important dimensions all plumbers and inspectors must be aware of. For water closets it breaks down the dimensions into three age categories, 1. Pre- Kindergarten, 2. Kindergarten to third grade, 3. Fourth grade to sixth grade. Other important dimensions are height of the flush controls, sinks, and urinals.

For a Day Care Center we must again know the age of the children. Assuming they are 6 years old and under this would most likely fall in the category of Pre-Kindergarten. Therefore one of the toilet rooms, or one of each fixture in a toilet room with multiple fixtures must meet the dimensional requirements set forth in 521 C.M.R. The toilet listed under Pre-Kindergarten is 11.5" to 12.5" high. This would be one of those tiny toilets. Also the toilet must be located 11" from the near wall to the centerline of the toilet. This is closer to the near wall than an average H.P. toilet.

Most Day Care Centers are for children prior to going to regular school. Therefore the ages are most likely to be six (6) years old or under. However there may be cases where there are multiple aged children, like a special needs school. This is when calculating toilet rooms can be very difficult. In fact it may be impossible to actually meet all the requirements of the code. For example, a large day care takes students between the ages of two and ten. This would require Women's and Men's staff toilet rooms, and boys and girls rooms with multiple fixtures, in order to meet all three categories of fixture sizes in 521 C.M.R. In cases like this the best policy is to review the plans very carefully with the architect, builder, and owner. Try to meet the intent of both codes, and always offer the option for a variance.

Other fixtures. According to table #1, lavatories shall be installed at the same rate as water closets, 1 per 20, and one service sink in the facility shall be provided. Drinking fountains have been removed from table #1 due to an alleged calculated error.

All Plumbing Inspectors and Plumbers must have a copy of 521 C.M.R. This code contains very important information detrimental to the proper installation of toilet facilities for disabled people. If you do not have a copy, please call the State House Book store and order one they are only about \$15.00. I will personally thank you.

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