Exits and Multi-tenant Buildings

This article is intended to update an earlier TiCon newsletter with the exit/egress requirements of the 2013 California Building Code (CBC) and to provide the reader with an overview of the current code as it relates to exiting of commercial/industrial buildings with an emphasis on multi-tenant buildings.

The reader will get some facility in:

- **Determining the Occupant Load of a space**
- **Determining any requirement for a second exit**
- **Determining the location of the second exit if one is required**

Exit - a practical definition

Exit** (access) - The portion of the egress system (usually a corridor) separated from other interior spaces in the building and protected as required by the code to provide a path of travel to the exit (discharge), usually the building exit onto a public way.The following information is taken from the CBC 2013 and is used by every building department in the state to determine a) the occupant load of any space b) the requirement for a second exit for any such space and c) parameters for the location of any second exit if so required.**

The Occupant Load is calculated using table 1004.1.1, abbreviated below. There are two columns: Column 1- Function of the Space Or Occupancy Type, Column 2- the occupancy divisor (in square feet) by which the gross area of the space is divided to obtain the Occupancy Load and the author has added a third column: 'Occupant Load, for convenience. For the sake of brevity only the most common uses are displayed here.

To determine the Occupant Load

Locate the function in the first column, divide the gross area of the space by the divisor in column 2 -- the quotient will be the Occupancy Load.

Function of the space		Occupancy Divisor	Occupant load
Business - offices, clinics, print shops etc.		100	tbd
Factory - Industrial and most manufacturing uses		100	tbd
Mercantile- Most retail uses		30 **	tbd
Warehouse- storage not classified as hazardous		500	tbd

**** One must substitute 60 as the divisor on floors other than the first floor and the basement, in 'M' occupancies. Example: A professional office of 6,100 square feet will have an occupant load of 61. A mercantile or retail outlet of the same size will have an occupant load of 203, fewer if on the second floor or above.**

To determine any requirement for a second exit

Using CBC Table 1015.1 below, compare your Occupancy Load (calculated above) to the figure shown in the third column below. If the load exceeds the number in this column a second exit is required ***

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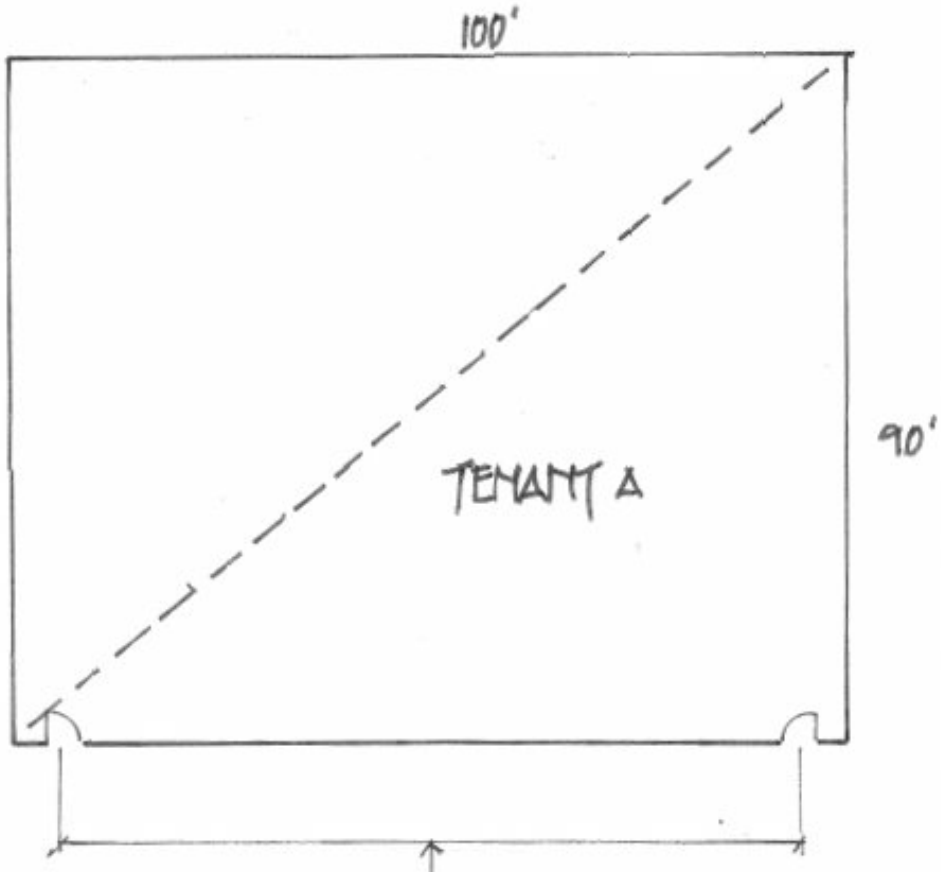
Type	Function or Use	Exceeds
B	Business - offices, clinics, print shops, labs etc.	49 ***
F	Factory - Industrial and most manufacturing uses	49 ***
M	Mercantile- Most retail uses	49 ***
S	Warehouse- storage not classified as hazardous	29

***** If the space being occupied is on other than the first floor or basement of a building, or if the travel distance from the most remote point in the space to an exit exceeds 75 feet, then the number in column 3 is reduced to 29.**

To determine the location of a Required second exit

A second exit required under this paragraph 1015.2.1 must be a distance away from the primary exit equal to one half or more of the longest distance in the space measured diagonally unless the building is fire sprinklered in which case the distance is reduced to one third of the diagonal. Step 1 - measure the longest diagonal of the space

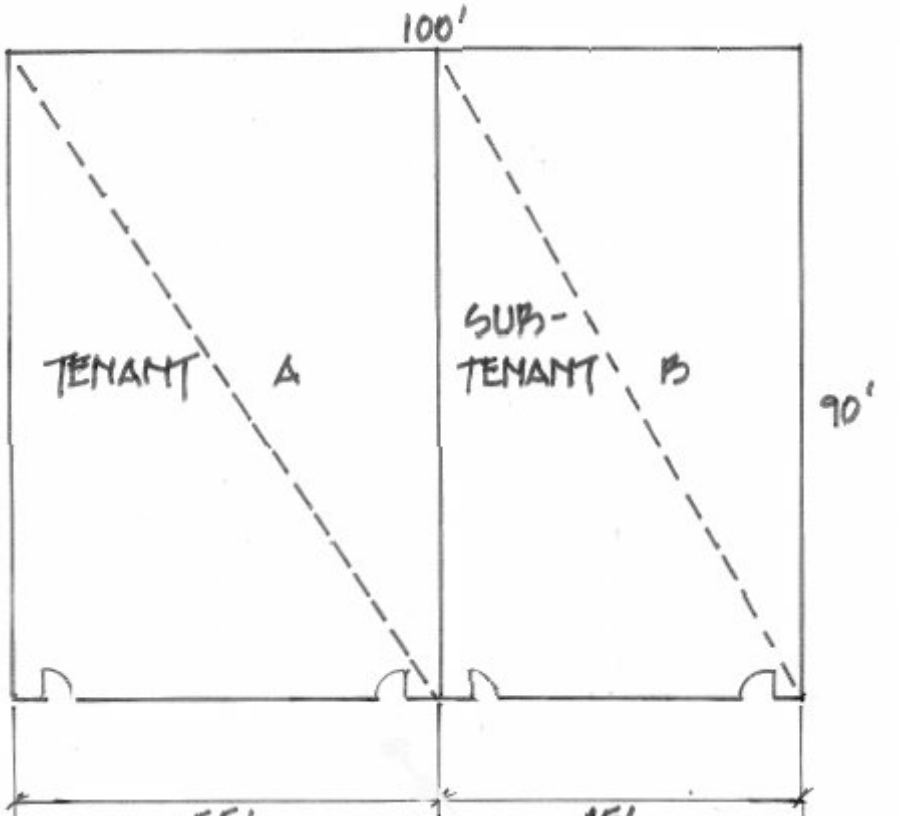


Dimension varies depending on presence of fire sprinklers

Step 2 –
A) If the space is in a fire sprinklered building the minimum distance apart is one third of the diagonal.
B) If the building is not fire sprinklered the minimum distance apart is one half of the diagonal.

Sometimes there are problems in providing second exits

In the example below, tenant A wants to sublet space to sub-tenant B. The space is on the second floor and the new layout requires that each space has two exits.



Suppose Tenant A wants to sublet 45% of his space to another. Can he provide the two exits required for each of the occupants. It depends……

If a sprinklered building The longest diagonal dimension in space A is 106 feet, 1/3rd of this distance is 36 (round up) - so the pair of exits for space A fit easily in the 55 foot corridor frontage of the suite. The longest diagonal dimension in space B is 101 feet, 1/3rd of this distance is 33 (round up) - so the pair of exits for space B fit easily in the 45 foot corridor frontage of the suite.

If a non-sprinklered building:
The longest diagonal dimension in space A is 106 feet, 1/2 of this distance is 53 feet. So both exits can fit in the 55 foot corridor frontage.The longest diagonal dimension in space B is 101 feet, 1/2 of this distance is 51 feet. The second exit cannot be put on the corridor frontage and the deal dies or undergoes serious revision.

Exit and egress issues should be addressed immediately when considering division of a space. Chapter 10 of the CBC is more complex than conveyed here and most cities require participation of an architect when there are exiting issues.

Professional review of this article by: Russ Gamble, Architect