

HOW TO CALCULATE AN OCCUPANT LOAD?

INTRODUCTION TO OCCUPANT LOAD SERIES BY MEYERFIRE UNIVERSITY | JANUARY 2023

SUMMARY

An **Occupant Load** is the **maximum probable number of occupants** in a room or space, **consistent with its intended function**.

- For **Fixed-Seating** (seats that are bolted to the floor), occupant load for a room or space is just the count (number) of fixed seats.
- For areas without fixed seating, the occupant load is calculated as the Area of the room or space divided by the **Occupant Load Factor**:

$$\text{Area} / \text{Occupant Load Factor} = \text{Occupant Load}$$

- Any resulting fraction (even .1) is rounded up to the next whole number (so that egress elements effectively account for the occupant)

An **Occupant Load Factor** is like a density matching a specific amount of area per person. IBC Table 1004.5 and NFPA 101 Table 7.3.1.2.

- The greater the occupant load factor (ie: 500 sf/person for warehouses), the less occupants will be attributed to a space.
- The lower an occupant load factor (ie: 5 sf/person for standing room concert venues), the more occupants will be attributed to a space.



AREA	OCCUPANT LOAD FACTOR	OCCUPANT LOAD
1,500 SF	/ 500 SF/PERSON	= 3 PEOPLE

Space Calculated with “Warehouse” Occupant Load Factor
(this could be consistent with a shipping and receiving area)



AREA	OCCUPANT LOAD FACTOR	OCCUPANT LOAD
1,500 SF	/ 15 SF/PERSON	= 100 PEOPLE

Space Calculated with “Assembly Less Concentrated Without Fixed Seating”
Occupant Load Factor
(this is incorrect for a shipping and receiving area)

CODE/STANDARD REFERENCES



IBC – 2021: Table 1004.5 Occupant Load Factors

NFPA 101 – 2021: Table 7.3.1.2 Occupant Load Factors

VIDEO LINK

www.meyerfire.com/university/how-to-determine-an-occupant-load

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