



Risk Category Occupant Load Calculation

Building Division Interpretations and Procedures

Index Number:	IBC-2022-001
Issue Date:	2/1/2022
Code:	2018 IBC; 2018 IEBC
Section:	IBC 1604.5; IEBC Chapters 3 & 5

Background

IBC Section 1604.5 requires buildings and structures to be assigned a Risk Category in accordance with Table 1604.5. Table 1604.5 requires buildings of “any other occupancy with an occupant load greater than 5,000” to be assigned to Risk Category III. The question arises as to how occupant loads are determined for Risk Category classification. Footnote “a” of Table 1604.5 states: “for purposes of occupant load calculation occupancies required by Table 1004.1.2 to use gross floor area calculations shall be permitted to use net floor areas to determine the total occupant load.” This policy provides guidance for the use of net floor area calculations for determination of the occupant load of a building for Risk Category classification. **1604.5**

IBC Ch. 2 defines “*net floor area*” as “the actual occupied area not including unoccupied accessory areas such as corridors, stairways, ramps, toilet rooms, mechanical rooms and closets.” Note that general circulation areas which are not enclosed like a corridor cannot be deducted from the net area. **Ch. 2**

Where portions of a building are completely structurally separated, each portion may be separately classified for risk category determination provided that the separated portions do not share any egress or life safety components. **1604.5.1**

The Building Permit submittal documents should include Occupant Load calculations used to determine Risk Category.

Occupant loads for new buildings

The structural design of new buildings often occurs prior to a complete understanding of final layout and uses, making it difficult to determine net floor area. This portion of the policy provides guidance for optional determination of occupant loads based on use of the space when the final floor layout is not known.

Parking:

- 50% of the gross area

Office:

- 85% of the gross area.
- To account for typical business conference rooms, where the final layout is unknown, a minimum of 5% of that 85% of the gross area should be assumed to be assembly area.
- Cafeterias and Kitchenettes within a tenant space and serving only those tenants within the building may be counted as open office when determining occupant load for risk category.

Assembly:

- 85% of the gross area

Residential:

- 75% of the gross area
- Private balconies/patios may be considered unoccupied areas.
- 85% of the gross area of occupied roofs, courts and similar outdoor areas accessible to and usable by the building occupants

Retail:

- 75% of the gross area

Restaurants:

- 75% of the gross area taken as assembly

Exercise rooms/Gyms:

- 85% of the gross area in areas of fixed equipment only.
- Gross area must include pool and spa rooms, locker rooms, and sauna areas.

Mechanical Rooms; Storage areas; Loading Docks:

- These areas may be considered to be unoccupied accessory areas.

Occupant loads for existing buildings:

Where an alteration or change of use to an existing building increases the overall occupant load, this policy may be used to calculate the overall occupant load for the building for determining risk category.

Where a change of use occurs in an existing building that has been previously occupied, analysis of the risk category is not required provided the new occupancy is less than 10 percent of the overall building area. For purposes of analyzing this, the new occupancy area shall be cumulative and occupancy changes over time must be considered. **IEBC 504.3**

Signature Gregg Schrader
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Date: 02/11/2022

Attachments

Supersedes: