

Occupant Load Calculation

The District of Hope does not provide occupant load calculations for LCRB (Liquor and Cannabis Regulation Branch) liquor licence applications. Owners of Assembly Occupancy are required to provide floor plans and occupancy load calculations. Assembly Occupancy with occupant loads of 30 or less can use a designer for this.

Assembly Occupancy with occupant loads of more than 30 will require the services of a registered professional (Architect)

Determining Occupant Load:

Items 1 – 7 below must all be considered in determining allowable occupant load.

1. Net floor area: (BCBC Table 3.1.17.1.) 3.1.17. occupant load

- An occupant load of 1.2 m² net floor area per person for restaurants.
- An occupant load of 0.95 m² net floor area per person for licensed beverage establishments
- Occupant load calculations are specific to the use of different areas within a suite. For example, staff-only areas, such as kitchens, are calculated at 9.3m² per person and storage areas at 46 m² per person. See Table 3.1.17.1. BCBC. Washrooms are not included in the calculations.
- An occupant load must be established for patios and decks, but this occupant load is not additional to the occupant load for the interior, as the exterior patios and decks are assumed to be occupied by the same patrons already counted indoors. Please see Interpretation File No: 12-0124 prior to calculating occupant load for indoor/outdoor spaces.

2. Number of water closets: (BCBC 3.7.2.2.) Table 3.7.2.2-A

1-10 persons..... 1 universal

1- 25 persons..... universal, 1 unisex

26-50 persons..... 1 male universal, 1 female universal; or

51-75 persons.....2 male, 2 female, 1 universal

76-100 persons..... 2 male, 3 female, 1 universal

101-125 persons..... 3 male, 4 female, 1 universal

126-150 persons..... 3 male, 5 female, 1 universal, one accessible toilet stall in public washroom

151-175 persons..... 4 male, 6 female, 1 universal, one accessible toilet stall in public washroom

- Universal toilet rooms must meet the “accessibility” requirements of the 2024 BCBC, Sentence 3.8.3.12.
- Existing establishments that do not meet the current Building Code requirements for washrooms will be required to add or change washrooms if renovations to the washrooms are taking place, or an occupant load increase is proposed and an insufficient number of water closets exist.

3. Exit capacity: [BCBC 3.4.3.2.(1)]

6.1 mm of exit width required per person (i.e., a 36-inch door will accommodate 150 persons, but any single door is not permitted to accommodate more than half the occupant load).

4. Fire alarm: [BCBC 3.2.4.1.(4)(g)]

Fire alarm is required where the occupant load exceeds 150 persons. Fire alarms must be designed by an electrical engineer; drawings are reviewed by Hope Fire Rescue Department.

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Determining Occupant Load (Continued):

5. Exit signs: [BCBC 3.4.5.1.(7)]

Exit signs are required where the occupant load exceeds 60 persons.

6. Panic hardware: [BCBC 3.4.6.16.(2)]

Panic hardware is required on exit doors from floor areas where the occupant load exceeds 100 persons.

7. Parking: depends on occupancy type, location, and/or zoning

Typically, one space is required for each three seats in a restaurant or beverage establishment.

Building Code Review:

A. The following information is required on floor plans.

- Layout of rooms with uses noted
- Table and seating plan
- Permanent fixtures, (i.e., bars, bar, partitions, stage, pool table, etc.)
- Washrooms and toilets/urinals, including staff washrooms
- Exits, door dimensions, direction of swing, and panic hardware
- Dimensions and floor areas of public, staff-only areas, decks, and patios
- Plan showing on-site parking

B. Using Items 1-7 of this document as a checklist, calculate the occupant load, number of washrooms required, and exit capacity.

Existing capacity	# of persons			Occupant Load Calculations
Occupant load based on floor area (see item 1)	M ²			
	M ²			
	M ²			
Water closets	# male	# female	# universal	
Exit capacity	mm			

C. **Buildings that are deficient in any of the items (Nos. 1 to 7 above) may require upgrading to the current BCBC minimum before a permit can be issued.**

- Where food or drinks are served, drawings to be submitted must be **stamped for approval by Fraser Health.**

CI. A building permit is required if the building must be altered to accommodate a new occupant load.

- Permit fee is based on value of the alterations.
- The BC Fire Code requires that an occupant load sign be posted wherever the occupant load exceeds 60 people. BC Building Code requires that an occupant load sign be posted when an assembly occupancy with an occupant load of 30 or less has been classified as Group D occupancy under Article 3.1.2.7. of the BCBC. Permanent signage must be produced and posted by the building permit applicant in a conspicuous location near the suite's principal entrance. The sign is to have lettering not less than 50mm high with a 12mm stroke. Building Inspections staff will visit the premises to ensure the required signage is posted.

If you have any questions or require clarification, please contact a commercial plan reviewer at our office at 604-869-5671. This guideline should not be used as a substitute for existing building codes and other regulations. The building owner is responsible for compliance with all codes, bylaws, and other regulations whether or not described in this guideline.

BC BUILDING CODE INTERPRETATION COMMITTEE

A joint committee with members representing
AIBC, EGBC, BOABC

File No: 12-0124

INTERPRETATION

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Interpretation Date:	November 20, 2018
Building Code Edition:	BC Building Code 2012
Subject:	Occupant load for dining, beverage and cafeteria space
Keywords:	Occupant load; dining, beverage and cafeteria space; outdoor seating; means of egress; washrooms
Building Code Reference(s):	3.1.17.1, 3.7.2.2

Question:

A dining establishment has an indoor dining area of 200m² and an adjoining outdoor dining area of 50m².

1. How is the occupant load calculated?
2. How is means of egress considered?
3. How are washroom provisions considered?

Interpretation:

1. In this example the appropriate occupant load factor for both indoor and outdoor dining areas is 1.2m²/person. This results in potential respective occupant loads of 167 persons for the indoor dining area, and 42 persons for the outdoor dining area. The combined total of both indoor and outdoor dining would be 167+42=209 persons.

Sentence 3.1.17.1.(3) requires balconies to be regarded as part of the floor area, therefore similar adjoining contained exterior spaces are considered an extension of the interior floor area, for the purposes of occupant load calculations.

Such exterior areas are quite often covered or enclosed by awnings, canopies, or tent-like enclosures to facilitate extended use.

If it can be demonstrated that fewer persons will actually occupy both interior and exterior spaces simultaneously, then this would be consistent with Clause 3.1.17.1.(1)(c).

Exterior space seating is typically seasonal and the occupants are often either seated indoors or outdoors depending on the weather; discussion and agreement with the Authority having Jurisdiction may be warranted.

2. Depending on the arrangement of the dining premises, the means of egress must consider the combined total occupant load of both indoor and outdoor (209 persons) if the outdoor area has its means of egress via the indoor dining area, and vice versa.



Patrick Shek, P.Eng., CP, FEC, Committee Chair

The views expressed are the consensus of the joint committee with members representing AIBC, EGBC and BOABC, which form the BC Building Code Interpretation Committee. The Building and Safety Standards Branch, Province of BC and the City of Vancouver participate in the committee's proceedings with respect to interpretations of the BC Building Code. The purpose of the committee is to encourage uniform province wide interpretation of the BC Building Code. These views should not be considered as the official interpretation of legislated requirements based on the BC Building Code, as final responsibility for an interpretation rests with the local *Authority Having Jurisdiction*. The views of the joint committee should not be construed as legal advice.

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However, if each area is independently served by its own means of egress, then the respective occupant load of each area could be considered separately for the purposes of means of egress.

3. If the washroom facilities are only provided via the indoor dining area and if it is expected that both indoor and outdoor areas are fully occupied simultaneously, the combined total occupant load of both indoor and outdoor areas should be used for calculating washroom counts. Otherwise the anticipated occupant load should be used if the outdoor seating areas are only seasonally occupied.

Refer to the discussion in item 1. on the occupant load calculations.

See also past Building Code Interpretation 12-0045.



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