

# Occupant Load Calculation

## Suites of Assembly Occupancy

**Overview:** In support of tenant improvement/building permits, this guide is designed to assist in determining the occupant load for your assembly suite. For assembly occupancies of daycare use, see our guide [Daycare – Conversions to Assembly Occupancy](#).

The requirements of the Zoning Bylaw, Parking Bylaw, and the BC Building Code (BCBC) for health and life-safety are to be considered when determining the occupant load.

The City does not provide occupant load calculations for LCRB (Liquor and Cannabis Regulation Branch) liquor licence applications. Upon request, Building Inspections can provide a letter stating we do not provide this service. Please contact Building Inspections staff at [building.inspections@nanaimo.ca](mailto:building.inspections@nanaimo.ca), or call 250-755-4429 to request this letter. This letter will be a requirement of your submission to the LCRB. It is possible to retain the services of an architect to provide the required occupant load calculation for an LCRB licence.

For Liquor Primary Licenses, a City Council Resolution is required for alterations resulting in an increase in occupant load for the addition of a patio and for new Liquor Primary Licences. Contact the Current Planning Section for further information on this process.

### 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.)

- An occupant load of 1.2 m<sup>2</sup> net floor area per person for restaurants.
- An occupant load of 0.95 m<sup>2</sup> 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 9.3m<sup>2</sup> per person and storage areas at 46 m<sup>2</sup> 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 ( i.e., the same persons sit outdoors in fine weather).

#### 2. Number of water closets: (BCBC 3.7.2.2.)

- 1-10 persons.....1 universal
- 11-20 persons.....1 universal, 1 unisex
- 21-50 persons.....1 male universal, 1 female universal; or
- 21-60 persons.....1 male, 1 female, 1 universal
- 61-110 persons.....1 male, 2 female, 1 universal
- 111-150 persons.....2 male, 3 female, 1 universal
- 151-210 persons.....2 male, 4 female, 1 universal, one accessible toilet stall in public washroom
- 210-260 persons.....3 male, 5 female, 1 universal, one accessible toilet stall in public washroom
- Universal toilet rooms must meet the “accessibility” requirements of the 2018 BCBC, Sentence 3.7.2.10.
- 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 Nanaimo 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
<b>Occupant load based on floor area (see item 1)</b>	M <sup>2</sup>			
	M <sup>2</sup>			
	M <sup>2</sup>			
<b>Water closets</b>	# male	# female	# universal	
<b>Exit capacity</b>	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 Island Health.**

D. 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 3.1.2.6. 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 250-755-4429. 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.

## Occupant Load Calculation

Forms and guides specific to Building Inspections can be printed from the City of Nanaimo website [www.nanaimo.ca](http://www.nanaimo.ca) by typing your search word in the Search Bar or visiting the [Building Permits](#) pages under Property & Development, or can be picked up at our office at 411 Dunsmuir Street. Bylaws can be found on our website under [City Bylaws](#) on the main page.