



Fire Paramedic Service • Service d'incendie et de soins médicaux d'urgence
Fire Prevention Branch • Direction de la Prévention des incendies

Occupant Load Package

**To assist building owners
to establish occupant load(s)
for their establishment**

April 2011

Embrace the Spirit • Vivez l'esprit

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The Manitoba Fire Code 2.7.1.4 requires that “in assembly occupancies with occupant loads exceeding 60 persons, the occupant load shall be posted in conspicuous locations near principle entrances to the room or floor area”.

This document contains information to assist building/business owners, on establishing an occupant load for their place of assembly. The Winnipeg Fire Paramedic Service will review all submissions, and maintain the right to require you to obtain the services of a professional engineer or architect, when dealing with more complicated issues. The professional will be required to conduct a code analysis of your premises and/or building, to ensure all requirements of the Manitoba Fire Code are satisfied.

The Winnipeg Fire Paramedic Service will issue occupant load placards in existing buildings only. We will not issue placards to any of the following:

- 1) Existing buildings that have previously been issued an occupant load placard, or requests to increase a previously approved occupant load by the City of Winnipeg, Property and Planning Department.
- 2) Any room or space where the occupant loads 60 persons or less.

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PART 1-INFORMATION

Applicants requiring a permit to “Establish Occupant Loads” must apply at the City of Winnipeg, Permits Branch, #31-30 Fort Street, 986-5140.

Your submission shall include the following:

- 1) Scaled drawings (2 sets). The drawings must show the seating arrangement of the floor or room. If the room is on a floor other than the ground floor, other drawings shall be submitted to indicate where the discharge locations are from the exits on the floor in question. The drawings must be dimensioned and should include the ***Building Fire Safety Systems***, such as locations of exits, direction of door swing, pull stations, fire alarm panel, emergency lighting, exit signs, and the presence of panic hardware.
- 2) The completed Parts 2, 3, 4, and 6 (Building Life Safety Checklist).
- 3) Payment will be made to the City of Winnipeg Permits Branch.

You may decide to engage the services of an architect/ engineer to assist you with the above requirements.

IMPORTANT NOTE:

A Building Fire Safety Systems Checklist (Part 6) is included with this package, and must be completed prior to your permit application to establish occupant load. If your premises requires the installation of one or more ***Building Life Safety Systems***, it shall be installed under permit obtained at the City of Winnipeg Permits, Unit 31 – 30 Fort Street, prior to your permit application to establish occupant load. Call the Fire Paramedic Service Plan Examiner at 986-7551, if you require more information regarding your ***Building Life Safety Systems***.

Upon review of your submission, the Fire Paramedic Services Plan Examiner will contact you, for an onsite inspection. The plan examiner will verify all information and upon acceptance will issue an occupant load card.

PART 2-NET FLOOR AREA AND MEANS OF EGRESS

A: *Net Floor Area* is defined as the floor space in a room excluding areas occupied by structural features and fixtures, such as tables, furnishings or other equipment. In some assembly occupancies, where the number and type of furnishings change according to the nature of the function, it may be appropriate to calculate maximum occupant loads for each use.

| | |
|---|--|
| To calculate Net Floor Area: | Total Gross Area of the room: _____sq ft |
| Less: Aisles, circulation in front of washrooms/bars (900 mm aisle width) | _____sq ft |
| Areas behind the bar and bar fixtures | _____sq ft |
| Structural elements/ or other | _____sq ft |
| Music booths, stages, dance floors | _____sq ft |
| Tables | _____sq ft |
| "Net Floor Area" _____sq ft divided by 10.76 = _____square meters(M2) | |

B: *Means of Egress* is defined as a continuous path of travel provided for the escape of persons from any point in a building or contained open space to a separate building, an open public thoroughfare, or an exterior open space protected from fire exposure from the building and having access to an open public thoroughfare. Means of egress includes exits and access to exits. *Means of egress* shall consistently remain the same all the way to the exterior of the building. The smallest width measured anywhere along the means of egress from a room or floor area, is the only width that will be considered. Exits that converge with other rooms or floor areas may require the services of a professional designer to calculate exit capacity. All exits shall comply to the Manitoba Building Code in terms of door swing, panic hardware, emergency lighting, exit signs, pull stations, and shall not contain any storage.

An **Exit** is defined as the part of a means of egress, including doorways, that leads from the floor area it serves, to a separate building, an open public thoroughfare, or an exterior open space protected from fire exposure from the building and having access to an open public thoroughfare.

The Manitoba Building Code (MBC) requirements for exits are:

- 1) If there is only one exit, and the requirements of MBC 3.4.2.1 are satisfied, the occupant load will be limited to 60 persons.
- 2) If there are two exits available, the distance between the 2 exits must be greater than 1/2 of the diagonal (corner to corner) distance of the room or floor area for the exits to be considered remote (See MBC 3.4.2.3(1)(b)).
- 3) If there are 2 exits from a room or floor area each exit may only contribute 1/2 of the total exit capacity. This occurs when one exit is wider than the other. Only the smaller exit of the two can be used to determine exit width (See MBC 3.4.3.2(7)).
- 4) If your premises contains 3 or more exits, no exit may contribute more than 1/2 the total exit capacity (See MBC 3.4.3.2(7)).

PART 3-MAXIMUM OCCUPANT LOAD CALCULATION

The maximum occupant load of a room or floor area shall be the lesser of:

- 1) Dividing your “net floor area” by 0.4 m2/ person and,
- 2) Determining the number of persons for which “means of egress” are provided (exit capacity).

1) Determining your occupant load based on net floor area

Step 1: Determine your net floor area (from Part 2, Section A), using your scaled drawings. Be sure you deduct any spaces, previously defined that cannot be considered as part of the net area. The net floor area shall be measured in square meters.

Step 2: Divide:
$$\frac{\text{Net Floor Area (M2-from Part 2)}}{0.4 \text{ (M2/person)}} = \text{_____} \# \text{ of Persons}$$

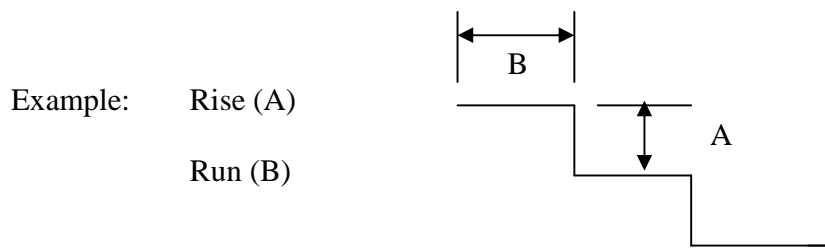
2) Determining Exit Capacity

Step 3: Determine your total exit width, which is the cumulative width of exits based on the Manitoba Building Code requirements (from Part 2, Section B). The exit width shall be measured in millimeters.

Step 4: Divide:
$$\frac{\text{Total Exit Width (mm)}}{\text{Appropriate Factor (Table A below)}} = \text{_____} \# \text{ of Persons}$$

TABLE A

| Type of Exit | Appropriate Factor |
|--|---------------------------|
| 1) Exits are at grade level or exits with ramps where the slope of the ramp is less than 1:8. | 6.1 mm/person |
| 2) Exits served by stairs, at any point along the means of egress, where the rise is not more than 180 mm and the run is not less than 280mm (see example). | 8 mm/person |
| 3) Exits served by stairs, <900 mm in width, or where the rise or run value exceeds those in sentence 2 above (see example), or the slope of a ramp is greater than 1:8. | 9.2 mm/person |



Your maximum Occupant Load is the lowest value from the calculation in *Step 2* or *Step 4*.

Note: You may apply for a Maximum Occupant Load that is less than your calculations. If so, indicate in Part 4 of this package the Maximum Occupant Load you are requesting.

The number of persons permitted to occupy the room or floor area shall not exceed the posted occupant load. If you have requested more than one occupant load, due to different uses of your facility, you may not exceed the number posted for the specific event being held.

If you have any questions or require assistance call the Fire Paramedic Service Plan Examiner at 986-7551.

PART 4-APPLICATION FORM FOR OCCUPANT LOAD DETERMINATION

Building Address: _____

Business Name: _____ Business Phone: _____

Type of occupancy (restaurant, pub, banquet hall): _____

| Applicant | Premise Owner |
|---|---|
| Name: | Name: |
| Title: | Address: |
| Address: | City: Postal Code: |
| City: Postal Code: | Phone: |
| Phone: | |
| Fax: Cell: | |

Requested Occupant Load

| <u>Area #1 (name)</u> | <u>Location in Building</u> |
|--|---|
| Gross Area _____ m ² | Net Area: _____ m ² @ 0.4 m ² /person = _____ |
| # Exits: _____ | Total Exit Width: _____ mm @ _____ mm/person = _____ |
| OCCUPANT LOAD REQUESTED _____ persons | |
| OCCUPANT LOAD CALCULATED _____ persons | |

| <u>Area#2 (name)</u> | <u>Location in Building</u> | |
|--|-------------------------------|--------------------------------------|
| Gross Area _____m ² | Net Area: _____m ² | @ 0.4 m ² /person = _____ |
| # Exits: _____ | Total Exit Width: _____mm | @ _____mm/person = _____ |
| OCCUPANT LOAD REQUESTED _____ persons | | |
| OCCUPANT LOAD CALCULATED _____ persons | | |

NOTE: Non-fixed seating shall conform to the Manitoba Fire Code 2.7.1.5; see Part 5 of this package.

If you are establishing occupant load in more than two rooms or floor areas submit a list in similar format to the above.

I HEREBY CERTIFY ALL FIGURES ENTERED TO BE TRUE AND ACCURATE.

APPLICANT'S SIGNATURE: _____ DATED: _____

To obtain your permit to Establish Occupant Load, return completed Parts 2, 3, 4, and 6 (the *Building Life Safety Checklist*) of this package, along with your scaled drawings and payment to the City of Winnipeg Permits Branch at 31 – 30 Fort Street, Winnipeg, Manitoba.

**PART 5 – GUIDE TO THE MANITOBA FIRE CODE REQUIREMENTS
FOR NON-FIXED SEATING**

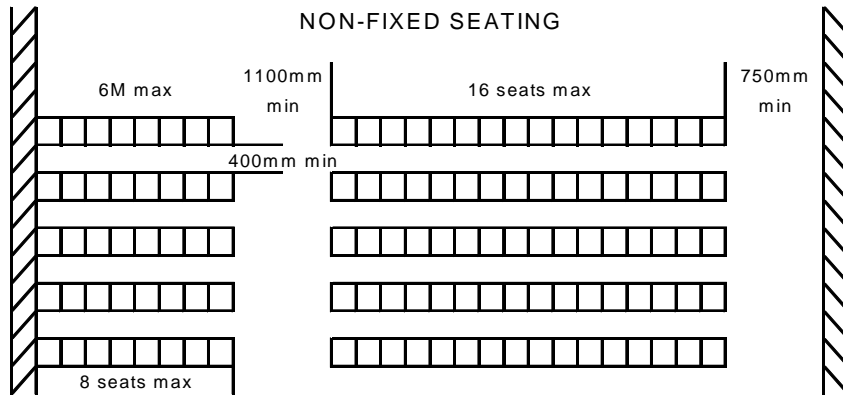
Non-fixed seating applies to seats that are not permanently attached in one position. Generally non-fixed seats are used in areas that are utilized in many different ways. An example would be the gymnasium in a school, or the hall in a community club.

This guide is to assist property/business owners so they are in compliance with the Manitoba Fire Code requirements for non-fixed seating.

Typically, non-fixed seating will either be arranged in rows (indoors or outdoors), or at tables.

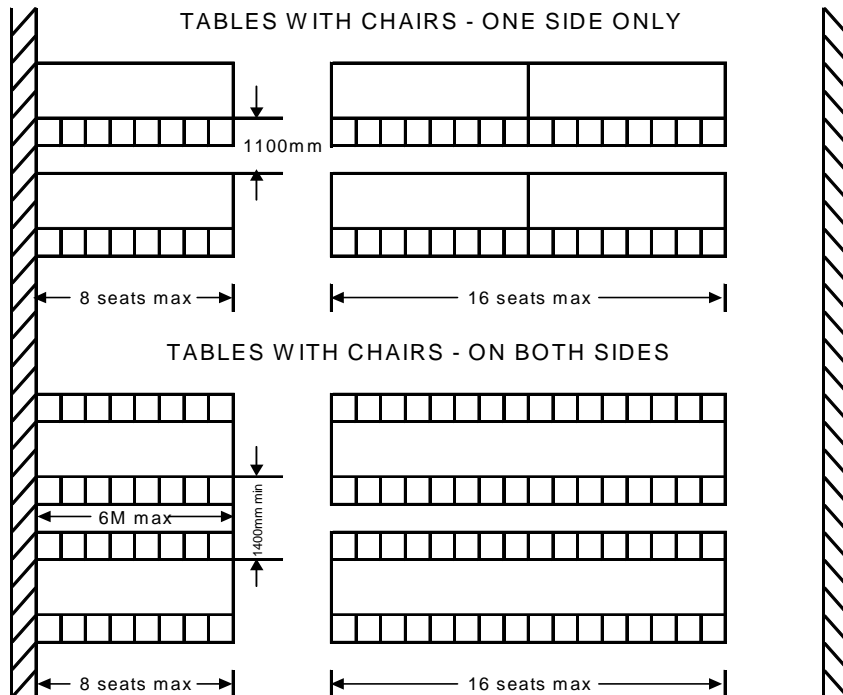
A. Non-fixed seating arranged in rows shall meet the following (see illustration):

- 1) The seats shall be arranged in rows.
- 2) The distance between the rows shall be 400 mm (16 inches), and be measured from a plumb line from the back of one seat to the most forward projection of the seat directly behind it.
- 3) Aisles shall be located so there are no more than 7 seats between any seat and the nearest aisle. Thus, there can only be 16 seats in a row between aisles.
- 4) Aisles that serve rows where there are 60 seats or fewer must be at least 750 mm (30 inches) wide.
- 5) Aisles that serve rows where there are more than 60 seats must be the greater of 1100 mm (44 inches) wide, or the number of seats the aisle serves X 6.1 mm/person. For example, if the aisle serves 100 seats: $100 \times 6.1 = 610$ mm. The greater of 610 mm or 1100 mm is 1100 mm. Thus, the minimum width the aisle serving 100 seats can be is 1100 mm (44 inches).
- 6) Dead end aisles must not be longer than 6 M (20 ft.).
- 7) When your assembly contains more than 200 seats, the seats in a row shall be fastened together in units no fewer than 8 seats. If the row has 7 or fewer seats, then all the seats in the row shall be fastened together.
- 8) When arranging non-fixed seats in outdoor assembly areas, aisles can be located so there are no more than 15 seats to the nearest aisle (a maximum of 32 seats/row). Aisles shall be the greater of 1200 mm (48 inches), or the number of seats served by the aisle X 1.8 mm.



B: Non-fixed seating that is arranged with tables shall meet the following (see illustration below):

- 1) If the tables being used will be set up with chairs on both sides, the distance from the edge of one table to the edge of the next shall not be less than 1400 mm (56 inches).
- 2) If the tables being used will be set up with chairs on one side only, the distance from the edge of one table to the edge of the next shall not be less than 1000 mm (40 inches).
- 3) There can be no more than 16 seats in a row, or no more than 7 seats to the nearest aisle as was applied to assembly seating in rows.



PART 6 – BUILDING LIFE SAFETY SYSTEMS
CHECKLIST

| BUILDING CODE REQUIREMENT | DOES THIS SYSTEM EXIST IN YOUR PREMISES | PLAN EXAMINATION USE ONLY |
|--|---|--|
| DOOR SWING IN DIRECTION OF TRAVEL MBC 3.3.1.11(2) | <input type="checkbox"/> Yes <input type="checkbox"/> No | Occupant load is >60 persons. |
| EMERGENCY LIGHTING MBC 3.2.7.3. | <input type="checkbox"/> Yes <input type="checkbox"/> No | Occupant load is >59 persons. |
| PANIC HARDWARE MBC 3.3.2.7. | <input type="checkbox"/> Yes <input type="checkbox"/> No | Occupant load is >100 persons. |
| EXIT SIGNS MBC 3.4.5.1. | <input type="checkbox"/> Yes <input type="checkbox"/> No | Building is >2 stories in height, or Occupant Load is > 150 persons, or Room/floor area has a fire escape. |
| FIRE ALARM SYSTEM MBC 3.2.4.1. | <input type="checkbox"/> Yes <input type="checkbox"/> No | Building is >3 stories in height (includes stories below grade) or Occupant Load is >150 persons in a building containing a licensed beverage establishment or restaurant or Occupant load is >150 persons above or below the 1 st storey or Building is sprinklered or The building has a school college or child care facility with an occupant load >40. |