Construction requirements for

# LOWER LEVEL DEVELOPMENT

in residential dwellings

# Contents



*Every effort has been made to ensure the accuracy of information contained in this publication. However, in the event of a discrepancy between this publication and the R.M of Tache By-law the By-law and current Manitoba Building Code and Amendments will take precedence.*

## Building Permit Requirements

A building permit is required:

- If structural changes such as altering or moving beams/ columns or modifications to foundation walls or floor structure is planned;
- If creation of a bedroom is part of the development;
- You are developing previously unfinished areas.

When a building permit is required, the following must be provided at the time of application:

- A floor plan indicating the use of rooms.
- Signed and sealed engineered drawings for the alteration or moving of beams, columns or floor joist structure or the enlargement or creation of a bedroom window in a foundation wall.
- If a window is being added or enlarged in the sidewall of the home, a site plan and elevation drawing showing side yard clearances and dimensions of all openings.This may be required for front and rear as well in certain situations.
- If a bedroom window is being installed below grade, a section drawing through the window well.

A separate electrical permit will always be required for development of a lower level which is obtained and issued by Manitoba Hydro. If any plumbing additions or alterations are planned then a separate plumbing permit will also be required. Plumbing information regarding permits, and installation details can be found on page 10 in this booklet.

# Building Code Requirements

## Ceiling height

The minimum room heights, measured from the finished floor to the ceiling surface, are shown in **TABLE 1**.

**TABLE 1 - Room Heights**

| Room or Space | Minimum Heights | Minimum Area Over Which Minimum Height Must Be Provided (1)(2) |
|---|---|---|
| Bedroom or sleeping area | 2.1 m (6'-11") | Lesser of the area of the space or 3.5 sq.m. (38 sq. ft.) |
| Unfinished basement including laundry area therein | 2 m (6'-7") | Area under beams in laundry areas and in any location that would normally be used for passage to laundry and storage areas. |
| Bathroom, water-closet room | 2.1 m (6'-11") | Lesser of the area of the space or 2.2 sq. m. (24 sq. ft.) |
| Passage, hall (3) and finished rooms not specifically mentioned above | 2.1 m (6'-11") | Area of the space |

**Note to TABLE 1:**

1) Areas in rooms or spaces over which ceiling height is not less than the minimum specified in Table 1 must be contiguous with the entry or entries to those rooms or spaces.
2) Area of the space must be measured at floor level.
3) Hallways must have a width of at least 860 mm (2'-10")

## Doors

The only required door in a lower level development is at the entrance to any room containing a toilet. Although other doors are not required by code, they must be of a minimum size when they are installed.

Swinging, sliding and folding doors must be a minimum of 1980 mm (6'-6") in height and 810 mm (2'-8") in width except for doors used in walk-in closets and rooms containing a toilet. These doors need to be a minimum of 610 mm (2'-0") in width. Bedroom doors are a minimum 760 mm (2'-6").

## Bedroom Windows

Windows must be designed and installed to provide an exit from the bedroom in the event of an emergency where normal exiting is not possible. Having a door in the bedroom that leads directly to the outside negates the requirement for this window.

This window must be openable from the inside without the use of tools or special knowledge.

The window must provide an unobstructed opening with a minimum area of 0.35 sq. m. (3.77 sq. ft.) with no dimension less than 380 mm (1'-3"). See FIGURE 1.

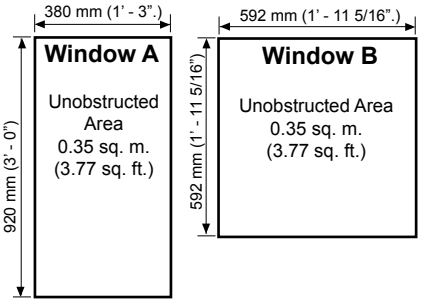
Where a required bedroom window opens into a window-well, a clearance of at least 760 mm (2'-6") must be provided in front of the window. Where the window sash swings toward the window-well, the operation of the sash must not reduce the clearance in a manner that would restrict escape in an emergency.

If your existing lower level windows do not meet the required size, they will need to be replaced or the bedroom will not be permitted.

### FIGURE 1 - BEDROOM WINDOW SIZING

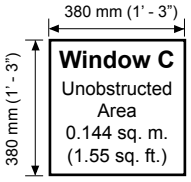
**APPROVED**

Windows A and B **CONFORM** to height, width and area requirements.




**NOT APPROVED**

Window C conforms with height and width requirements; **DOES NOT CONFORM** to area requirements.



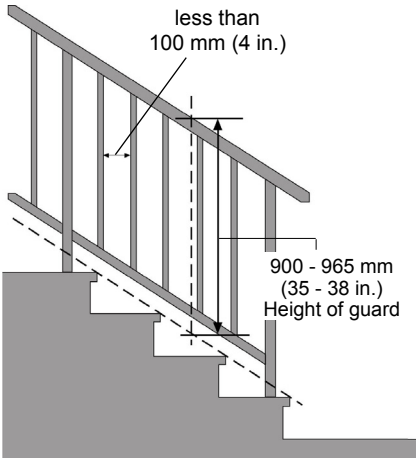
## Stair Guards

When an interior stair has more than 2 risers, the sides of the stair and the landing or floor level around the stairwell must be enclosed by walls or be protected by guards.

Guards for stairs within dwellings must be not less than 900 mm (2'-11") in height (measured vertically above a line drawn through the outside edges of stair nosings) and above landings.

Openings through ballusters in guards and handrails must be equal to or less than 100 mm (4") unless it can be shown that the location and size of openings that exceed this limit do not represent a hazard. See FIGURE 2.

**FIGURE 2 - GUARD/HANDRAIL**



## Handrails

When a stair has more than 2 risers, a handrail must be provided on at least one side of the stair if it is less than 1100 mm (3'-7") in width.

Handrails must be not less than 865 mm (2'-10") and not more than 965 mm (3'-2") in height, measured vertically from a line drawn through the outside edges of the stair nosing.

**Note:** In those cases where a stair requires both a guard and a handrail, a reasonable solution is to provide a guard which also acts as a handrail. See **FIGURE 2**.

A clearance of not less than 50 mm (2") must be provided between each handrail and the wall to which it is fastened.

Handrails must not project more than 100 mm (4") into the required width of a stairway.

Handrails must be constructed to be continually graspable along their entire length with no obstruction on or above them to break a handhold, except when the handrail is interrupted by newel posts at changes in direction.

Handrails must be attached to wood studs, solid blocking, steel studs or masonry at points spaced not more than 1200 mm (4'-0") apart by means of not less than 2 wood screws at each point, penetrating not less than 32 mm (1½") into backing material.

## Smoke alarms

Smoke alarms conforming to CAN/ULC-S531, "Smoke Alarms" must be installed in each dwelling. They must be installed on or near (per manufacturer's installation instructions) the ceiling.

There must be at least one smoke alarm on each floor level, including lower levels and one in each bedroom.

Smoke alarms shall be supplied from a lighting circuit or a circuit with a mix of lighting and receptacles and shall not be installed on a circuit that is protected by a GFCI or an AFCI.

Smoke alarms must be interconnected – wired so that the activation of one alarm will cause all alarms within the dwelling to sound.

## Carbon monoxide alarms

Carbon monoxide alarms conforming to CAN/CSA-6.19 “Residential Carbon Monoxide Alarming Devices” must be installed in every dwelling that also contains any fuel burning appliance or has an attached garage.

As per the R.M of Tache Council resolution 2018-0662, approve the requirement of Carbon Monoxide Detectors for all floors (including a basement) within a Dwelling until mandated by the proposed Building By-law.

Carbon monoxide alarms must be installed within 5 m (16’) of every bedroom door measured following corridors and doorways and in each room that contains a solid fuel-burning appliance.

Carbon monoxide alarms must be hardwired and interconnected with all smoke alarms .

Carbon monoxide alarms shall be supplied from a lighting circuit or a circuit with a mix of lighting and receptacles and shall not be installed on a circuit that is protected by a GFCI or an AFCI.

## Partition walls

It is a recommended practice that all non-loadbearing partition walls in the lower level be constructed as “floating” partitions. In this type of construction it is recommended that a small space of about 25 mm (1 in.) or more be left at the top or the bottom of each partition wall. The reason for constructing partitions as “floating” is that concrete basement floors can move upward when there is an increase in the moisture content of the soil. The small spaces at the top or bottom of the partition walls will help to absorb any upward movements of the concrete floor. This could prevent any walls constructed above the concrete floor from being pushed up against the floor joists of the main floor.

The minimum size and spacing of studs for a non-load- bearing partition wall are 38 x 38 mm (2 x 2) at 400 mm (16”) spacing. The maximum height permitted for this size of stud is 2.4 m (7’-10”) It is strongly recommended that a larger stud size be used in order to allow the installation of insulation and/or electrical wiring in the wall.

## Insulation and vapour barrier

Foundation walls enclosing a heated space must have their insulation placed from the underside of the sub-floor to a minimum of 2.4 m (7 ft. 10 in.) below the exterior ground level or to the floor of the space, whichever is less.

The minimum thermal resistance of insulation for lower level foundation walls is RSI-2.8 (R-15.9) if you have a heat recovery ventilator (HRV) or RSI-3.46 (R-19.6) if you do not.

Vapour barriers must be installed on the warm side of the insulation.

6 mil polyethylene sheet vapour barriers are the most common and must conform to CAN/CGSB-51.34-M “Vapour Barrier, Polyethylene Sheet for Use in Building Construction” and be labeled as such.

Where foamed plastic is applied on interior walls it must be covered by any of the approved interior finishes listed in the Building Code - drywall, plaster, plywood, hardboard, particle board, waferboard, strandboard, DC315 Paint, or wall tile (plastic or ceramic).

## Ventilation

Ventilation in bathrooms or any rooms containing a toilet must be provided with a fan with a minimum capacity of 25 L/s (50 cfm) mechanically exhausted directly to the outdoors or through a HRV.

Note: Natural ventilation (i.e. an openable window) is considered to be suitable only for summer use and tends not to be used in winter, therefore it does not mitigate the need for mechanical ventilation.

As well, a return air duct tied into the forced air furnace system must be supplied in every bedroom and one centrally located in the living area.

# Plumbing Permit and Code Requirements

A plumbing permit must be obtained whenever a plumbing system is constructed, extended, altered, renewed or repaired, and/or when water supply lines within a building are replaced.

A plumbing permit can be issued only to:

a) a person who holds a Plumbing Journeyman ticket or red seal from Manitoba can apply for a plumbing permit with the R.M of Tache, or
b) the owner of the detached single family dwelling who is also the occupant. The owner must personally complete the work. The permit would be issued to the owner by the R.M of Tache building inspector.

Be aware that an approved back-water valve must be installed to protect all new plumbing branches installed below grade. It is strongly recommended that a sump pit and pump be installed in conjunction with the back-water valve.