



HOUSE ADDITIONS

**A guide to the plans required
when applying for a Building Permit**



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Note:

The R.M of Tache Building By-law is primarily an administrative document that adopts the Manitoba Building Code and related standards to provide constructive requirements. Throughout this booklet the Manitoba Building Code will be referred to as the building code.

House additions vary in size and area and it is beyond the scope of this booklet to deal with every possible situation. The requirements and construction guidelines that follow are provided to assist you in designing and constructing a house addition which will comply with the regulations. If the nature of your project is different than that contained in this booklet and you are not familiar with the regulations which may be applicable, it is recommended that you contact the R.M of Tache building inspector.

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 Building By-law, the By-law and current Manitoba Building Code and Amendments will take precedence.

This booklet is a guide to the type of plans that are required by the R.M of Tache when applying for a building permit to construct a “basic” addition to your house. This booklet does not cover all code requirements. Reference should be made to the R.M of Tache Building By-law and the Manitoba Building Code for the complete set of code requirements.

Permit Requirements

Two sets of plans (one digital and one paper) are required for permit applications. Plan sets should be scaled and must include at least:

- Surveyor’s Building Location Certificate if available, or, alternatively, a well-drawn site plan may suffice
- Building elevations
- Floor plan(s)
- Foundation plan
- Floor framing plan
- Section drawing from foundation through roof

Professional Engineering Requirements

A professional engineer will be required to seal the plans when:

- a) there are any variations from the minimum standards contained within the building code, and/or
- b) the construction involves the use of structural components such as steel or engineered wood beams, ‘I’-joist floor systems, suspended wood floors, tall walls that exceed 11’-10” in height, pre-cast concrete, steel brackets, pile foundations, etc., or
- c) where the designated authority having jurisdiction deems the nature of the work to be overly complex.

Electrical and/or Plumbing Requirements

Separate permits are required for all plumbing work to be competed. For electrical permits please contact Manitoba Hydro. Permits for plumbing work may be applied for by:

- a) the owner of a detached single family dwelling who will also be the occupant and who will be performing their own work, or
- b) a plumbing contractor with a valid journeyman license issued by the Province of Manitoba.

These permits must be obtained prior to starting any of the work. More information about this work can be found in the “Plumbing Installations” brochures available on-line at www.rmtache.ca

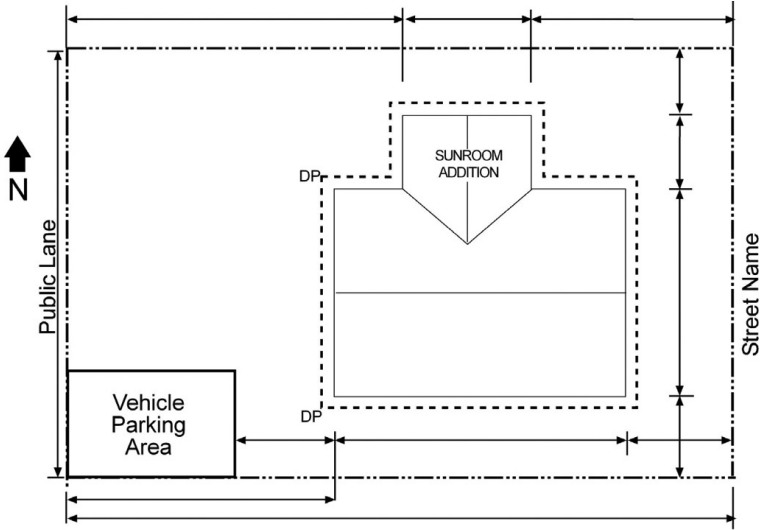
Site Plan Requirements

The site plan should have the following information (see FIGURE 1):

- a) street names, lot dimensions, civic address, legal description, and north arrow;
- b) dimensions from building to property lines (building to building if applicable);
- c) on irregular shaped lots, dimensions from property lines to the closest projections within side yards must be included;
- d) dimensions of all projections such as, alcoves, canopies, eaves,
- e) decks, fireplaces, landings, steps, wing walls, etc.;
- f) locations of downspouts and sump pump discharge (sump pump discharge outlet will not be permitted on the side of the foundation adjacent to a public sidewalk);
- g) the dimensions and locations of existing and proposed accessory structures (examples are detached garages, sheds, air-conditioning units);
- h) the dimension, location and type of surface of existing and proposed approaches, driveways and vehicle parking areas;
- i) construction accesses other than lane;
- j) location and dimensions of registered easements (eg. swales, land drainage sewer/catch basin lead);
- k) paper size should be 8 1/2 x 11 in. or 8 1/2 x 14 in.

Note: The site plan and construction drawings must match.

FIGURE 1 - Typical Site Plan



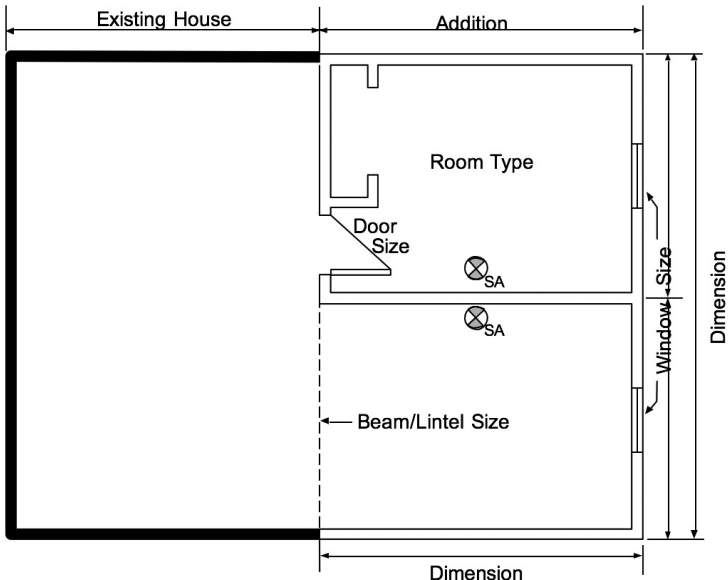
Floor Plan Requirements

This plan must have the following details (see FIGURE 2):

- a) size of addition, dimensioned;
- b) size and type of rooms in addition;
- c) location and sizes of windows, doors, closets, etc.
Note: windows are not permitted in walls that are located less than 1.2 m (4 ft) from the property line when facing neighbouring property.
- d) if there is a fireplace/woodstove, indicate type and location;
- e) size of beam/lintel in wall openings, if required;
- f) wired-in smoke/CO alarm (SA) location - at least one is required if the addition includes a new bedroom.
 (One in the bedroom and one in a location between bedroom and remainder of the building)

***Note:** Each bedroom must have at least one outside window which provides an unobstructed opening of not less than 0.35 sq.m. (3.77 sq. ft.) in area and no dimension less than 380 mm (15 in.).

FIGURE 2 - Typical Floor Plan



Foundation Plan Requirements

Typical house addition foundation plans and details are shown in FIGURES 3 to 7.

The two basic types of foundations you can use when constructing an addition are a full basement and a pile/pier and footing foundation.

1. Full Basement Foundation

- a) If you construct a wood basement it must be designed and sealed by a registered professional engineer, and the engineer must be retained to inspect and certify the installation.
- b) If you construct a concrete basement it must meet the minimum code standards for wall thickness and reinforcement as shown in the following figures.

FIGURE 3 - Typical Full Basement Foundation Plan

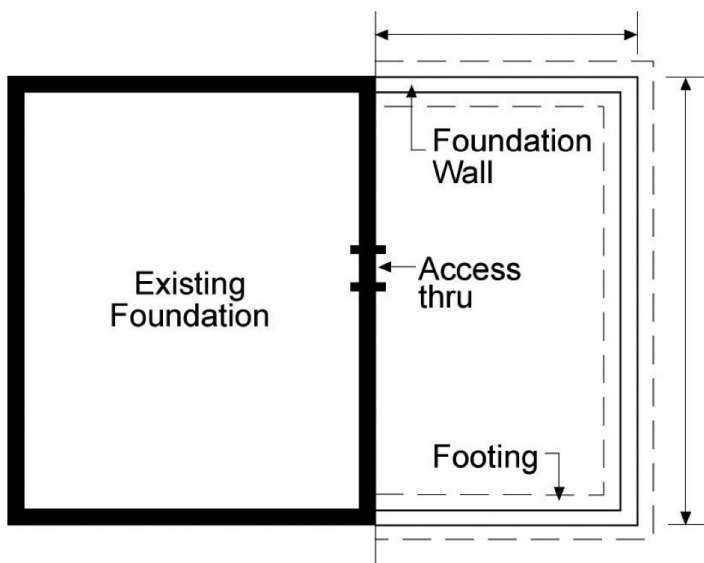
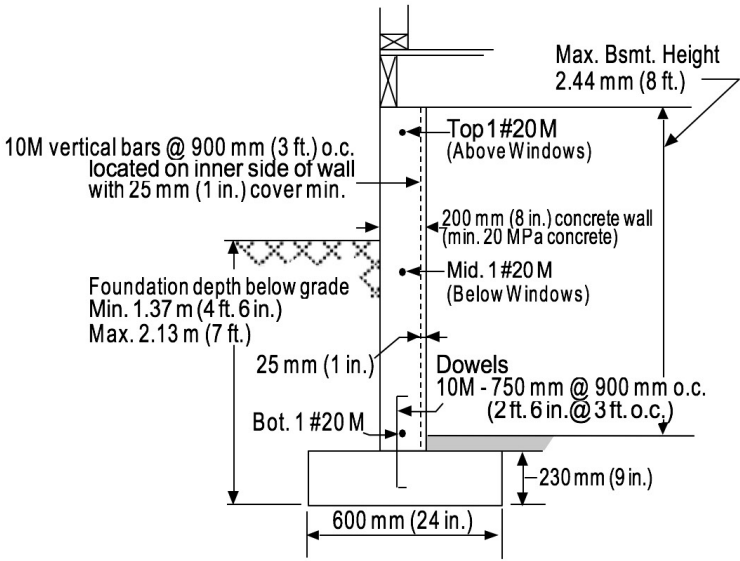
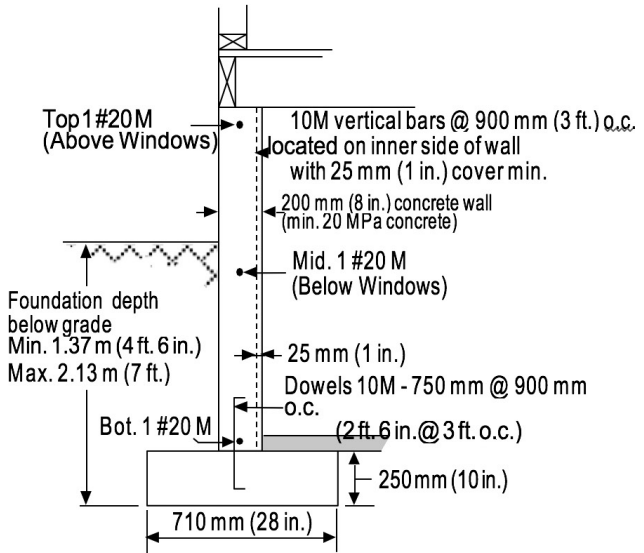


FIGURE 4 - Laterally Supported Foundation Walls

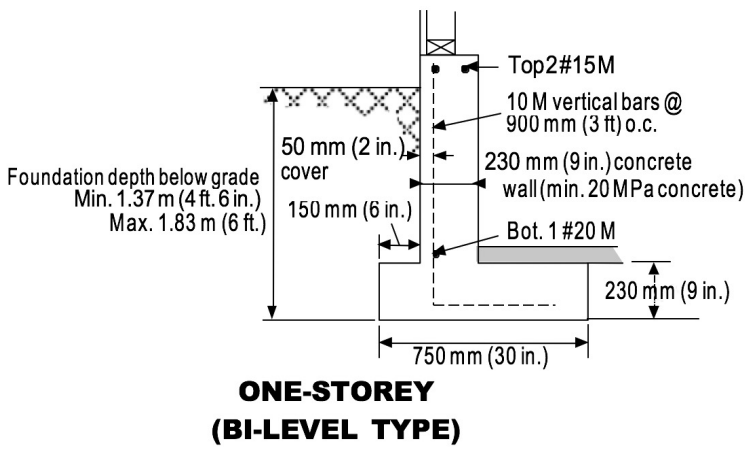


ONE STOREY



TWO STOREY

FIGURE 5 - Laterally Unsupported Foundation Walls



NOTES: (For FIGURES 4 and 5)

1. Length of supported joists shall not exceed 4.9 m (16 ft.).
2. Top of foundation shall be at least 150 mm (6 in.) above finished ground level.
3. Walls over 12 m (40 ft.) in length shall be designed by a registered professional engineer.
4. Maximum window opening size is 1.2 m (4 ft.) and openings not to exceed 25% of the wall length.

Interior Footing Sizes

One-Storey

750 mm x 750 mm x 250 mm deep @ 3.05 m o.c.
(30 in. x 30 in. x 10 in. deep @ 10 ft. o.c.)

Two-Storey

900 mm x 900 mm x 300 mm deep @ 2.74 m o.c.
(36 in. x 36 in. x 12 in. deep @ 9 ft. o.c.)

Pile/Pier and Footing Foundation

- a) If you construct a one (1) storey addition, your foundation must meet the minimum standards as shown; or it must be designed and sealed by a professional engineer.
- b) If you construct a two (2) storey addition, a grade beam and pile foundation must be designed and sealed by a professional engineer.
- c) A wood beam can be used instead of a concrete grade beam. Pile spacing and size would still be the same as illustrated below.

FIGURE 6 - Typical Pile and Grade Beam Foundation Plan

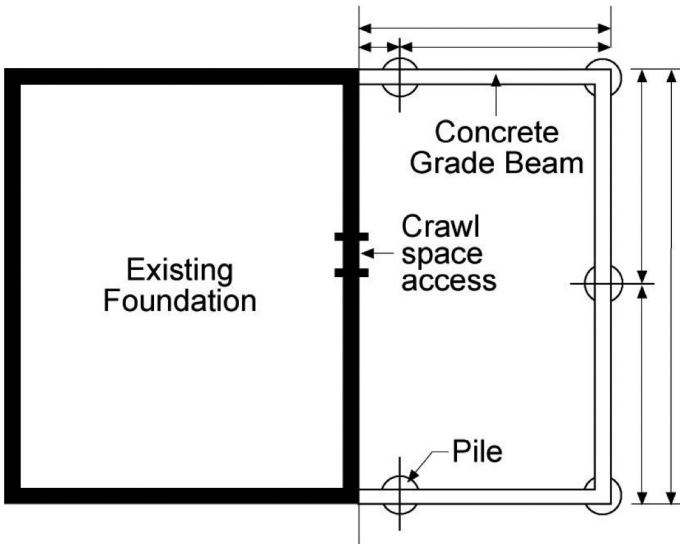
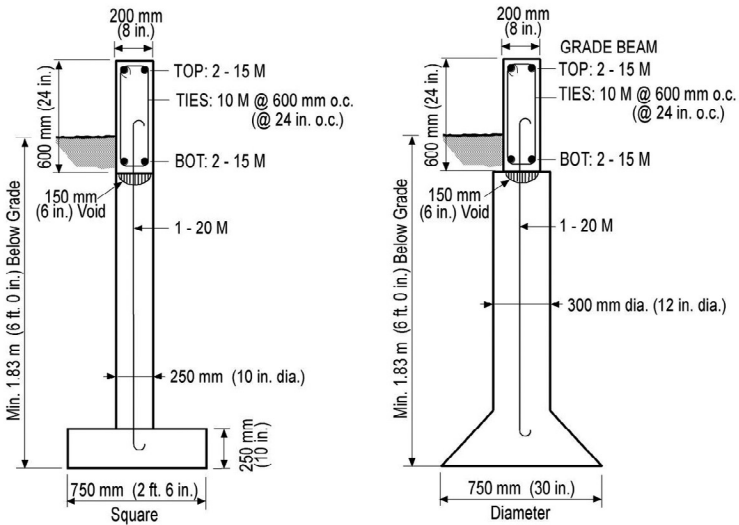


FIGURE 7 - Pile/Pier and Footing Foundation Standards



MAX. SPACING 2.44 m o.c. (8 ft. 0 in. o.c.)

NOTE:

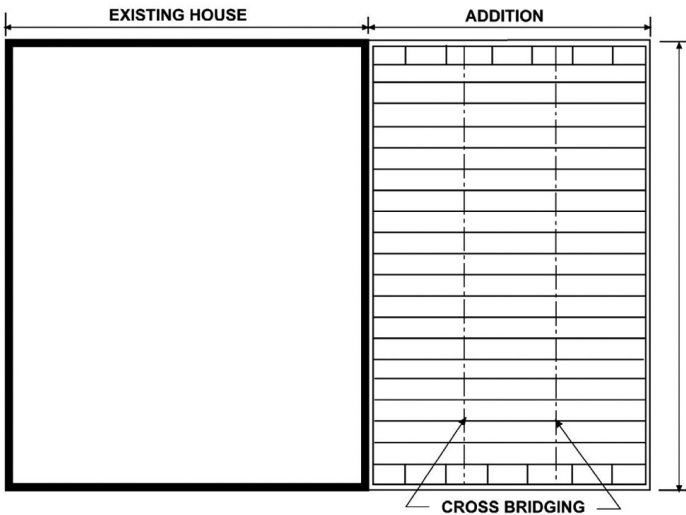
1. Length of supported joists shall not exceed 4.9 m (16 ft.).
2. Top of foundation shall be at least 150 mm (6 in.) above finished ground level.
3. Piles/pier and footing shall be of sulphate resistant concrete.
4. Wood beam may be substituted

Floor Framing Plan Requirements

The details required on this plan are as follows (see FIGURE 8):

- size of addition, dimensioned;
- joist size, grade, spacing and direction;
- bridging and strapping location, blocking;
- location of openings and member sizes;
- beam sizes if not shown on foundation plan;
- pre-manufactured I-joists require submission of final I-joist layout(s)
- complete with engineering.

FIGURE 8 - Typical Floor Framing Plan

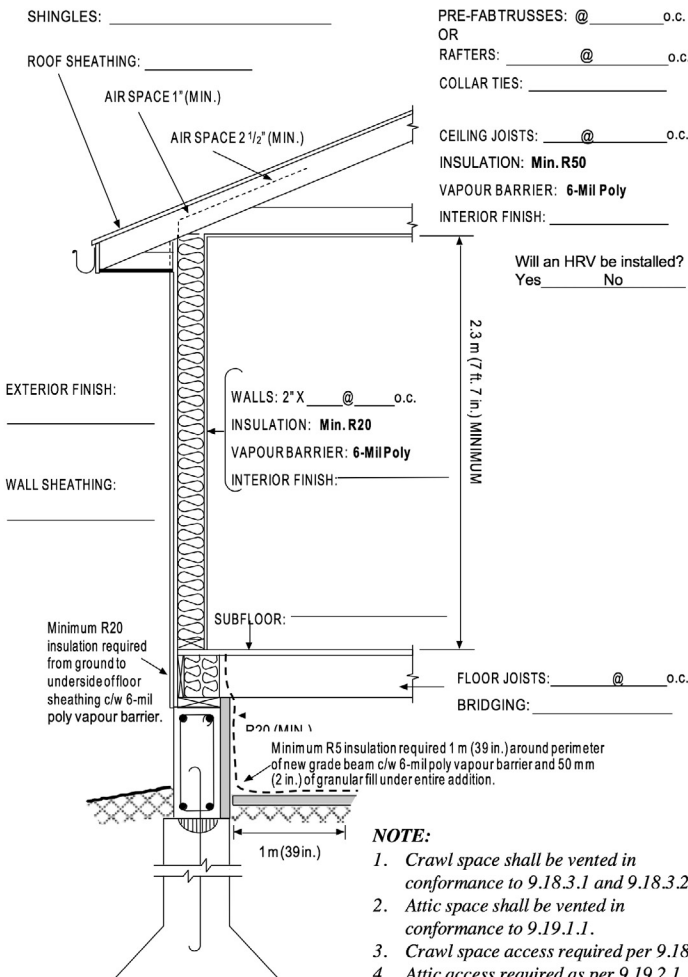


Section Drawing Requirements

The following details should be indicated on the section drawing (see FIGURE 9):

- a) Type and thickness of materials in the roof, walls and floor construction assembly; (see appropriate tables for material selection)
- b) If roof is to be a truss system it shall be prefabricated and designed by a Professional Engineer.

FIGURE 9 - Section Drawing



Insulation Requirements

Insulation values are determined based on whether or not an HRV is being installed (see FIGURE 10).

FIGURE 10 – Insulation Requirements

Minimum Effective Thermal Resistance (RSI-Value)			
	Building Assembly	HRV	No HRV
Above Ground	Ceilings below attics	48.3	59.2
	Vaulted ceilings & flat roofs	28.5	28.5
	Walls	15.9	17.5
	Floors over unheated spaces	28.5	28.5
Below Ground	Foundation walls	15.9	19.6
	Unheated floors below frost line	-	-
	Unheated floors above frost line	11.1	11.1
	Slabs-on-grade with an integral footing	16.1	21.1

NOTE: The values in the above table are cumulative for the entire assembly. Example – a wall assembly that includes 2 X 6 wood studs at 16” on center, R22 batt insulation, 1/2” drywall interior finish, 7/16 OSB exterior sheathing and 5/8” thick stucco has an effective R-Value of 16.5.

Heat Recovery Ventilator (HRV) Requirements

An HRV is required on a house addition permit when:

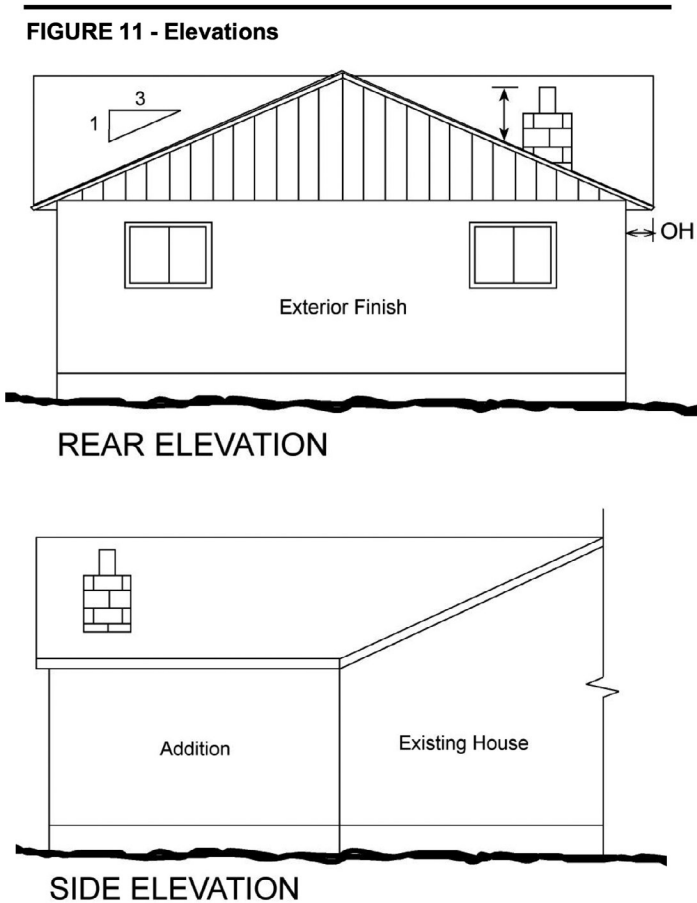
- a secondary suite is being created.
- the renovation and/or addition affects 50% or more of the final total exterior wall area.
- the authority having jurisdiction deems it to be necessary.

Building Elevation Requirements

The information to be indicated on the elevation drawing is as follows (see FIGURE 11):

- a) type of finish siding material;
- b) chimney height, if any;
- c) window and door location;
- d) indicate roof slope and overhang (OH);
- e) guardrail height/picket spacing for any landings.

FIGURE 11 - Elevations



MINIMUM THICKNESS OF ROOF SHEATHING – MBC 9.23.16.7.A					
Maximum Spacing of Supports	Plywood		Waferboard and Strandboard		Lumber
	Edges Supported	Edges Unsupported	Edges Supported	Edges Unsupported	
mm	mm	mm	mm	mm	mm
300	7.5	7.5	9.5	9.5	17.0
400	7.5	9.5	9.5	11.1	17.0
600	9.5	12.5	11.1	12.7	19.0

in.	in.	in.	in.	in.	in.
12	5/16	5/16	3/8	3/8	11/16
16	5/16	3/8	3/8	7/16	11/16
24	3/8	1/2	7/16	1/2	3/4
Column 1	2	3	4	5	6

THICKNESS OF WALL SHEATHING * MBC 9.23.17.2.A				
Type of sheathing	Minimum Thickness			
	Supports @ 16 in. o.c.	Supports @ 24 in. o.c.	Supports @ 400 mm o.c.	Supports @ 600 mm o.c.
	in.	in.	mm	mm
Lumber	11/16	11/16	17.0	17.0
Fibreboard	3/8	7/16	9.5	11.1
Plywood	1/4	5/16	6.0	7.5
Waferboard/ Strandboard	1/4	5/16	6.35	7.9
Column 1	2	3	4	5

THICKNESS OF SUBFLOORING – MBC 9.23.15.5.A			
Maximum Spacing of Supports	Plywood	Waferboard and Strandboard	Lumber
mm	mm	mm	mm
400	15.5	15.9	17.0
500	15.5	15.9	19.0
600	18.5	19.0	19.0

in.	in.	in.	in.
16	5/8	5/8	11/16
20	5/8	5/8	3/4
24	3/4	3/4	3/4
Column 1	2	3	4

CEILING JOIST SPANS – MBC 9.23.4.2.(1): Table A-3

Commercial Designation	Grade	Member Size (in)	Joist Spacing			Member Size (mm)	Joist Spacing		
			12 in.	16 in.	24 in.		300 mm	400 mm	600 mm
			ft.-in.	ft.-in.	ft.-in.		m	m	m
Spruce- Pine- Fir	No.1 and No. 2	2 x 4	10 - 3	9 - 3	8 - 1	38x89	3.11	2.83	2.47
		2 x 6	16 - 1	14 - 7	12 - 9	38x140	4.90	4.45	3.89
		2 x 8	21 - 1	19 - 2	16 - 9	38x184	6.44	5.85	5.11
		2 x 10	27 - 0	24 - 6	21 - 5	38x235	8.22	7.47	6.52
Col. 1	2	3	4	5	6	7	8	9	10

ROOF RAFTER SPANS – MBC 9.23.4.2.(1): Table A-6

Rafter not supporting ceiling
(Design Roof Snow Loads for 1.5 kPa (30 psf))

Rafter not supporting ceiling	Grade	Member Size (in)	Rafter Spacing			Member Size (mm)	Rafter Spacing		
			12 in.	16 in.	24 in.		300 mm	400 mm	600 mm
			ft.-in.	ft.-in.	ft.-in.		m	m	m
Spruce- Pine- Fir	No.1 and No. 2	2 x 4	8 - 11	8 - 1	7 - 1	38x89	2.72	2.47	2.16
		2 x 6	14 - 0	12 - 9	11 - 2	38x140	4.28	3.89	3.40
		2 x 8	18 - 5	16 - 9	14 - 6	38x184	5.62	5.11	4.41
		2 x 10	23 - 7	21 - 5	17 - 8	38x235	7.18	6.52	5.39
Col. 1	2	3	4	5	6	7	8	9	10

ROOF JOIST SPANS – MBC 9.23.4.2.(1): Table A-4

(Design Roof Snow Loads for 1.5 kPa (30 psf))

Rafter not supporting ceiling	Grade	Member Size (in)	Rafter Spacing			Member Size (mm)	Rafter Spacing		
			12 in.	16 in.	24 in.		300 mm	400 mm	600 mm
			ft.-in.	ft.-in.	ft.-in.		m	m	m
Spruce- Pine- Fir	No.1 and No. 2	2 x 4	7 - 1	6 - 5	5 - 7	38x89	2.16	1.96	1.71
		2 x 6	11 - 2	10 - 1	8 - 10	38x140	3.40	3.08	2.69
		2 x 8	14 - 8	13 - 4	11 - 7	38x184	4.46	4.05	3.54
		2 x 10	18 - 8	17 - 0	14 - 10	38x235	5.70	5.18	4.52
Col. 1	2	3	4	5	6	7	8	9	10

NOTE: The tables contained in this brochure are only a guide and do not cover all structural limitations available in the code. A Professional Engineer may be required for any variations from the minimum standards contained within these tables and in the Manitoba Building Code.

BUILT-UP FLOOR BEAM SPANS – MBC 9.23.4.2.(3): Table A-8 Supporting ONE Floor in Houses											
Spruce-Pine-Fir Grade No. 1 & 2											
Size of Beam	Supported Joist Length					Size of Beam	Supported Joist Length				
	8 ft.	10 ft.	12 ft.	14 ft.	16 ft.		2.4 m	3.0 m	3.6 m	4.2 m	4.8 m
	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.		m	m	m	m	m
3-2x8	10 - 7	9 - 5	8 - 8	8 - 0	7 - 6	3-38x184	3.25	2.90	2.65	2.45	2.30
4-2x8	12 - 2	10 - 11	10 - 0	9 - 3	8 - 8	4-38x184	3.75	3.35	3.06	2.83	2.65
3-2x10	12 - 11	11 - 7	10 - 7	9 - 9	9 - 2	3-38x235	3.97	3.55	3.24	3.00	2.81
4-2x10	14 - 11	13 - 4	12 - 2	11 - 3	10 - 7	4-38x235	4.59	4.10	3.74	3.47	3.24
3-2x12	15 - 0	13 - 5	12 - 3	11 - 4	10 - 7	3-38x286	4.61	4.12	3.76	3.48	3.26
4-2x12	17 - 4	15 - 6	14 - 2	13 - 1	12 - 3	4-38x286	5.32	4.76	4.34	4.02	3.76
1	2	3	4	5	6	7	8	9	10	11	12

BUILT-UP FLOOR BEAM SPANS – MBC 9.23.4.2.(3): Table A-8 Supporting TWO Floors in Houses											
Spruce-Pine-Fir Grade No. 1 & 2											
Size of Beam	Supported Joist Length					Size of Beam	Supported Joist Length				
	8 ft.	10 ft.	12 ft.	14 ft.	16 ft.		2.4 m	3.0 m	3.6 m	4.2 m	4.8 m
	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.		m	m	m	m	m
3-2x8	8 - 0	7 - 2	6 - 7	6 - 1	5 - 8	3-38x184	2.46	2.20	2.01	1.86	1.74
4-2x8	9 - 3	8 - 3	7 - 7	7 - 0	6 - 7	4-38x184	2.85	2.55	2.32	2.15	2.01
3-2x10	9 - 10	8 - 9	8 - 0	7 - 5	6 - 10	3-38x235	3.01	2.70	2.46	2.28	2.11
4-2x10	11 - 4	10 - 2	9 - 3	8 - 7	8 - 0	4-38x235	3.48	3.11	2.84	2.63	2.46
3-2x12	11 - 5	10 - 2	9 - 4	8 - 7	7 - 9	3-38x286	3.50	3.13	2.85	2.64	2.38
4-2x12	13 - 2	11 - 9	10 - 9	9 - 11	9 - 4	4-38x286	4.04	3.61	3.30	3.05	2.85
1	2	3	4	5	6	7	8	9	10	11	12

FLOOR JOIST SPANS – 9.23.4.2.(1): Table A-1

Commercial Designation	Grade	Member Size (in)	Joist Spacing with Strapping			Joist Spacing with Bridging			Joist Spacing with Strapping & Bridging		
			12 in.	16 in.	24 in.	12 in.	16 in.	24 in.	12 in.	16 in.	24 in.
			ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.
Spruce - Pine - Fir	No.1 and No. 2	(in.)	12 in.	16 in.	24 in.	12 in.	16 in.	24 in.	12 in.	16 in.	24 in.
			ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.	ft.-in.
		2 x 4	6 - 1	5 - 8	5 - 2	6 - 6	5 - 11	5 - 2	6 - 6	5 - 11	5 - 2
		2 x 6	9 - 7	8 - 11	8 - 2	10 - 4	9 - 4	8 - 2	10 - 4	9 - 4	8 - 2
		2 x 8	11 - 7	11 - 0	10 - 6	12 - 5	11 - 9	10 - 9	13 - 1	12 - 2	10 - 9
		2 x 10	13 - 8	13 - 0	12 - 4	14 - 6	13 - 8	12 - 10	15 - 1	14 - 1	13 - 2
		2 x 12	15 - 7	14 - 10	14 - 1	16 - 4	15 - 5	14 - 6	17 - 0	15 - 10	14 - 9
		(mm)	300mm	400mm	600mm	300mm	400mm	600mm	300mm	400mm	600mm
			m	m	m	m	m	m	m	m	m
		38x89	1.86	1.72	1.58	1.99	1.81	1.58	1.99	1.81	1.58
		38x140	2.92	2.71	2.49	3.14	2.85	2.49	3.14	2.85	2.49
		38x184	3.54	3.36	3.20	3.79	3.57	3.27	3.99	3.72	3.27
		38x235	4.17	3.96	3.77	4.41	4.16	3.92	4.61	4.30	4.01
		38x286	4.75	4.52	4.30	4.99	4.70	4.42	5.17	4.82	4.50
		Col. 1	2	3	4	5	6	7	8	9	10