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Eastern Interlake Planning District

Serving the RM of Gimli, RM of Bifrost-Riverton, Town of Arborg and the Town of Winnipeg Beach

Garages

Detached & Attached

Construction requirements for garages and storage sheds for residential use.

February 2024

The Manitoba Building Code and related standards provide the construction requirements. Throughout this booklet, the Manitoba Building Code will be referred to as the MBC.

Documentation required for a Building Permit:

- Completed Building Permit Application on Cloudpermit; link can be found on www.interlakeplanning.com. All permit applications are done electronically.
- Completed "Center Tear-Out Section" for a simple rectangular detached garage or accessory building (*found in the centre of this booklet), OR a complete set of drawings for more complex buildings as determined by the Building Inspector, must be in PDF form.
- Surveyor's Building Location Certificate or a well drawn site plan conforming to Municipal Zoning By-Laws and Development Agreement if applicable, showing the location of the new building and the location of all existing structures on the site.
- Lot Grade Permit if applicable.

*** Note**: This booklet contains a center tear-out page that includes a wall foundation cross-section that is designed to be filled out by the Permit Applicant. The reverse side of the tear out page has the thickened edge slab selections for the foundation, as well as the roof style selections. The completed tear-out page and a well drawn site plan are to be submitted on Cloudpermit. This information will assist in the issuance of the Building Permit.

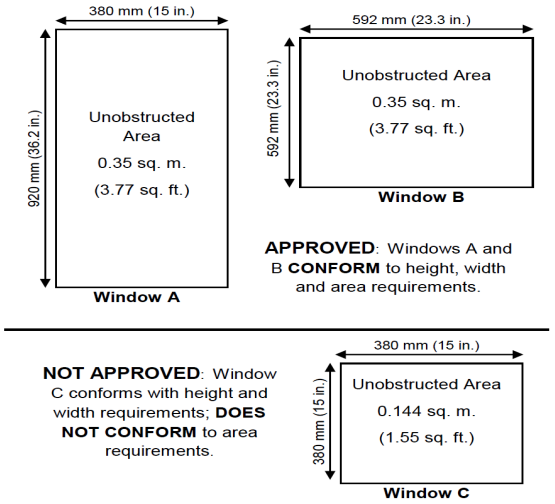
Life Safety Items

When a building is altered, repaired or added to in excess of 10 square meters (107.6 sq. ft.), the degree of safety of the addition and the existing building shall conform to the current Manitoba Building Code. This would include the addition of an attached garage to an existing dwelling and/or creating living space above an existing garage.

For residential buildings, the most common life safety items that require upgrading are:

- **egress requirements for bedroom windows (Figure 1)**
- **hard wired smoke alarms**
- **carbon monoxide alarms**
- **stairs and landings**
- **guards and railings on stairs and landings**
- **ventilation and exhaust systems**
- **existing windows in excess of allowable openings**

FIGURE 1:
Minimum Bedroom Window Egress



Living Space Attached to Garage– Fig. 2

The common wall between a garage and dwelling requires 1 layer 5/8" Type X. The ceiling requires 2 layers of 5/8" Type X or a continuous sheeting on the common wall up to the roof in the attic space.

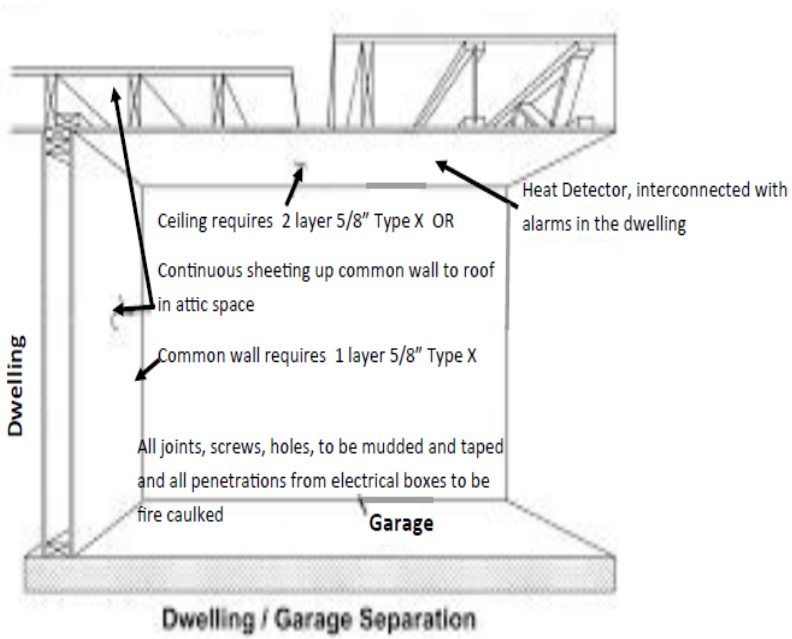
All joints, screws, and holes must be mudded and taped. All penetrations such as electrical boxes must be fire caulked.

Common door between garage and house must be self-closing, weather stripped, and contain no glazing (ie. Windows).

A heat detector is required to be installed in the garage and be interconnected to the smoke/carbon monoxide alarms in the dwelling.

Fig. 2

Living Space Beside Garage



Is a building permit required to build a detached garage or storage shed?
Yes! To insure that the Municipal Zoning By-Laws and MBC requirements are complied with, a building permit is required for all detached garages, storage sheds and accessory buildings serving a residential dwelling. This permit may be obtained by submitting the required information to the Eastern Interlake Planning District office.

Detached garages and storage sheds vary in size and area and it is beyond the scope of this booklet to deal with every possible situation. The zoning By-Laws for your area and the construction guidelines that follow are provided to assist you in designing and constructing a detached garage or storage shed which will comply with the regulations. If the nature of your project is different then that contained in this booklet and you are not familiar with the regulations which may be applicable, it is recommended that you contact the Eastern Interlake Planning District office for more information

Do I need a building permit if I'm only doing a concrete slab?
A concrete slab that will not be used as a foundation for a future garage or accessory building does not require a permit. If however future plans are to construct a building on the slab, slab construction has to meet all applicable Manitoba Building Code and Municipal Zoning By-Law regulations such as:

a) allowable size
b) appropriate thickness and reinforcing
c) allowable distances from property lines and the dwelling
d) subject to an inspection prior to pouring the concrete.

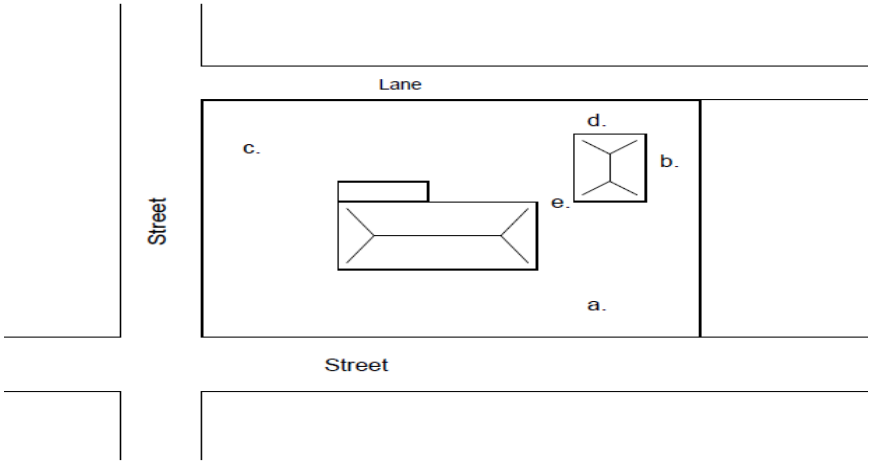
Does a Carport require a Building Permit?
Yes. A building permit is required for the construction of a carport. If the carport stands alone or is attached to a detached garage, then the Zoning and Building Code regulations in this booklet apply.
If the carport is to be attached to the house or to an attached garage, then it must comply with the regulations for house additions.

How close can I build to the property lines and to the house or other buildings?
The required setbacks for a garage or accessory building vary depending on where it is located, where the streets are, and which way the garage door faces. Municipal By-Laws dictate the setbacks from the property lines and the distance between the house and garage or other buildings. The MBC sets minimum distances (spatial separation) to property lines and between buildings.
FIGURE 1 - Property Line Setbacks provides a general guideline for location estimates.

Note: The distance from the building to the property lines places limitations on the area of unprotected openings (windows, doors, vents, etc.) on exterior walls. Table 9.10.14.4. of the MBC sets the limits to the percentage of openings allowed. At less than 1.2m (4 ft.) the percentage of allowable openings is 0%. It then gradually increases to 100% at 8m (26 ft.).

FIGURE 1 - Property Line Setbacks

a. Front Yard
b. Interior Side Yard
c. Corner Side Yard
d. Rear Yard
e. Spatial Separation



Do these setbacks include the overhang?
In the required setbacks from the property lines to the wall of the garage, shed or carport posts, a 150 mm (6 in.) overhang is permitted. (Eaves trough may be added to the 150 mm (6 in.) overhang.)

Living Space Above a Garage-Fig. 1

The ceiling in a garage with a living space above requires 2 layers of 5/8" Type X drywall.

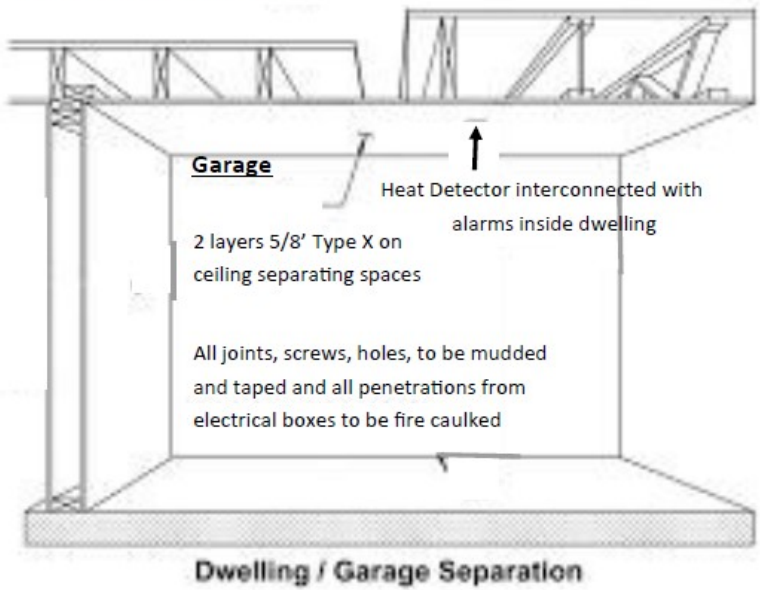
An interior staircase requires a self-closing, weather stripped, and no glazing between the garage and living space. If the door is located at the bottom of the stairs, it must be located between the garage and vestibule, so that there is access directly outside from the living space stairs. If the door is located at the top, a separate door leading directly outside must be provided.
The drywall along the staircase, separating the spaces must be 2 layers of 5/8" Type X.

All joints in the drywall, all screws and holes must be mudded and taped. All penetrations from electrical boxes to be fire caulked.

A heat detector is required in the garage and must be interconnected with the smoke/carbon monoxide alarms in the dwelling.

Fig. 1

Living Space Above Garage



Attached Garages- either attached to a house or living space above garage

Does the foundation have to be engineered?
Living Space above a garage or attached to the side of a dwelling shall have a foundation designed/sealed by a structural Engineer.

Are there specific energy code requirements?
Yes, Energy Code requirements for R-Values shall be met for the wall, floor, and roof assemblies.

What Heating & Ventilation is required?
Heating and Ventilation shall follow all code requirements including mandatory HRV installation. (some exceptions for seasonally occupied dwellings)

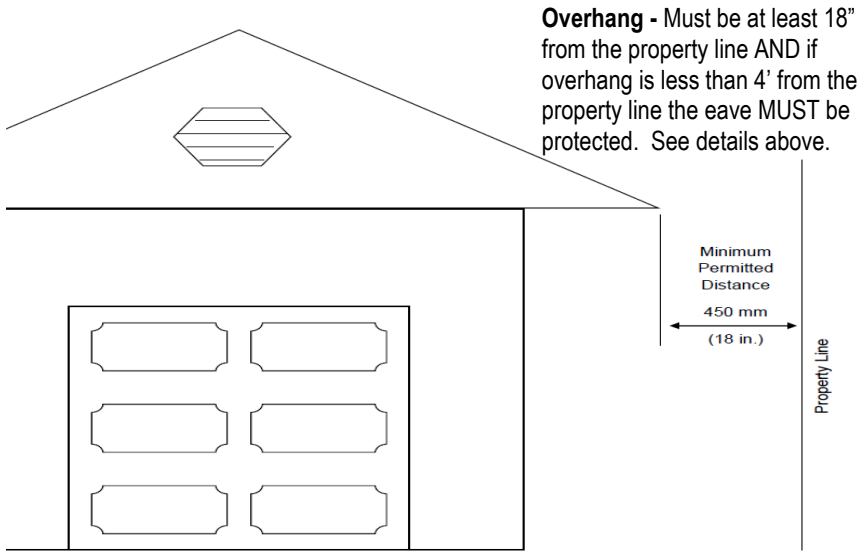
Are alarms or detectors required to be installed?
Yes! A heat detector is required to be installed in the garage and be interconnected with the smoke alarms/carbon monoxide detectors in the home.

Is there a specific type of door that is required between a garage and house?
Yes! The common door between a garage and living space shall be self-closing, weather stripped, and cannot contain any glazing inserts. A regular exterior door with glass is not permitted.

Note: It should be recognized that if a larger overhang is desired then the garage or storage shed wall must be set back further from the property line. A clear separation of 450 mm (18 in.) from the property line to the eaves must always be maintained as shown in FIGURE 2.
Where the roof soffit is less than 1.2m (4 ft.) from the property line the soffit is required to be protected. Vent soffit can not be used. The soffit must be protected with one of the following:

1. minimum .38mm thick steel sheet;
2. unvented aluminum conforming to CAN/CGSB – 93.2m;
3. minimum 12.7mm thick gypsum soffit board or ceiling board;
4. minimum 11mm plywood;
5. minimum 12.5mm OSB or wafer board; or
6. minimum 11mm thick lumber.

FIGURE 2 - Setback From Overhang



What is the maximum height and size allowable?
The maximum height and size allowable (total site coverage) for a garage or accessory building is determined by your local Municipal Zoning By-Laws. To obtain this information please contact the Eastern Interlake Planning District office.

If I cannot meet these requirements, what are my alternatives?
To vary these requirements you must apply for a zoning variance. This application can be made at the Eastern Interlake Planning District office.

What type of foundation is required for a one-storey wood frame detached garage or accessory building?

For a building area of less than 50 sq. m. (538 sq. ft.), there are no special Building Code requirements for the foundation. However, the structure will have to be anchored down to prevent uplift by the wind. If a concrete slab is used, it is recommended that the slab be not less than 100 mm (4 in.) thick with the edge thickened to 200 mm (8 in.) for a 300 mm (12 in.) width. Reinforcement should consist of two 15M rebar around the perimeter of the foundation and 19m rebar @ 450mm o.c. (18 in. o.c.) both ways or 150 x 150-P18/P18 wire mesh (6 x 6) - 6/6 wire mesh) as shown in FIGURE 3, A.

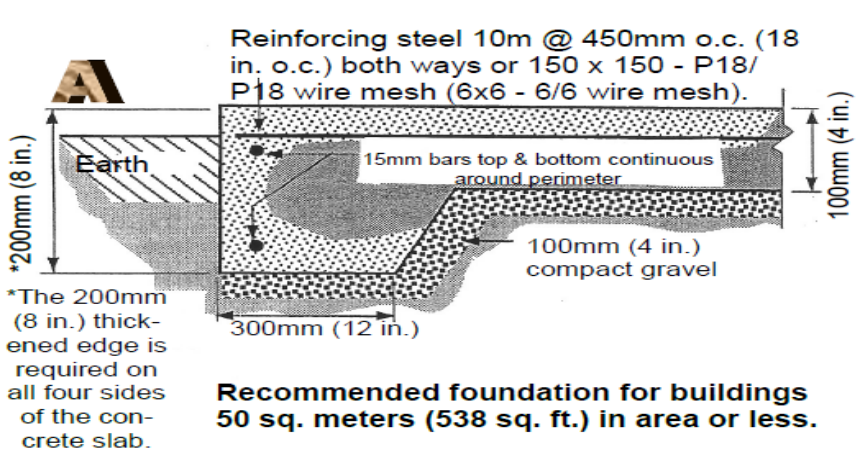
Concrete used for garage and carport floors shall have a compressive strength of 32 MPA after 28 days with air entrainment of 5 to 8%. For site-batched concrete the ratio of water to cementing materials shall not exceed 0.45 for garage and carport floors. For floors other than those in garage and carports, concrete, with a compressive strength of 20 MPA in 28 days, with a water to cementing ratio of 0.65.

For a building area greater than 50 sq. m (538 sq. ft.) whose load bearing walls support a roof that is between 7.3m and 9.1m (24 ft. to 30 ft.), the required foundation must be as shown in FIGURE 3, B or designed by a Professional Engineer registered in the Province of Manitoba.

For a building whose load bearing walls support a roof greater that 9.1m (30 ft.) the foundation must be designed by a Professional Engineer registered in the Province of Manitoba as shown in FIGURE 3, C.

Note: Thickened edge slabs are susceptible to movement from frost action and changing moisture conditions. The reinforcing steel will not prevent the slab from cracking but will help keep the slab together. Also for dry floors in your garage a moisture barrier consisting of 6 mil poly under the thickened edge slab is strongly recommended. For all other buildings it is required.

FIGURE 3 - Foundation Plans for Detached Accessory Buildings



Recommended foundation for buildings 50 sq. meters (538 sq. ft.) in area or less.

******Permit card must be posted to avoid a fine ******

Other Contacts:

The approval of a permit from our office does not relieve an applicant from meeting additional regulations or restrictions from other Government Bodies or agencies. Therefore please contact the following departments as required.

- If you intend to alter or change the way surface water is dispersed or drains from your property, contact your local Conservation Office and your Municipal office.
- If you need to know the current elevation of your land, in order to meet Zoning By-law construction elevations, contact Water Stewardship Hydrologic Forecasting and Water Management.
- If you own property adjacent to a Provincial Road or Highway, contact Manitoba Infrastructure and Transportation.
- If you have questions regarding Septic Fields and Holding Tanks, contact the Department of Environment.
- If you have questions regarding Wells or Provincial Drainage Systems, contact Water Stewardship.
- Before you dig or if you require an electrical permit, contact Manitoba Hydro.
- If you have questions regarding Sub-Divisions in our District, contact the Department of Municipal Government, c/o the Community & Regional Planning Branch in Selkirk, MB.
- If you require information about Public Reserve, Culvert/ Driveway Installations, Sewer and Water Hook-up, Lot grade permits (lot grade applicable in the RM of Gimli and Town of Winnipeg Beach) contact your Local Municipal Office at:

RM of Gimli: 204-642-6650 gimli@rmgimli.com
RM of Bifrost-Riverton: 204-376-2391 bifrost@mts.net
Town of Arborg: 204-376-2647 townofarborg@mts.net
Town of Winnipeg Beach: 204-389-2698 info@winnipegbeach.ca

Are there any other Building Code requirements?
Yes, there are various other requirements concerning framing, sheathing materials, sheathing paper, flashing, siding, shingling and stucco application, etc. Most of these aspects of construction are dealt with in the previously mentioned book available from Canada Mortgage and Housing.

TABLE 9 - Wood Lintel Substitutions

From Table	Structural Composite Lumber (SCL)
3 - 2 x 8	2-1 ¾ x 7 ¼
2 - 2 x 10	2-1 ¾ x 7 ¼
3 - 2 x 10	2-1 ¾ x 9 ½
2 - 2 x 12	2-1 ¾ x 9 ½
3 - 2 x 12	3-1 ¾ x 9 ½
4 - 2 x 12	2-1 ¾ x 11 ⅞
4 - 2 x 14	3-1 ¾ x 11 ⅞

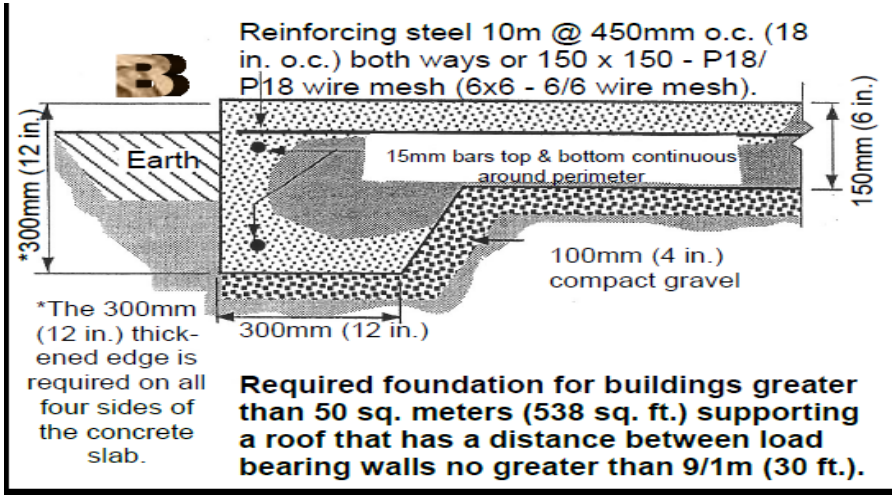
Who enforces all of these requirements?
The Eastern Interlake Planning District is responsible for monitoring construction for compliance with the Building Code and By-Laws. This monitoring is carried out by means of a permit approval process and site inspections.
The ultimate responsibility for compliance rests with the owner and contractor.

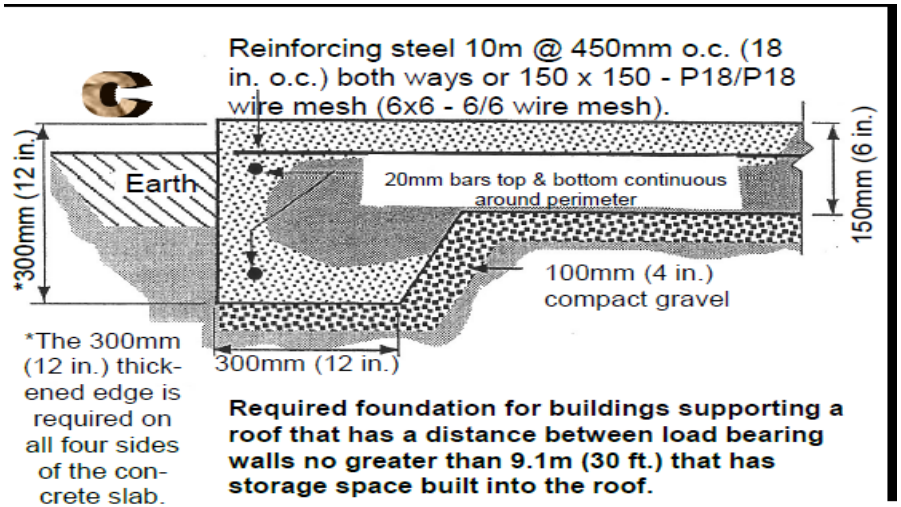
Is there any way that compliance with a certain aspect of the Building Code can be waived?
The Eastern Interlake Planning District does not have the authority to waive the requirements but it does have the authority to accept equivalents which meet the intent of the Building Code. If you feel you can satisfy a Building Code requirement by using an equivalent building material or construction method, contact the Building Inspector.

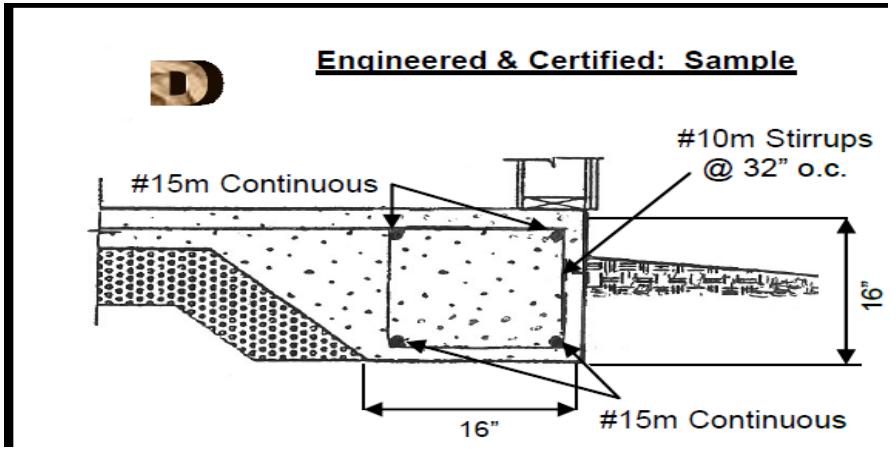
The Following Inspections are Required

- Footing Forming / Piles / Piers / Thickened Edge Slab and Forming
- Framing

The Contractor, Applicant and Owner are <u>co-responsible</u> for notifying the E.I.P.D. office when inspections are required.







Note: Reinforcing steel is to be properly tied and supported by proper accessories such as chairs, concrete bricks, etc. to provide the minimum clear cover for reinforcement in cast in place concrete. Do not use wood or clay bricks to support reinforcing steel. Lifting reinforcing steel into position while placing concrete is not allowed.

Bottom Plate: If the distance from the surface of the slab to the finished ground line is less than 300 mm (6 in.), the bottom plate shall be separated from the concrete by damp proofing material or pressure treated wood. The bottom plate is to be held in place by anchor bolts spaced a minimum of 1200 mm (48 in.).

For a garage, shed, or carport addition to an existing accessory structure where the total area of the existing structure plus the addition is more than 50 sq. m (538 sq. ft.) the design of the foundation (both existing and addition) must be made to comply with the foundation requirements previously shown or alternatively the foundation must be designed by a Professional Engineer registered in the Province of Manitoba. If the load bearing walls are to support a roof that exceeds 9.1m (30 ft.) the foundation must be designed by a Professional Engineer registered in the Province of Manitoba. Example shown in FIGURE 3, D.

Recommendations for insulating concrete floors in heated buildings and concrete floors and thickened edge slabs incorporating heating equipment:
Garages and accessory buildings to be heated should have insulation placed on the exterior vertical edge of the thickened edge slab or foundation wall and then for a distance of not less than 2 ft. around the perimeter of the adjoining exterior ground.
Floors on ground that incorporate heating equipment (radiant in floor hydronic heat piping systems) embedded in the concrete should be insulated under their full bottom surface (See FIGURE 4).
If your intentions are to heat a portion of a building with a concrete floor, there is a risk that frost lift to the unheated portion that can cause damage to the concrete floor and building. The design of the structure should take this into consideration to minimize damage from frost lift.

Do I have to fire-rate the exterior walls?
You must fire-rate only those walls which are closer than 600mm (24 in.) to any property line which faces an adjoining property. If the wall faces a street or a public lane this requirement does not apply.
Fire-rating of walls can be achieved by applying a layer of 12.7 mm (1/2 in.) fire-rated (Type X) drywall or equivalent to the inside face of the wall.

ROOF RAFTER SIZE SELECTION
Example: In order to select the correct rafter size for a 6.72m x 6.72m (22 ft. x 22 ft.) detached garage or storage shed with a gable roof having a slope of 1 in 3 or greater, and with spruce rafters (without collar ties) spaced 600mm (24 in.) apart, we will proceed as follows.
First, we must know the horizontal distance from the wall to the peak of the roof. In this example the distance is 6.72m (22 ft.) divided by 2 - 3.36m (11 ft.), and is called the rafter span.
Next, keeping in mind that 3.36m (11 ft.) is the required rafter span distance, we look to TABLE 6 in the Spruce-Pine-Fir section for a 600mm (24 in.) rafter spacing. We are looking here for a span distance that equals or exceeds 3.36m (11 ft.). We find in the table a span that meets our requirements and it has a figure of 3.40m (11 ft. 2 in.). We now look across to find the member size that is necessary to obtain this span. It is a 38mm x 140mm (2 in. x 6 in.) rafter. This rafter size is the minimum size of rafter required for the span of 3.36m (11 ft.) for this particular gable style roof.
If collar ties are permitted and are used, the required span would be less than 3.36m (11 ft.) and a smaller member size could be looked up in the table.

TABLE 5 - Roof Rafter Spans - Rafter NOT SUPPORTING Ceiling

Commercial Designation	Grade	Member Size (in)	Rafter Spacing			Member Size (mm)	Rafter Spacing		
			12 in	16 in	24 in		300mm	400mm	600mm
			ft-in	ft-in	ft-in		m	m	m
Douglas Fir - Larch	No. 1 and No. 2	2x4 2x6 2x8 2x10 2x12	9-4 14-9 18-10 23-0 26-9	8-6 13-5 16-4 19-11 23-2	7-5 10-11 13-4 16-3 18-11	38x89 38x140 38x184 38x235 38x286	2.86 4.49 5.74 7.02 8.14	2.59 4.08 4.97 6.08 7.05	2.27 3.34 4.06 4.96 5.76
Spruce - Pine - Fir	No. 1 and No. 2	2x4 2x6 2x8 2x10 2x12	8-11 14-0 18-5 23-7 28-8	8-1 12-9 16-9 21-5 25-2	7-1 11-2 14-6 17-8 20-6	38x89 38x140 38x184 38x235 38x286	2.72 4.28 5.62 7.18 8.74	2.47 3.89 5.11 6.52 7.66	2.16 3.40 4.41 5.39 6.25
Column 1	2	3	4	5	6	7	8	9	10

Notes to TABLE 5:
This table applies to roofs with a slope of 1 in 3 or greater. Roof slopes of less than 1 in 3 are subject to different loading conditions, e.g. adequate ridge support must be provided.

3. Framing the roof with pre-manufactured trusses. There are several truss manufacturers and suppliers listed in the Yellow Pages under both LUMBER - RETAIL and TRUSSES. These firms can provide detailed information regarding the proper installation of their products. Note that when using trusses or rafters at 600mm (24 in.) spacing with panel-type roof sheathing of less than 12.7mm (½ in.) thickness, support must be provided to all edges of each roof sheathing panel including those that meet at the ridge. This can be accomplished with the use of 'H' clips (see FIGURE 11) and / or solid blocking.

FIGURE 10 - Roof Rafter and Collar Ties for Gable Roof

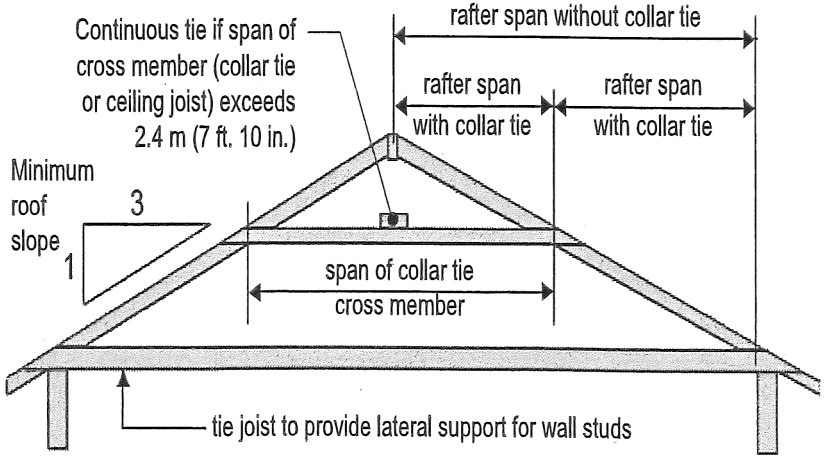


FIGURE 11 - "H" Clip Detail

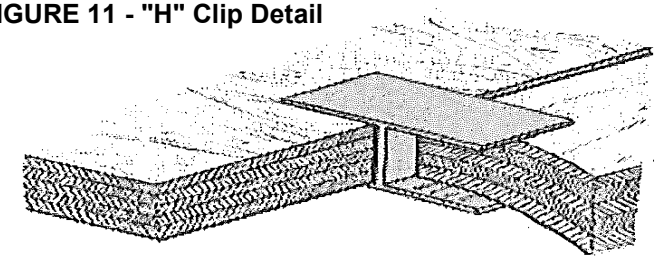
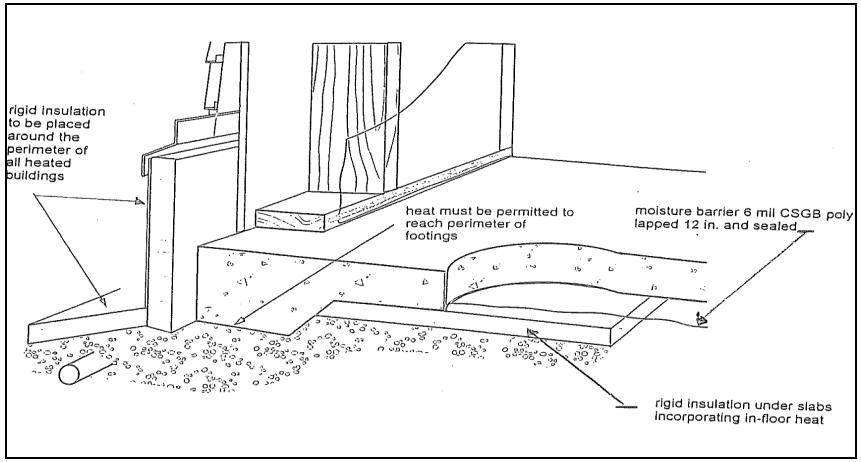


FIGURE 4: Insulating recommendations for floors on ground to be heated



Can I have windows in the walls?
Windows and other openings, including doors, are only permitted in a wall if the wall is 1.2m (4ft.) or more from the property line of an adjoining property. If the wall faces a street or a public lane, this requirement does not apply. There are no distance restrictions between a window in a detached garage and a single family dwelling on the same lot, other than the minimum yard requirements in the Zoning By-Laws.
The above requirements for fire rating of walls and placement of windows or other openings in these walls are designed to limit fire spread between buildings on adjoining properties.

What types of framing methods are acceptable?
Framing methods must be in accordance with good construction practice. A detailed discussion of this aspect of construction is beyond the scope of this publication. However, some common framing details are indicated on the following pages. Refer to FIGURES 4, 5 & 6, and TABLES 1 & 2.

For more detailed information refer to the “Canadian Wood Frame House Construction” book from Canada Mortgage and Housing Corporation (CMHC). This publication is an excellent guide to good framing methods and construction techniques. It also includes information for wall and roof sheathing requirements, exterior cladding application, roof coverings, etc.

TABLE 1 - Wood Lintel Spans for Windows and Man Doors

Size of Lintels (headers)	Maximum Allowable Spans
2 - 38 x 89 mm (2 - 2 x 4)	1.12 m (3 ft. 8 in.)
2 - 38 x 140 mm (2 - 2 x 6)	1.68 m (5 ft. 6 in.)
2 - 38 x 184 mm (2 - 2 x 8)	2.24 m (7 ft. 4 in.)
2 - 38 x 235 mm (2 - 2 x 10)	2.79 m (9 ft. 2 in.)
2 - 38 x 286 mm (2 - 2 x 12)	3.35 m (11 ft. 0 in.)

Notes to TABLE 1:

1. This table is for use with Spruce-Pine-Fir lumber grades 1 & 2.
2. Built-up lintels must be constructed of full length members. No splicing of members is permitted between supports.
3. This table for maximum supported truss length of 10 feet. For greater supported length see TABLE 4, page 15.

TABLE 2 - Size and Spacing of Studs

Type of Wall	Supported Loads (including dead loads)	Minimum Stud Size	Maximum Stud Spacing	Maximum Un-supported Height
Exterior	Roof with or without attic storage.	38 x 64 mm (2 x 3)	400 mm (16 in.)	2.4 m (7 ft. 10 in.)
Exterior	Roof with or without attic storage.	38 x 89 mm (2 x 4)	600 mm (24 in.)	3.0 m (9 ft. 10 in.)

Note to TABLE 2:
This table is for use with all species of lumber and minimum grades of standard, stud, and No. 2.

What roof framing choices are there?

In wood framing, there are basically three methods for framing roofs. They are as follows:

1. Framing the roof with individual pieces of lumber (2x4's, 2x6's, etc.). This is commonly known as **stick framing**. FIGURE 10 shows a typical cross section of a gable roof and TABLE 5 indicates maximum rafter spans for various species and sizes of rafters. Note that FIGURE 10 makes use of collar ties as a means of reducing a full rafter span into two smaller spans. Collar ties can only be used in this fashion when the roof slope is 1 in 3 or greater. If you are framing a roof containing hip or valley rafters, the hip and/or valley rafters must not be less than 50 mm (2 in.) greater in depth then the common rafters and not less than 38mm (1½ in.) in thickness. Refer to the previously mentioned book available from Canada Mortgage and Housing for further information on roof framing.
2. Framing the roof with "home made" trusses. This is **not** recommended for complicated roofs having complex angles or roofs having hips and/or valley rafters. For simple gable roofs, wood trusses must be constructed in accordance with an accepted truss design. Some accepted truss designs are illustrated in the book available from Canada Mortgage and Housing. Alternatively, the truss must be designed by a Professional Engineer registered in the Province of Manitoba. Note that the use of gang nailers (metal plates) in manufacturing "home made" trusses is not permitted unless extensive engineering involvement and testing is carried out and the supporting documentation is submitted and found acceptable. These types of fasteners are only intended for use under the design and quality control of a truss manufacturer. Truss designs vary depending upon spans, roof slope, etc. Before manufacturing your own trusses, obtain an accepted truss design drawing showing the span, the size of the members, the size and thickness of the plywood gussets, and the nailing patterns. Do not copy truss designs used on other buildings. These designs may be inadequate for your application.

TABLE 4 - Wood Lintels (headers) - SUPPORTING Roof Loads

	Supported Length (see note 3 below)				
Width of opening (Lintel span)	2.44 m (8 ft.)	3.05 m (10 ft.)	3.66 m (12 ft.)	4.27 m (14 ft.)	4.88 m (16 ft.)
2.44 m (8 ft.)	3-38x184mm (3-2x8)	3-38x184mm (3-2x8)	3-38x184mm (3-2x8)	3-38x184mm (3-2x8)	3-38x235mm (3-2x10)
2.74 m (9 ft.)	3-38x184mm (3-2x8)	3-38x184mm (3-2x8)	3-38x184mm (3-2x8)	3-38x235mm (3-2x10)	3-38x235mm (3-2x10)
3.05 m (10 ft.)	3-38x184mm (3-2x8)	3-38x235mm (3-2x10)	3-38x235mm (3-2x10)	3-38x235mm (3-2x10)	3-38x286mm (3-2x12)
3.66 m (12 ft.)	3-38x235mm (3-2x10)	3-38x235mm (3-2x10)	3-38x286mm (3-2x12)	4-38x286mm (4-2x12)	4-38x286mm (4-2x12)
4.27 m (14 ft.)	3-38x286mm (3-2x12)	3-38x286mm (3-2x12)	4-38x286mm (4-2x12)	4-38x337mm (4-2x14) *	4-38x337mm (4-2x14) *
4.88 m (16 ft.)	3-38x286mm (3-2x12)	4-38x286mm (4-2x12)	4-38x337mm (4-2x14) *	4-38x337mm (4-2x14) *	Design req'd by Engineer
COLUMN 1	2	3	4	5	6

Notes to TABLE 4:

1. The lintels in this table are Spruce-Pine-Fir lumber grades 1 & 2, except those marked * which are Douglas Fir lumber grades 1 & 2.
2. Built-up lintels must be constructed of full length members. No splicing of members is permitted between supports.
3. Supported length means half the span of trusses, roof joists, or rafters supported by the lintel plus the length of the overhang beyond the lintel (see FIGURE 9).
4. If the supported length is between the sizes shown, use the column with the greater depth. For garages or storage sheds with a door width or supported length greater than shown on the tables, consult a Professional Engineer.
5. The spans shown in the table are the clear spans between the load bearing supports at each end of the lintel. To find the total length of the lintel needed, add the two bearing lengths of the support to the clear span.
6. The minimum bearing length of the support at each end of the lintel must be 89mm (3 ½ in.).
7. Lintel sizes smaller than those shown on these tables may be used provided the lintel has been designed by a Profession Engineer and the lintel design and calculations are submitted and accepted.
8. The above noted lintels are not designed to carry masonry or floors above the overhead door. For these types of applications consult a Professional Engineer.
9. The deflection limit for lintels was set at a maximum 15mm (0.6 in.) to ensure proper closure of garage doors.

*** For Wood Lintel Substitutions please see TABLE 6 on Page 19.

FIGURE 5 - Exterior Corner Detail

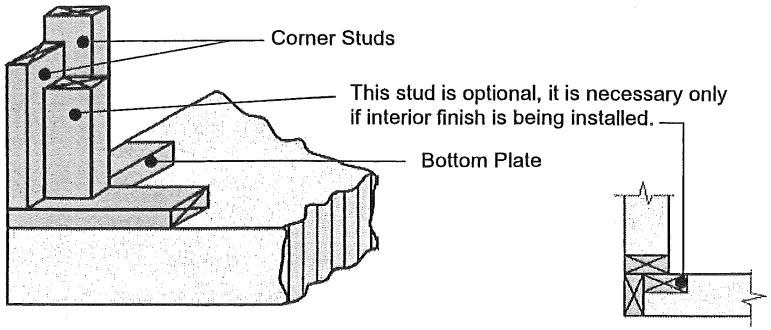
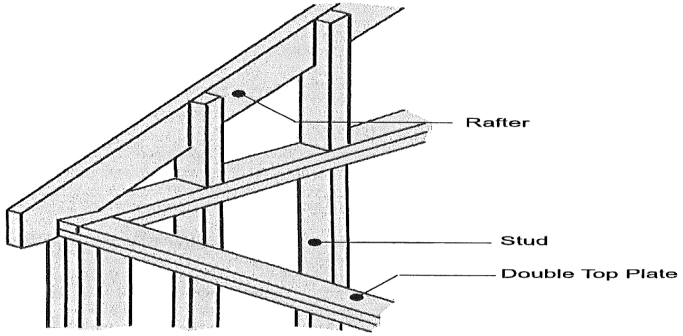


FIGURE 6 - Exterior Wall Framing at Gable End Detail



What type of lintel (header) is required for the overhead door?
The type of lintel required depends entirely upon the load which it must support. It is determined by the style of roof. See TABLES 3 & 4.

How are the tables used in determining the required overhead door lintel size?
If the roof style selected is Gable #1 as shown in FIGURE 7, then TABLE 3 is used to determine the lintel size. This table is used where the door opening DOES NOT SUPPORT the roof, i.e. where the roof framing elements such as trusses or rafters run parallel to the door opening.
If the roof type selected is as shown in FIGURE 8, i.e. Gable #2, Hip, Mono, or Flat, then TABLE 4 is used to determine the lintel size. This table is used where the door opening SUPPORTS the roof, i.e. where the roof framing elements such as trusses or rafters run perpendicular to the door opening.
To select a size of wood lintel simply match the door opening size with the appropriate supported length in TABLE 5 to find the minimum lintel size.

TABLE 3 - Wood Lintels - NOT SUPPORTING Roof Loads.

Door Opening Width	Lintel - Gable Roof Only (Door in Gable End)
2.44 m (8 ft.)	2 - 38 x 184 mm (2 - 2 x 8)
2.74 m (9 ft.)	2 - 38 x 184 mm (2 - 2 x 8)
3.05 m (10 ft.)	2 - 38 x 235 mm (2 - 2 x 10)
3.66 m (12 ft.)	2 - 38 x 235 mm (2 - 2 x 10)
4.27 m (14 ft.)	3 - 38 x 235 mm (3 - 2 x 10)
4.88 m (16 ft.)	3 - 38 x 235 mm (3 - 2 x 10)
5.49 m (18 ft,)	3 - 38 x 286 mm (3 - 2 x 12)

Notes to TABLE 3:

1. This table is for use with Spruce-Pine-Fir lumber grades 1 & 2.
2. Built-up lintels must be constructed of full length members. No splicing of members is permitted between supports.

FIGURE 7 - Roof Style with Lintel NOT SUPPORTING Roof.

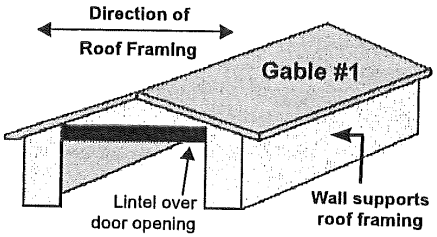
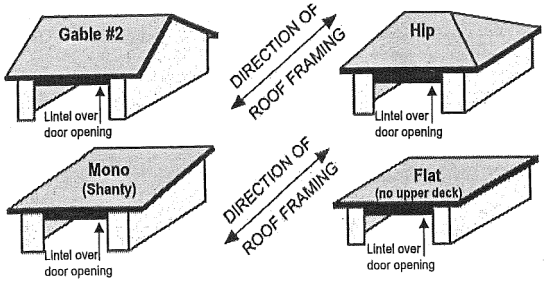


FIGURE 8 - Roof Styles with Lintel SUPPORTING Roof



LINTEL (header) SIZE SELECTION FOR AN OVERHEAD DOOR

EXAMPLE: In order to select the correct size of lintels in cases where it is supporting the roof, three pieces of information are needed:

1. the size of the garage;
2. the width of the overhead door opening; and
3. the size of the roof overhang.

As an example, assume you have a 7.32m x 7.32m (24 ft. x 24 ft.) garage with a 2.74m (9 ft.) overhead door opening and a 600mm (2 ft.) overhang. Refer to TABLE 4, begin by selecting the row for a 2.74 m (9 ft.) overhead door opening. Next, knowing that the supported length will be half the distance of the roof span plus the overhang (see FIGURE 9), we divide the 7.32m (24 ft.) roof span distance by 2 and add the 600mm (2 ft.) roof overhang to get the total supported length of 4.27m (14 ft.), we see that the proper size of lintel would be 3 - 38 x 235mm (3 - 2 x 10). If there was no roof overhang over the door opening we would look to column 4 where the supported length is 3.66m (12 ft.). The correct lintel size, in this case, would be 3 - 38 x 184mm (3 - 2 x 8).

FIGURE 9 - Supported Length of Wood Lintel