



Medicine Hat
The Gas City

**PLANNING, BUILDING &
DEVELOPMENT SERVICES**

580 - 1 Street SE

Medicine Hat, Alberta T1A 8E6

Telephone: 529-8374 FAX 502-8038

NEWSLETTER

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BUILDING

- 1) We are again coming into the winter season and will be dealing with cold weather requirements for concrete and foundations. Article 9.3.1.9 of the Alberta Building Code states: 1) When temperatures are below 5 degrees C concrete shall be kept at a temperature of not less than 10 degrees C or more than 25 degrees C while being mixed and placed, and maintained at a temperature of not less than 10 degrees C for 72 hours after placing; 2) No frozen material or ice shall be used in concrete described in sentence (1); 3) Concrete shall NOT be placed into mud, standing water or snow, or on, against or above any frozen material.

- 2) I'm sure everyone agrees enforcement of window and door flashings as it pertains to the code has been a headache for both the building contractor and the building SCO. It has been an ongoing issue in all jurisdictions. The Safety Codes Council has taken steps to review code requirements. A course has been created designed specifically for Safety Codes Officers which deals with all aspects of the "Building Envelope". This is a mandatory course which "ALL" Building SCOs must complete. Some of our Safety Codes Officers have completed the course and have asked questions relating to items and the clarity of items specifically referred to in the code. Following is the interpretation of code specifics as per the course material and the response to the questions asked.
 - a) Flashings are required above all window and door openings and "must" have a minimum of a 1" return. There is an exception to this when the ratio of distance between the top of the window or door frame is less 1/4 of the roof overhang (i.e.: roof overhang of 24" and the distance from the top of the window or door frame is less than 6".)
Reverse flashings are not required under window and door openings where frames extend 12mm or more (approximately 1/2") beyond the siding material below. Some window manufacturers have snap in flashings which can be installed to the face of the sills. These are deemed to be code acceptable. The bases of doors are not normally an issue as the sill extends well beyond what is required.

 - b) There are both one and two piece exterior electrical outlet covers being used. The

two piece boxes are designed to incorporate a built in channel which acts much similar to a J trim. Should the two piece box be used, the cut out in the wall encircling the electrical box shall be caulked (much similar to a circular pipe penetration). The back of the electrical cover base plate must also be caulked and imbedded in that surrounding the electrical plug. The second plane of protection (tyvek, typar, tar paper, etc.) must be installed much similar to that required for a window. A flashing (complete with a 1" return) "should" be installed over the outlet box but is not necessary under the box provided all the above requirements are met. There is virtually no way for moisture to get into the wall, providing both the caulking and second planes of protection are properly installed.

The one piece outlet covers must have head flashings and J trims (similar to that of a window), but do not require reverse flashings to the underside if the face of the cover itself is ½" or more beyond the face of the J trim or wall finish material below. The J trims "should" be caulked to the sides and bottom of the electrical outlet cover.

- c) Dryer vents have been an issue. The back face of the flange of a dryer vent must be caulked and properly fastened to the wall. Obviously a mechanical contractor would not normally do this. Should the full perimeter of the dryer vent be properly sealed and fastened to wall and the tar paper or other second plane material be properly lapped and sealed, the flashings would not be necessary. As this does not normally occur we recommend the following application. Install a flashing complete with end dams over the vent ensuring the tar paper, tyvek, or similar product laps over the return (up the wall) of the flashing. Install J trims around the perimeter of the vent (as would normally be done) ensuring the J trims along the side and "especially" the bottom are caulked to the wall and/or vent. The reverse flashing under the vent is not necessary as the face of these vents effectively directs the water (moisture) away from the wall.
- d) Circular penetrations of a wall of up to 4" in diameter need only be caulked. Caulking shall occur at both the first and second planes of protection. To simplify this, caulking must occur at the circular pipe/wall penetration and at the exterior finish (siding/pipe penetration).

It should be noted the above conditions pertain to wall finishes of other than stucco. Head flashings as it pertains to stucco must comply with the same requirements as other wall finish materials. Stucco must be at least 3/4" in thickness. Bottom sills of windows and doors normally extent 1 1/4" to 2" and sometimes more beyond the face of the wall in which they are installed. In most cases reverse flashings, under windows, are unnecessary. However, when stucco applications are used, the second plane of protection is extremely important. Although not required by the building code the Stucco Resource Guide recommends not less than two layers of tar paper, properly lapped and sealed. Peel and stick membranes are specified for use around all wall penetrations (doors, windows, etc.).

Columns supporting beams and girders must be sized to support the design loads being imposed on them. Standard 3" teleposts conforming to CAN/CGSB 7.2-94 "Adjustable Steel Columns" are acceptable for design loads up to 8,000#. These teleposts fall within

the scope of Part 9 of the Code where joists and beams are constructed with dimensional lumber. With the use of Engineered Wood Products consisting of manufactured I-joists and LVL beams installed in continuous lengths over multiple spans, these loads are often exceeded and pre-engineered columns must be used. Currently Stemco and Wesure are approved manufacturers of pre-engineered columns. The Standata 06-BCI-015 outlines the requirements that a Building Contractor is responsible for when using Engineered I-Joists and LVL beams in Single Family Dwellings. The Building Contractor must submit the design of any engineered columns including site-specific design of the column footings accounting for the soil conditions of the site of the SFD. As a contractor cannot verify the bearing capacity of the soils at the time of the permit application it is impractical to have site specific details for support pads. The manufacturer of both Stemco and Wesure Columns provide the information for both post size/loading and pad support based on different soil bearing capacities. Since the capacity of the soils cannot be verified until a soil bearing inspection is completed, designing of the pad (size and re-enforcement) is a difficult task. For that reason the most restrictive condition must be used. All pad footings must be sized according to the manufacturer's specifications 2000lbs/sq. ft. (unfactored). This information can be found on both the Wesure and Stemco web sites (www.wesure.com and www.stemco.com). Please ensure pad sizes and support columns are adequate to support the point loads in place. These loads need to be identified on either blue prints or the engineered truss and/or joist plans. The Building Contractor must ensure they are using the most recent product information from the manufacturer when specifying columns and footings. Coordination between the floor supplier and the building designer is crucial to ensure compliance with the Standata and is the responsibility of the permit applicant.

Using built up wood columns is also a concern, especially when used in Tall Walls. The tables for built up wood posts by the Canadian Wood Council only approve posts up to 12'6" high. Tall Walls often support Hip girders and require a post to transfer the load of the girder to the foundation. The approved guidelines do not specify built up columns supporting loads from girder trusses or beams. These guidelines assume the loads along the top of the wall are uniform. Using the guidelines as a reference, certain assumptions can be made for the capacity of a stud in these Tall Walls. The guidelines state that the maximum allowable truss span is 32' (with 24" overhangs). The end reaction of a 32' truss is 1,116# assuming our design loads of 31psf (Snow and dead). If the studs are spaced at 16" on center, the bearing capacity of each stud would be 744#. The guidelines outline what size of stud (2x6 or 2x8), based on the height of the wall, will support a 32' truss. The taller the wall, the larger the stud and the closer the spacing, to be able to carry the roof load. The typical end reaction of a hip girder with a 6' setback is 2,232#. Using the guidelines for an 18'5" Tall Wall, the studs must be 2x8 spaced at either 12 or 16" on center. Because 24" on center spacing is only approved to 16'2", 16" O/C is the maximum allowable spacing of 2x8 at this height. Based on this spacing and a bearing capacity of 744# for a stud, it will take 3 studs to support the load of a girder truss with a 6' setback from the corner. Other loads may also be supported by the same methodology. All built up posts in Tall Walls must be bolted similarly to full height studs on the sides of openings. These assumptions are conservative, but are acceptable without site specific engineering being required.

Permit Application Checklists

WE HAVE BEEN ASKED TO ATTACH BOTH DEVELOPMENT AND BUILDING PERMIT APPLICATION CHECK LISTS TO THIS NEWS LETTER. THERE ARE CHECK LISTS FOR EVERY APPLICATION (IE: DECKS, BASEMENT DEVELOPMENT, SINGLE FAMILY DWELLINGS, COMMERCIAL AND INDUSTRIAL BUILDINGS WITH AND WITHOUT PROFESSIONAL INVOLVEMENT, ETC, ETC). DUE TO THE NUMBER OF CHECKLISTS IT IS IMPRACTICAL TO ATTACH THEM ALL TO THIS DOCUMENT. THEY ARE AVAILABLE ON THE CITY WEB SITE AS LISTED BELOW.

Building Permit Application Checklists can be found on the City's website located at:

<http://www.medicinehat.ca/City%20Government/Departments/Planning,%20Building%20and%20Development/Safety%20Codes%20and%20Permits/Building%20Permits.asp>

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ELECTRICAL

Reminders

When installing metal raceways, the raceways must be continuous throughout and must be mechanically fastened (secured) to the equipment to which they are attached. The teck cable must also be continuous and secured at each end (reference CEC 12-914).

When installing #2 USEB90 cable through an LB fitting, care must be taken when considering the bending radius. The minimum LB pipe size that can be used is 2".

When using flexible metal conduit, and an insulating grounding conductor is required (such as patient care areas or circuits for computers), green tape on colored conductors will no longer be accepted. ISO BX is now available and must be used. It has a green insulated grounding conductor and a bare bonding wire (please reference CEC section 24 rule 4-036).

When grounding an electrical service, the ground wire, from the ground plate must enter the panel in the main "overcurrent compartment" and must terminate directly on the neutral bar not to the "can" of the panel. The panel is bonded via the bonding screw through the neutral bar. Should this not be the case a bonding wire, from the neutral bar to the can, must be installed and table 16 of the CEC must be referenced.

PLUMBING

We have been fielding a lot of questions in regards to the proper installation of sump pump containers in new homes. There are several options available for this connection. Should the sump container not be connected to the weeping tile it is recommended it be placed in close proximity to the exterior foundation wall in a location which is easily accessible. Should this option be used, the sump container **MUST** be a perforated type and shall be surrounded by not less than 6” of clean washed rock for the full perimeter and base. Pump out can be to the sanitary sewer or storm sewer where that option is available. The connection would be much similar to that required for a walk out basement. Other options for pump out is by gravity to a dry well or to above grade ensuring the piping for such is located to the warm side of the basement frost walls. A dedicated electrical outlet is necessary in close proximity to sump container.

Standing water in a sump container can lead to unhealthy conditions. It can create a high humidity level in the house and eventually lead to mold/mildew developing. It is strongly recommended sump pumps be installed, especially in areas where past experience suggests there may be water table fluctuations.

GAS

CSST (corrugated stainless steel tubing), gastite, titeflex or any other manufactured product must be installed according to the manufacturer’s installation manual. The “PERSON” installing the piping must be a certified installer. Gas Safety Codes Officers will be checking sites to ensure the person performing the work is qualified to do so. If requested, proof of certification **MUST** be provided by the installer at the time of inspection.

CSST cannot be used as an appliance connector. The installation instructions clearly state that CSST can only be used up to the gas valve. SCCT cannot be used after the gas shut off.

Venting of garage heaters must be completed according to manufacturer specifications (installation guidelines). Some of these unit heaters were manufactured after July 1, 2011. They vent out the side wall and have been classed as a category 3 appliance. They must be provided with S-636 piping, PVC or stainless steel.

A permit is required for the replacement of a standard type water heater to an instantaneous demand type. Larger gas piping is necessary along with the necessary venting changes. A final inspection is required upon completion of the installation. Penetrations of the vents through the house wall must also be properly re-insulated and properly caulked (sealed) at the exterior penetration.

New Standatas and Variances can be obtained by going to the Municipal Affairs website. Alternatively, there is also the option of signing on to their Email list and any new Standatas and Variances would automatically be sent to you.

