AMA Regional SCO Meeting
Building, Fire, Electrical, Plumbing, Gas & Private Sewage
Wednesday October 26, 2016
8:30 am - 4:00 pm

Medicine Hat
Medicine Hat Exhibition and Stampede
2055 21 Avenue SE
Grandstand Banquet Room

Facilitators
John Wilson, Building Inspector, AMA
Charles Maximillian, Building Inspector, AMA

AGENDA

8:30 am - 8:35 am  Call to order and Introductions
John Wilson, AMA

8:35 am - 9:00 am  Safety Codes Council Updates
Allison Karch, Safety Codes Council
- Accreditation & Certification updates
- Training updates
- ACT Project – Accreditation, Certification, and Training Management Platform
- Sub-Council updates
- ASCA updates
- Council priorities for 2017-2020

9:00am - 9:30 am  Presentation
David Ramsay, AMA
MGA and Codes. Where do they connect?

9:30 - 10:00 am  Administrative Penalties
Geoff Park, AMA

10:00 - 10:15 am  COFFEE BREAK
Coffee Sponsored by Safety Codes Council

10:15 - 11:15am  Fire Alarm Monitoring as per ULC S561
Pierre McDonald, Regulatory Affairs Representative, ULC
Overview of Safety Services Discussion Feedback

11:15 - 11:45 am  Overview of Safety System Discussion Feedback
David Ramsay, AMA
Allison Karch, Safety Codes Council

11:45 - 1:00 pm  LUNCH
On Your Own

*** See Building / Fire / Electrical / Plumbing & Gas & Private Sewage Agendas ***
For Concurrent Afternoon Meeting Locations and Information

Alberta Municipal Affairs (AMA)
Phone: 1-866-421-6929
E-mail: safety.services@gov.ab.ca

Safety Codes Council
Phone: 1-780-413-0099
E-mail: www.safetycodes.ab.ca/
AMA Regional SCO Meeting
Concurrent Building Break-Out Session
1:00 pm – 4:00 pm
Grandstand Banquet Room

Facilitators
John Wilson, Building Inspector, AMA
Charles Maximilian, Building Inspector, AMA

AGENDA

<table>
<thead>
<tr>
<th>Time</th>
<th>Session</th>
<th>Facilitators</th>
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<tr>
<td>1:00 pm - 1:20 pm</td>
<td>Fire Safety Plans &amp; SCO Authority</td>
<td>Kevan Jess, AMA</td>
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<td>1:30 pm - 2:30 pm</td>
<td>Energy Code Discussion (PPT Handout)</td>
<td>John Wilson/Charles Maximilian</td>
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<td>2:30 - 2:45 pm</td>
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| 2:45 pm - 4:00 pm | Discussion Topics from Floor                | Penella Zollner, Park Enterprises
                              |                                  | Robert Green, Parkland County     |
                              |                                  | John Wilson,AMA                   |

*** ADJOURNMENT ***
Meeting Minutes will be posted on the Safety Codes Council website
http://www.safetycodes.ab.ca/SCO/Pages/Regional-Meetings.aspx
AMA Regional SCO Meeting
Concurrent Fire Break-Out Session
1:00 pm – 4:00 pm
Hungry Horseman

Facilitators
Kevan Jess, Chief Fire Administrator, AMA
Tom Harnos, Field Officer, AMA

AGENDA

1:30 – 2:30
Presentation from the Office of the Fire Commissioner
Tom Harnos, Field Officer
Office of the Fire Commissioner,
Alberta Municipal Affairs

2:30 – 2:45 pm
COFFEE BREAK
Coffee Sponsored by
Safety Codes Council
Tom Harnos

2:45 pm – 4:00 pm
• Telewarrants
• Review of inquiries that have come through Safety Services and an update on STANDATA's
• Currently no topics submitted in from SCO's registered. Time allotted for questions
Kevan Jess

*** ADJOURNMENT ***

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Alberta Municipal Affairs (AMA)
Phone: 1-866-421-6929
E-mail: safety.services@gov.ab.ca

Safety Codes Council
Phone: 1-780-413-0099
E-mail: www.safetycodes.ab.ca/
AMA Regional SCO Meeting
Concurrent Electrical Break-Out Session
1:00 pm – 4:00 pm
Wild Rose Room

Facilitator

Kevin Glubrecht, Senior Electrical Inspector, AMA
Clarence Cormier, Chief Electrical Administrator, AMA

AGENDA

1:00 pm - 2:30 pm  Discussion Topics / Questions
- Presentation
  o STANDATA
- Questions from the floor

2:30 - 2:45 pm  COFFEE BREAK

Coffee Sponsored by Safety Codes Council

2:45 pm - 4:00 pm  Discussion Topics / Questions
- Presentation
  o Staying current – SCA responsibilities, how to subscribe to STANDATA
  o PV requirements
  o AFCI requirements
  o Mud Tanks
  o Branch circuit loading
  o Farm Services
  o Bonding 2 or more buildings
  o Engineers and Variances

- Questions from the floor
*** ADJOURNMENT ***

Meeting Minutes will be posted on the Safety Codes Council website
http://www.safetycodes.ab.ca/SCO/Pages/Regional-Meetings.aspx

AMA Regional SCO Meeting
Concurrent Plumbing, Gas & Private Sewage
Break-Out Session
1:00 pm – 4:00 pm
Cactus Room

Facilitator
Tom Knull, AMA

AGENDA

1:00 pm - 2:30 pm  Discussion Topics
• Questions from the floor
• Q & A

2:30 – 2:45 pm  COFFEE BREAK

Coffee Sponsored by
Safety Codes Council

2:45 pm - 4:00 pm  Continuation of Discussion Topics

*** ADJOURNMENT ***

Meeting Minutes will be posted on the Safety Codes Council website
http://www.safetycodes.ab.ca/SCO/Pages/Regional-Meetings.aspx
CONSTRUCTION SITE FIRE SAFETY PLANS

INTRODUCTION

This STANDATA has been developed to allow building safety codes officers to accept fire safety plans for construction and demolition sites as required under Section 5.6. of the Alberta Fire Code 2014 where fire safety codes officers are not readily available.

DISCUSSION

Requirements for fire safety plans at construction and demolition sites are regulated under the Alberta Building Code 2014 (ABC) and the Alberta Fire Code 2014 (AFC). Under ABC 8.1.1.1., which applies to all buildings regulated by the ABC, fire safety at construction and demolition sites shall conform to Section 5.6. of Division B of the AFC. Article 5.6.1.3. of the AFC, which sets out criteria for fire safety plans, requires that a fire safety plan shall be prepared for the site and accepted in writing by the fire department and the authority having jurisdiction prior to commencement of construction and demolition. The AFC defines the authority having jurisdiction as a fire safety codes officer.

ISSUE

Article 5.6.1.3. is an Alberta specific code requirement and creates an unintended restriction for the acceptance of fire safety plans. The wording of 5.6.1.3. does not specifically provide for the option of a building safety codes officer accepting fire safety plans. In some areas of the province, a fire safety codes officer and fire department staff are not readily available or accessible or may not be prepared for this undertaking. Both the Chief Building Administrator and the Chief Fire Administrator support and encourage the practice for building and fire safety codes officers and the fire department to accept construction site fire safety plans as part of a joint risk management process.

While the intent of the 2014 changes to Article 5.6.1.3. was to provide a clear method for information dissemination and enforcement, this code requirement will be reassessed as part of Alberta’s national/provincial code harmonization project for the next Alberta building and fire code editions. In the duration, a variance is necessary to provide authority for building safety codes officers to accept fire safety plans, where fire safety codes officers and fire departments are not readily available, as a matter of public safety.
5.6.1.3. Fire Safety Plan

1) Except as required in Sentence (2), prior to the commencement of construction, alteration or demolition operations, a fire safety plan, accepted in writing by the fire department and the authority having jurisdiction, shall be prepared for the site and shall include

   a) the designation and organization of site personnel to carry out fire safety duties, including a fire watch service if applicable,
   b) the emergency procedures to be followed in the event of a fire, including
      i) initiating a fire warning,
      ii) notifying the fire department,
      iii) instructing site personnel on the procedures to be followed once the warning has been initiated, and
      iv) confining, controlling and extinguishing the fire,
   c) measures for controlling fire hazards in and around the building (see Appendix A), and
   d) a maintenance procedure for firefighting measures required in Section 5.6.

2) Prior to the commencement of construction, alteration or demolition operations that occur in an existing building required to have a fire safety plan conforming to Section 2.8., the revised fire safety plan shall take into account the changes occurring to the building and shall be accepted in writing by the fire department and the authority having jurisdiction.

3) Where construction, alteration or demolition involves hot work, a fire safety plan, accepted in writing by the fire department and the authority having jurisdiction, shall be prepared for the site.

Alberta Building Code 2014

8.1.1.1. Scope

1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A.
2) This Part applies to fire safety and the protection of the public during the construction, alteration or demolition of every building, including any incompletely or abandoned building.
3) Fire safety at construction and demolition sites shall conform to Section 5.6. of Division B of the Alberta Fire Code 2014.

VARIANCE

A building safety codes officer exercising powers pursuant to their designation of powers and terms of employment in accordance with the Safety Codes Act, may accept fire safety plans as authorized under Article 8.1.1.1. of the ABC and in accordance with the terms and conditions of Section 5.6 of Division B of the AFC throughout the Province of Alberta. This variance applies to building safety codes officers employed by an accredited municipality, accredited regional services commission, accredited agency, accredited corporation, the Alberta Safety Codes Authority and section 33(1) safety codes officers appointed by the Minister for the administration of the Safety Codes Act anywhere in Alberta.

This variance also recognizes the existing authority for building and fire safety codes officers to inspect requirements common to both the ABC and AFC including construction site fire safety plan compliance throughout the construction process.
Relaxation Requests for Barrier-Free Design Requirements V2

DISCUSSION

Barrier-free design requirements apply to all buildings as specified in Article 3.8.1.1. Application. All new builds, including additions, are expected to comply with all barrier-free design requirements. There are various occupancy types where people with disabilities are unemployable for reasons of safety, and would be exempt from providing barrier-free design requirements.

CODE REFERENCES
1. Article 3.8.1.1. states:

3.8.1.1. Application
1) The requirements of this Section apply to all buildings except
   a) detached houses, semi-detached houses, houses with a secondary suite,
      duplexes, triplexes, townhouses, row houses and boarding houses, which
      are not used in social programs such as group homes; halfway houses
      and shelters (see A-1.4.1.2.(1), Secondary Suite, in Appendix A of
      Division A),
   b) relocatable industrial accommodations,
   c) buildings of Group F, Division 1 major occupancy, in which only the
      requirements dealing with hearing sensory disabilities would apply, and
   d) buildings that are not intended to be occupied on a daily or full-time basis,
      including automatic telephone exchanges, pumphouses and substations,
      in which only the requirements dealing with hearing sensory disabilities
      would apply.
(See Appendix A.)
2) Buildings required to be barrier-free must comply with all requirements
   designed to assist persons with physical, sensory and developmental disabilities.

2. Sentence 2.2.1.4.(1) of Division C states:

Unless stated otherwise, all Code references in this STANDATA are to Division B of the Alberta Building Code 2014.
2.2.1.4. Barrier-Free Relaxations

1) The Chief Building Administrator may grant relaxation of one or more of the requirements of Section 3.8. of Division B if an owner can demonstrate to the satisfaction of the Chief Building Administrator that
   a) the specific requirements are unnecessary, or
   b) extraordinary circumstances prevent conformance.

INTERPRETATION

1. All additions and new buildings will automatically be denied relaxation for any of the barrier-free design requirements. The application form for barrier-free relaxation has been revised identifying only renovations to existing.

2. The occupancy types that are exempt from providing barrier-free design requirements include but are not limited to:
   - Fire & EMS dormitories including washrooms and showers
   - Industrial buildings used for heavy equipment maintenance and/or storage
   - Workers’ facilities or camps located on industrial sites, i.e., drilling or mining sites
   - Waste Management Facilities
   - Abattoirs
   - Recycling Centres - operations/sorting areas
   - Food/beverage service kiosks
   - Limited use, limited access washroom facilities, i.e., transit turnarounds

Alternate use occupancies:
   - Portable/modular classrooms as overflow for schools, where barrier-free facilities are provided elsewhere.
   - Temporary structures – 3 years or less of occupancy/use where barrier free design requirements are shown to be unnecessary.

If there is any question or concern with other new builds that may be exempt from compliance with barrier-free requirements, please contact Alberta Municipal Affairs 1-866-421-6929 or safety.services@gov.ab.ca

This INTERPRETATION is applicable throughout the province of Alberta.
Pre-Assessment for Relaxation of Barrier-Free Requirements

Municipality____________________________ SCO/Plans Examiner________________________________________

Date Reviewed by AHJ______________________ AHJ Phone #__________________________

AHJ Building Project/Reference #_____________________________

Name of Client____________________________ Type of Business______________________________

All new buildings and additions will automatically be denied relaxation for any of the barrier-free design requirements in the ABC Section 3.8. The application form for barrier-free relaxation has been revised identifying only renovations to existing construction.

The following documents shall be initialed by SCO/Plans Examiner and must accompany the application for Relaxation of Barrier-Free Requirements:

☐ A floor plan showing existing layout including identified rooms/spaces/areas, measurements and orientation of washroom fixtures, if applicable, to request a relaxation.

☐ A floor plan showing proposed changes, if available.

CODE REQUIREMENT REQUESTED TO BE RELAXED

☐ Access to the building

☐ Access to and supply of washroom facilities

☐ Other (please specify)______________________________

Reason:________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

________________________________________________________________________

If the above information is not attached, the Application for Relaxation of Barrier-Free Requirements will not be processed by Safety Services.

NOTE: A request for Relaxation of Barrier-Free Requirements is not a guarantee a relaxation will be granted.

Please mail, email or drop off the required documents accompanied with a $105 fee made out to the Government of Alberta to the address listed above. If you need to speak with the Barrier-Free Administrator, please call for an appointment. Thank you.

TO BE COMPLETED BY GOVERNMENT OF ALBERTA ONLY

RELAXATION: ☐ APPROVED ☐ DENIED BY ________________
BACKGROUND TO THE PREPARATION OF THE GUIDELINE

In article 9.7.4.3 Performance Requirements, the 2014 Alberta Building Code requires that performance grades for manufactured windows, doors and skylights within the scope of the NAFS standard be selected according to CSA A440S1 "Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440, NAFS – North American Fenestration Standard/Specification for Windows, Doors, and Skylights" so as to be appropriate for the conditions and geographic location in which the window, door or skylight will be installed.

CSA A440S1 provides a simplified method for determining the Specified Wind Load and Specified Driving Rain Wind Pressure for selecting the NAFS performance grade and water resistance. The simplified method uses the most conservative exposure factors and internal and external gust factors and pressure coefficients for High Rise buildings from User's Guide – NBC 2010: Structural Commentary I.

The use of parameters intended for high rise buildings results in values that are conservative for housing and small buildings compared to the values that would be generated under Part 4 of the code by reference to Structural Commentary I. This in turn requires much higher ratings for the fenestration products than is necessary to meet the actual environmental loads. This can mean significantly increased costs to supply products with the higher ratings, and in some cases products that meet the higher ratings may not be available.

The CSA Technical Committee on Performance Standards for Windows studied this matter in November 2015 and addressed it by approving an update to CSA A440S1 to be published sometime in 2016. However the updated version will not be recognized until the next Alberta Building Code.

In addition to the simplified method for determining Specified Wind Load and Specified Driving Rain Wind Pressure CSA A440S1 also explicitly allows values calculated in accordance with the more detailed methods in User's Guide – NBC 2010: Structural Commentary I. The design pressures in this guideline were prepared by a registered professional engineer in accordance with the latter method.

The Provincial Working Group

The Canadian Home Builders' Association Alberta sponsored a Provincial Working Group to consider this issue, consisting of manufacturers' representatives, builders' representatives, representatives of the Safety Codes Council and Alberta Municipal Affairs, the City of Calgary, the City of Edmonton, the Alberta Building Officials Association, RDH Building Science, and the British Columbia Building Safety and Standards Branch.

The working group decided that the best approach would be to calculate a table of required NAFS Performance Grade ratings for Part 9 buildings in Alberta municipalities similar to the one British Columbia adopted in Table C-4 of the 2012 BCBC introduced in Revision 8. Because making
changes to the 2014 ABC is not feasible, it was proposed that such a table be provided in a
guideline document.

The Provincial Working Group commissioned Berkeley Vadocz Engineering Inc. to create this
guideline which is aligned with the amendments approved for the next update to CSA A440S1.

**OBJECTIVE OF THE GUIDELINE**

The objective of the guideline is to provide an engineered set of Specified Driving Rain Wind
Pressure and Specified Wind Load values for Part 9 buildings for all municipalities having Climatic
Data in Table C-2 of the code, so that code users do not have to commission engineering services
on a case-by-case basis. The required NAFS ratings based on the Design Loads are also provided.

More accurate and possibly lower values can be calculated by a professional engineer under Part
4 of the Code by reference to Structural Commentary I.

**SCOPE AND LIMITATIONS**

This guideline contains values for the Specified Driving Rain Wind Pressure and Specified Wind
Load certified by Berkeley Vadocz Engineering Inc. a specialty professional engineering firm
employing professionals registered in the Province of Alberta. These values may be used in a
municipality when permitted by the authority having jurisdiction.

Use of this document is limited to Part 9 Residential buildings subject to the scope and limitations
listed below. Users of this document are responsible to familiarize themselves with the meaning
of the terminology used.

- The values in the table apply only to buildings up to 10 metres in height as defined in
Appendix Item 1.
- The Specified Wind Loads do not apply to buildings located on Hills, Ridges, or
Escarps when the conditions for wind speed-up are met as defined in Appendix item
2.
- The Specified Wind Loads and Specified Driving Rain Wind Pressures are based on an
Open Terrain condition.
- Lower values are possible for buildings in Rough Terrain. For Rough Terrain values, consult
a qualified registered professional when permitted by the authority having jurisdiction.
- The guideline does not apply to skylights or sloped glazing as those products must also
consider snow loads and higher suction pressures.
- Reference climate loads shall be in accordance with the values established by the
authority having jurisdiction or, in the absence of such data, the climatic values provided
in Appendix C of ABC 2014.
- The reference climate loads used to create the table in this guideline are from Appendix
C of ABC 2014.
How to use the table

1) Look up the municipality you are in or the closest one to it in the left hand column.
2) Record the required NAFS Design Pressure (DP), Performance Grade (PG), and Water Resistance from the three right hand columns of the same row.
3) Manufactured windows and doors selected for construction need to meet or exceed the Specified NAFS ratings.

About the NAFS ratings

- The NAFS ratings are based on the allowable values in NAFS-11 Table 5.7, Gateway Requirements, and Table 5.4, Canadian (only) optional Performance Grades (PG).
- The NAFS Design Pressure must be equal to or greater than the Specified Wind Load.
- The required Performance Grade is based on the NAFS Design Pressure.
- The required Water Penetration Resistance must be equal to or greater than the Specified DRWP, but cannot be lower than the value associated with the Performance Grade in NAFS-11 Tables 5.7 and 5.4.

Berkeley Vadocz Engineering Inc. does not assume responsibility for errors, oversights, or consequences resulting from the misuse of the information contained in this guideline.

Berkeley Vadocz Engineering Inc.

David Vadocz, P.Eng., Principal
Specialty Structural Engineer

The Canadian Home Builders’ Association Alberta and Berkeley Vadocz Engineering would like to acknowledge the practical advice, input, and review by the following individuals and organizations during the creation of this document:

- Al Jaugulis BScArch RDH Building Science Inc., CSA Technical Committee on Performance Standards for Windows.
- City of Calgary, Building Regulations Division
- Alberta Building Officials Association
- City of Edmonton, Development Services, Building Regulations

Date of Issue: May 11, 2016
<table>
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<tr>
<th>Alberta Municipalities</th>
<th>1/5 DRWP (Pa)</th>
<th>1/50 HWP (Pa)</th>
<th>DRWP (Pa)</th>
<th>Wind Load (psf)</th>
<th>Required Fenestration Performance</th>
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APPENDIX:

1. Building Height \( h \)

\( h \) is the height of the top of the window or door above grade in metres.

*grade* means the lowest of the average levels of finished ground adjoining each exterior wall of a building, except that localized depressions need not be considered in the determination of average levels of finished ground.

2. Wind Speed-up over Hills, Ridges, and Escarpments

Buildings sited on the upper half of an isolated hill, ridge or escarpment constituting an abrupt change in the general topography may experience wind speed-up leading to increased wind loads that can be determined by a professional engineer.

This is only a concern when buildings and other site conditions and location of structures meet ALL off the following conditions:

a) The hill, ridge or escarpment is isolated and unobstructed by other similar topographic features of similar height for 100 times the height \( H \) of the topographic feature or 3km, whichever is less. This distance shall be measured horizontally from the point at which the height \( H \) is determined.

b) The hill, ridge or escarpment protrudes above the height of other terrain features within a 3km radius by a factor of two or more.

c) The building is located in the upper one-half of a hill or ridge or near the crest of an escarpment as shown in Figure 1.

d) The incline of the slope is greater than 1 in 10 (\( H/L_h \geq 0.2 \) in Figure 1)

---

*Figure 1*

![Diagram of wind speed-up over a hill or escarpment](image)

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Date of Issue: May 11, 2016
**Definitions:**

**Escarpment:** A cliff or steep slope generally separating two levels or gently sloping areas.

**Hill:** A land surface characterized by strong relief in any horizontal direction.

**Ridge:** An elongated crest of a hill characterized by strong relief in two directions.

**Lh:** Distance upwind of crest of hill or escarpment to where the difference in ground elevation is half the height of hill or escarpment.
NOTICE

Application of Energy Efficiency Requirements and Enforcement Dates

This notice serves as a reminder that the transition period for voluntary application of the National Energy Code for Buildings (NECB) 2011 and Section 9.36. Alberta Building Code (ABC) 2014 for housing and small buildings ends on November 1, 2016.

Where an application for a building permit for a site-constructed building is received on or after November 1, 2016, the building design must comply with the requirements of the NECB 2011 or Section 9.36. ABC 2014 as appropriate. Please see the April 2016 Interpretation STANDATA - Application of Energy Efficiency Requirements and Enforcement Dates for details on application of the NECB 2011 and Section 9.36 ABC.

Energy codes are an important component of climate change strategies in Alberta, Canada and globally. For this reason, owners, builders and designers are encouraged to voluntarily apply energy efficiency requirements during this transition period. Alberta and other provinces and territories are committed to the expeditious adoption of future editions of the national energy codes and improved energy efficiency standards.

September 2016

For further information contact Municipal Affairs, Safety Services Branch toll-free at 1-866-421-6929.
APPLICATION OF ENERGY EFFICIENCY REQUIREMENTS AND ENFORCEMENT DATES

INTRODUCTION

This STANDATA has been developed to provide interpretations respecting the application of energy efficiency requirements under Section 9.36. Alberta Building Code 2014 (ABC 2014) and the National Energy Code of Canada for Buildings 2011 (NECB 2011).

A key update is the clarified enforcement date of November 1, 2016 for energy efficiency requirements.

ISSUE #1

Extension of Transition Period

Input from municipalities, construction industry, professionals, safety codes officers and the Building Sub-Council of the Safety Codes Council has indicated that the May 1, 2016 mandatory application of the NECB 2011 will not be practical or feasible. The substantive changes required to accommodate energy efficiency with respect to design, training and verification necessitates a relatively short extension. There has also been considerable confusion respecting the transition period for energy efficiency between voluntary usage and mandatory application of the energy codes.

Interpretation

The May 1, 2016 transition period for voluntary application of the NECB 2011 is extended to November 1, 2016. This extension provides consistency with the mandatory application date for Section 9.36. ABC 2014, which is also November 1, 2016.

A clarified condition for demonstrating compliance as of November 1, 2016 is also required for both NECB 2011 and Section 9.36. ABC 2014. Where an application for a building permit for a site-constructed building is received by the authority having jurisdiction before November 1, 2016, the design of the building is not required to comply with the requirements of Section 9.36. ABC 2014 or the NECB 2011 as appropriate.

Energy codes are an important component of climate change strategies in Alberta, Canada and globally. For this reason, owners and designers are encouraged to voluntarily apply energy efficiency requirements during this extended transition period. Alberta and other provinces and territories are committed to the expeditious adoption of future editions of the national energy codes and the corresponding improved energy efficiency standards.
ISSUE #2
Manufactured homes and energy efficiency
Manufactured homes and other factory-built structures, unlike site-constructed buildings, are
typically not constructed using a building permit process. Factory-constructed buildings may be
constructed long before the buildings are placed on site. Consequently, the information or
evidence to demonstrate compliance with respect to enforcement dates for factory-constructed
buildings and site-constructed buildings are not the same.

Interpretation
Site-Constructed Buildings
Where an application for a building permit for a site-constructed building is received by the
authority having jurisdiction before November 1, 2016, the design of the building is not required
to comply with the requirements of Section 9.36. ABC 2014 or the NECB 2011 as appropriate.

Where an application for a building permit for a site-constructed building is received on or after
November 1, 2016, the building design must comply with the requirements under Section 9.36.
ABC 2014 or the NECB 2011 as appropriate.

Manufactured Homes and Other Factory-Constructed Buildings
Where a manufactured home is constructed prior to November 1, 2016, the building design is
not required to meet the requirements of Section 9.36. ABC 2014. The builder will be required to
provide the homeowner and permit issuer with appropriate documentation that proves that the
construction completion date occurred prior to November 1, 2016. In cases where the home is
not substantially completed in the manufacturer's facility, the manufacturer's record of
completion date will be used.

A manufactured home that has had its factory-related construction completed on or after
November 1, 2016, will be required to meet the requirements of Section 9.36. ABC 2014.

Factory-constructed buildings other than manufactured homes will not be required to meet the
energy efficiency requirements (Section 9.36. ABC 2014 or NECB 2011 as appropriate)
provided the factory-related construction is completed before November 1, 2016. Similar to
manufactured homes, appropriate documentation demonstrating date of completion must be
provided to the owner and permit issuer.

A factory-constructed building that has had its factory-related construction completed on or after
November 1, 2016, will be required to meet the requirements of Section 9.36. ABC 2014 or
NECB 2011 as appropriate.

ISSUE #3
Safety Codes Officer Authority to Inspect and Enforce Energy Efficiency Requirements
Safety codes officers designated in the building discipline have raised questions with Municipal
Affairs respecting their authority to inspect and enforce energy efficiency requirements under
the NECB 2011 and to a lesser extent Section 9.36. ABC 2014.

The specific reference to the Alberta Building Code, specific editions of the Alberta Building
Code or omission to reference the NECB 2011 in an accredited authority Quality Management
Plan (QMP) or the safety codes officer designation of powers is creating confusion respecting
the valid authority of a building safety codes officer to inspect and enforce energy efficiency
requirements.
Interpretation

A safety codes officer may only exercise their powers and perform their duties in accordance with their designation of powers and their terms of employment. The designation of powers certificate for a building safety codes officer references the term “Building” and lists the powers under the Safety Codes Act (Act) that the safety codes officer is authorized to exercise. The Act provides authority to make regulations respecting “buildings” and the Building Code Regulation (31/2015) references both Section 9.36. ABC 2014 and the NECB 2011. This means that a building safety codes officer has authority to inspect and enforce Section 9.36. ABC 2014 and NECB 2011 subject to the certification of competency (group and levels) that the safety codes officer has attained and the actual implementation period for energy efficiency requirements. As a building safety codes officer is designated in the “Building” safety system, a building safety codes officer retains the authority to inspect and enforce energy efficiency. As training is made available in May 2016, safety codes officers will be required to take that training in order to retain their certification.

Terms used within the QMP are not relevant to the authority of the safety codes officer to exercise powers and perform duties with respect to energy efficiency requirements. A review of the QMP wording will be jointly undertaken by the Safety Codes Council and Municipal Affairs to identify and adjust terms that may cause confusion for accredited authorities and safety codes officers.

ISSUE #4

Documentation of Design Compliance for Energy Efficiency and NECB 2011

Industry stakeholders and accredited authorities have raised questions respecting the acceptable means for demonstrating design compliance with the NECB 2011. There is a belief circulating that because the professional schedules do not specifically reference energy efficiency or the NECB 2011, the professional schedules cannot be used for documenting design compliance to the NECB 2011.

The ABC 2014 references the requirement for professional schedules, but the actual professional schedule forms are not part of the mandatory sections of the ABC 2014 or any previous building code edition. This means professional schedule forms may be changed at any time without amending the ABC 2014 or Building Regulation. Currently, the Building Sub-Council of the Safety Codes Council is working with stakeholders and Municipal Affairs to revise and modernize the professional schedules. This is why the terms related to energy efficiency were not identified on the professional schedules when energy efficiency code requirements were adopted.

Interpretation

The professional schedules are acceptable as documentation of professional involvement related to NECB 2011 and energy efficiency regulated under the Building Code Regulation. While there is no requirement to specifically reference energy efficiency in the professional schedules, the identification of energy efficiency provides certainty and confidence for both the authority having jurisdiction, designers, owners and other persons and organizations in the safety system.

The absence of a reference to energy efficiency on the professional schedule forms is not relevant to the validity of the professional schedules for the NECB 2011 or any other code. Under Article 2.4.3.1., Division C ABC 2014, the design of a project shall comply with the ABC 2014 and “other regulations made pursuant to the Safety Codes Act”; and, “the construction of the project will substantially comply with this Code and other regulations made pursuant to the
Safety Codes Act. This means that the professional schedules are subject to the Safety Codes Act and any applicable regulations and codes under the Act including the NECB 2011 and energy efficiency under the Building Code Regulation.

Buildings constructed to the NECB 2011 or buildings assessed by a safety codes officer to require professional involvement (i.e. because of complexity or risk) require evidence of professional involvement under the A, B and C schedules as referenced in the ABC 2014. The owner and professional have an obligation to satisfy the authority having jurisdiction that energy efficiency requirements have been considered and confirmed.

This INTERPRETATION is applicable throughout the province of Alberta.
# Heating Degree Day (HDD) Values for locations within Alberta

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CLIMATE ZONES FOR ENERGY CODES

Map of Alberta
Radon Mitigation Systems

Question:
Termination/intakes/windows/doors/piping materials: looking for clarity on piping materials and clearance to openings that may or may not be a source of potential contamination.
ABC requirements only speaks to the rough-in installation of the subfloor depressurization radon mitigation system, minimizing the potential entry of radon gas if the building is exposed to more that the suggested safe level of 200 becquerels per cubic meter.

Should a homeowner or builder install a radon mitigation system, the system design may utilize the design considerations provided in the "Reducing Radon Levels in Exiting Homes: A Canadian Guide for Professional Contractors" document as a best practice reference.
http://www.radonleaders.org/sites/default/files/HC%20Rn%20Mitigation%20Guide%20English_0.pdf

Venting of a radon mitigation system, although not specifically addressed within the ABC, would be interpreted as being similar to that of any typical exhaust device, and should be provided with the same clearances to intake openings as these other vents are required to provide. The NRC User's Guide provides information that a 3m clearance should be used, however a clearance of this magnitude would not be in keeping with the previously accepted clearances provided for other venting appliances within the ABC and the B149.1 Natural Gas and Propane Instillation Code.

Background Information:
2014 Alberta Building Code
9.32.3.13. Outdoor Intake and Exhaust Openings
3) The distance separating air intakes from building envelope penetrations that are potential sources of contaminants, such as gas vents or oil fill pipes, shall be not less than 900 mm (3 feet).

Extending the Vent Pipe
The extension of the pipe should be at least 100mm (4") in diameter and should be insulated to minimize condensation. If the pipe discharges independently through the roof, it should be located not less than 3m (9'10") from any other opening and extend not less than 300mm (12") above the roof's surface.
Alternatively, the pipe can discharge through an attic gable or an exterior wall. In the latter case, because the exhausted air may contain unacceptable concentrations of radon, re-infiltration of exhausted air into occupied space should be avoided by locating the discharge pipe not less than 300mm (12") above grade, not closer than 3m (9'10") from any other opening.

Standata G-01-10(Rev1)
See Attached
Reducing Radon Levels in Existing Homes: A Canadian Guide for Professional Contractors

In-line centrifugal fans specifically designed for radon mitigation are now available. Some airtight fan designs are available with sealed joints; some have the casing joints and electrical connections located on the suction side of the fan, so leakage from the fan is not a concern. Plastic plumbing pipe is now used routinely for the suction and exhaust ducting, with airtight solvent welded joints in the piping and airtight rubber plumbing couplers to the fan.

As properly installed fans and ducting will not leak soil air and radon into the building, the fan no longer needs to be located outside the building envelope, but can be mounted inside the building.

Piping

The preferred piping is solvent welded 100 mm Schedule 40 PVC or ABS. This is used for domestic drain, waste and vent plumbing, and the pipe, fixtures, and the skills to install the piping are readily available. A lighter Schedule 20 pipe is available, and is satisfactory where the pipe is unlikely to be damaged. The Plumbing Code can be used as a guide to installation. Systems can use 75 mm pipe in tight spaces, but the pressure drops and air noise will be higher. The fan sizing can be adapted for different pipe sizes by calculating the air velocity and Vp (dynamic head) for each section of pipe.

Labeling

An information label should be placed on the system piping in a prominent location indicating that it is part of a radon mitigation system. Similar labels should be placed on the service panel circuit breaker, fan disconnect switch, and sump pit covers. A label warning that the membrane is part of a radon mitigation system should be placed at the entrance to any space where sub-membrane Depressurization is in use.

Venting

Building codes reference standards that specify limits as to the termination of through-wall vents serving appliances that exhaust combustion products. The discharge from radon mitigation systems should be located similarly. Fan calculation (design suction/design airflow) will need to be determined. In most moderate size houses with granular fill beneath the floor slab, and no large air leaks into the sub-slab fill from the house or outdoors, a 40 to 60 watt "radon fan" will be large enough to produce the needed flows and pressures to effectively reverse the flow of soil gas from in to out of the house. However, if the house footprint is large, there are inaccessible openings in the floor slab, the soil highly porous, the sub-slab fill divided by footings, or the fill has high resistance to air movement; a higher power "radon fan" with larger flow or suction capacity may be needed.

Each fan-powered system should have a method to monitor fan performance. Examples include fan suction indicators such as manometers, gauges, switched electrical pressure sensors with warning light, and electrical power or amperage gauges. An alternative, particularly with indoor fans, is to provide a continuous radon monitor in the living area, which will monitor the system performance.

Intakes

Subsection 9.32.3. of the 2014 ABC deals with Heating-season Mechanical ventilation. Therefore the requirements for "air intakes" as described in Subsection 9.32.3. apply only to intake terminals serving the mechanical ventilation systems (e.g. those connected to furnaces, HRV's, make-up air units etc.). The 900 mm requirement stipulated under sentence 9.32.3.13.(3) does not apply to doors or windows.

Wiring

All wiring should comply with the relevant electrical codes, and electrical components should be CSA or UL listed or equivalent. Good practice dictates that the fan disconnect switch or plug should be within eyesight of the fan. An exterior fan should be hardwired to an internal junction box, with external wiring in conduit. No fan wiring should be run inside the suction or discharge piping or inside HVAC ducts.

There is a Standata in the works with respect to this. There are different approaches which can be taken, especially between local municipalities. The mitigation method chosen is influenced by the reduction in radon concentration required, the building type, and the costs associated with the method, including the running (energy) costs and the cosmetic aspects of the installation. A fan should be installed so that the flow is vertical, so that any condensation in the system will drain through the fan, rather than pooling in the casing.
SIDEWALL VENT TERMINATIONS

This bulletin has been jointly developed by Safety Services and the Gas Sub-Council to inform designers, vendors, builders, contractors and owners of the minimum code requirements to ensure safe and effective venting of gas-fired appliances.

Traditionally, gas appliances were designed with a draft hood or a draft diverter and depended on natural buoyancy to effectively vent products of combustion to the outdoors through the roof. Current efficiency requirements are resulting in more appliances with many different vent termination options. As the number of appliances being used in homes that have sidewall vent termination options increases, so has the issues with combustion products at those locations.

B149.1 – Natural Gas and Propane Installation Code

8.14.8 A vent shall not terminate
(a) where it may cause hazardous frost or ice accumulations on adjacent property surfaces;
(b) less than 7 ft (2.1 m) above a paved sidewalk or a paved driveway that is located on public property;
(c) within 6 ft (1.8 m) of a mechanical air-supply inlet to any building;
(d) above a regulator within 3 ft (900 mm) horizontally of the vertical centreline of the regulator vent outlet to a maximum vertical distance of 15 ft (4.5 m);
(e) except as required by Clause 8.14.8(d), any distance less than that of any gas pressure regulator vent outlet as detailed in Table 5.2;
(f) less than 1 ft (300 mm) above grade level;
(g) within the following distances of a window or door that can be opened in any building, of any nonmechanical air-supply inlet to any building, or of the combustion air inlet of any other appliance;
   (i) 6 in (150 mm) for inputs up to and including 10 000 Btu/hr (3 kW);
   (ii) 12 in (300 mm) for inputs from 10 000 Btu/hr (3 kW) up to and including 100 000 Btu/hr (30 kW); and
   (iii) 3 ft (900 mm) for inputs exceeding 100 000 Btu/hr (30 kW); and
(h) underneath a veranda, porch, or deck unless
   (i) the veranda, porch, or deck is fully open on a minimum of two sides beneath the floor; and
   (ii) the distance between the top of the vent termination and the underside of the veranda, porch, or deck is greater than 1 ft (300 mm).
Note: Alberta Building Code 2014 states:

9.32.3.13. Outdoor Intake and Exhaust Openings
3) The distance separating air intakes from building envelope penetrations that are potential sources of contaminants, such as gas vents or oil fill pipes, shall be not less than 900 mm (3 feet).

8.14.8(a) is an objective requirement that has no reference to caps, directional diversion, property line or building separations.

The issues that could be affected by frost and ice accumulations due to side yard vent terminations include adjoining property air inlets, appliance performance, windows, doors, building openings, property surfaces, mould, and moisture.

The items to consider for side wall vent terminations are:

1. Vents from category III or category IV appliances or appliances with special venting systems exceeding 35 000 Btuh.
2. Appliances that have some means of redirecting the exhaust plume.
3. Measurements
   (a) unobstructed distances to property lines of less than 4 ft. (1.2 m),
   (b) distances of 4 ft. (1.2 m) and up to 8 ft. (2.4 m), and
   (c) distances beyond 8 ft. (2.4 m).
4. Alcove installations.

Sidewall Vent terminations require:

- A vent from a category III or category IV appliance or an appliance with a special venting system exceeding 35 000 Btuh shall not extend through an exterior wall and terminate adjacent to the exterior wall unless there is a minimum unobstructed distance of 4 ft. (1.2 m) or greater from the foundation to the property line.
- A vent from a category III or category IV appliance or an appliance with a special venting system exceeding 35,000 Btuh that terminates into a side yard which measures not less than 4 ft. (1.2 m) from the foundation wall to property line, shall have a means of redirecting the vent plume with a certified fitting such as a "T", a 90 degree elbow, or termination acceptable to the Authority Having Jurisdiction, installed in accordance to the manufacturer's installation instructions.
- Distances greater than 8 ft. (2.4 m) will have no restriction.
- In an alcove installation the depth of the vent termination from the exterior face cannot exceed the separation between the two opposing walls.

Note: These requirements do not apply to locations where adjoining properties are public spaces such as road ways, alleyways, walkways or parks where structures would not normally be erected.
Rationale

- Revised to better reflect installation variations and concerns expressed by inspectors and contractors. Addresses all sidewall vented appliances not just category IV. Allows for unrestricted side terminations of special vent systems up to 35 000 Btuh. Appliances with less than 4 ft. (1.2m) clearance, which should cover such appliances as fireplaces and garage heaters under 35 000 Btuh which usually have shorter run times and not a lot of plume production.
- Appliances over 35 000 Btuh, venting within side yards with a width of not less than 4 ft. (1.2m) can be installed with discharge directed away from property lines. Most appliances allow for directional fittings and others already have termination caps such as on garage heaters and boiler venting. Appliances such as power vent water heaters over 35 000 Btuh are being used more and more for some space heating which increases run times and hence exhaust plumes. They need adequate space for proper plume dispersal and 4 ft. (1.2m) side yard terminations have resulted in numerous issues.
- Finally, as the note indicates, open public spaces adjoining the properties are exempt from the requirements.
Use this Section to specify a radon mitigation rough-in system, as listed below.

The radon mitigation rough-in system is to be designed, inspected, photographed and tested by a Canadian National Radon Proficiency Program (C-NRPP) Certified Mitigation Professional, obtained by the Prime Consultant.

Alberta Infrastructure has mandated the rough-in system in new Government of Alberta owned and supported permanent buildings, with the qualification that our department be open to alternative solutions proposed by the Certified Mitigation Professional. The “rough-in” is considered the benchmark. A roughed-in suction pit and cage sub-slab depressurization method is to be used for the system.

Edit, remove from or add to this Section in consultation with Alberta Infrastructure Technical Services Branch- Building Environment Unit specialists in radon control procedures (Phone: 780-422-7472, 780-422-7600 and 780-422-7440).

This Master Specification Section contains:

.1 This Cover Page

.2 Specification Section Text:

1. General
   1.1 Intent
   1.2 References
   1.3 Administration Requirements
   1.4 Delivery, Handling and Storage
   1.5 Environmental / Site Conditions
   1.6 Warranty
   1.7 Performance Requirements
   1.8 C-NRPP Inspection Requirements

2. Products
   2.1 Manufacturer
   2.2 Geotextile Fabric
   2.3 Gas Permeable Venting Layer
   2.4 Membrane Barrier System
   2.5 Suction Pit and Cage
   2.6 Collection Pipe Extensions from the Suction Pit and Cage

3. Execution
   3.1 Installation
1 General

1.1 INTENT

.1 This section describes the minimum requirements for the supply and installation of a radon mitigation rough-in system.

.2 The radon rough-in system is to be designed, inspected, photographed and tested by a Canadian National Radon Proficiency Program (C-NRPP) Certified Mitigation Professional, obtained by the Prime Consultant.

.3 If, after the building is completed and occupied, long term radon testing results indicate the rough-in system needs to be activated, the installed components provide radon gas extraction points from within the building. Follow Health Canada guidelines for long term radon testing. The Building Owner would then need to extend the extraction points to the outside of the building and mechanically vent the radon to the outside, so that radon levels are controlled within the building.

.4 If the system is activated, it must be capable of reducing and maintaining the radon concentration to as low as practicable below 200 Becquerels per cubic metre (Bq/m3) within the building, as per Health Canada guidelines.

1.2 REFERENCES

.1 Alberta Building Code 2014.


.3 ASTM applicable standards.


1.3 ADMINISTRATIVE REQUIREMENTS

.1 Pre-Installation Meeting:

.1 Contractor to arrange for a site meeting with the (C-NRPP) Certified Mitigation Professional to review existing conditions and all requirements related to materials, material handling and storage, installation, scheduling, testing, and quality assurance and control, to confirm compliance with manufacturer and installation requirements.
.2 Submittals:
    .1 Submit component product information to the (C-NRPP) Certified Mitigation Professional related to the system design drawings and specifications. This includes the geotextile fabric, gas permeable venting layer, membrane barrier system, suction pit and cage, collection/extension/riser piping, and sealing methods for the slab perimeters and penetrations.

    .2 Provide final as-building drawings to the (C-NRPP) Certified Mitigation Professional that indicate the final locations of the collection/extension/riser pipes and the suction pits and cages.

.3 Quality Control:
    .1 Component installation for the radon mitigation rough-in system is to be done by competent and skilled workers having a minimum of two (2) years experience installing vapour barriers, sealants and waterproofing membranes.

    .2 Installation workers are also to obtain appropriate training on radon mitigation systems from the (C-NRPP) Certified Mitigation Professional and the component product manufacturers.

    .3 (C-NRPP) Certified Mitigation Professional to have on-going meetings with the Contractor to discuss and confirm compliances with the system design drawings and specifications.

1.4 DELIVERY, HANDLING AND STORAGE

    .1 Ensure all products delivered to the site meet manufacturer’s quality requirements. Remove and do not use any defective products. Store and handle materials as per manufacturer’s requirements, recommendations and safety data sheets. Protect materials from construction and weather related damage using appropriate coverings and adequate ventilation.

1.5 ENVIRONMENTAL / SITE CONDITIONS

    .1 All products and materials are to be stored at temperatures and environmental conditions that conform to manufacturer guidelines.

    .2 Perform installation work only when the weather conditions are within installation guidelines established by manufacturer.

    .3 Do not proceed with membrane barrier system installation until confirmation by the (C-NRPP) Certified Mitigation Professional that the substrate preparation and condition is suitable.
.4 Do not proceed with the concrete slab pour until confirmation by the (C-NRPP) Certified Mitigation Professional that the membrane barrier system preparation and condition is suitable.

1.6 WARRANTY

.1 Provide a two (2) year warranty against slab perimeter and penetration sealing defects and/or deficiencies, and confirm that the materials meet performance specifications and installation requirements.

.2 Review all manufacturer’s requirements for warranty period before the commencement of work. Ensure that all materials and installations are in conformance with manufacturer and warranty requirements, system design, and requirements of this specification.

.3 All slab perimeter and penetration sealing defects and/or deficiencies that occur within the warranty period are to be corrected promptly by the Contractor at no expense to the Building Owner and the Province.

1.7 PERFORMANCE REQUIREMENTS

.1 Installation of the geotextile fabric, gas permeable layer, suction pits and cages, collection/extension/riser pipes, membrane barrier system, and sealing methods for the slab perimeters and penetrations for the building concrete in contact with the soil, is to comply with manufacturers requirements, system design, and the requirements of this specification.

.2 All system components are to be chemically compatible with the soil environment (ASTM E154-88).

.3 The radon rock (gas permeable venting layer) is to be a minimum 100 mm layer of clean, coarse, aggregate meeting Size #5 specifications as defined in ASTM C33 / C33M - 16 Standard Specification for Concrete Aggregates, and as stated in the EPA/625/R-92/016 - 1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings document. Other venting types may be proposed by the Certified Mitigation Professional in the system design.

.4 The radon membrane barrier system (also is the vapour barrier) is to be a minimum, 10 mil polyolefin based resin sheet membrane, meeting the requirements of ASTM E 1745-11. Other membrane barrier systems may be proposed by the (C-NRPP) Certified Mitigation Professional in the system design.

.5 Radon membrane barrier system is to be overlapped and sealed at all perimeters and floor slab penetrations to provide a continuous seal of the building area in contact with the soil, as per manufacturer requirements, system design, and the requirements of this specification.
.6 Install and seal floor drains, suction pits/cages and collection/extension/riser pipes in accordance with EPA/625/R-92/016 - 1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings.

1.8 C-NRPP INSPECTION REQUIREMENTS

.1 Four (4) inspections of the system components and rough-in installations will be performed by a (C-NRPP) Certified Mitigation Professional. The results of these activities will be photographed and documented in written inspection reports prepared by the Professional and provided to the Building Owner and Province.

.2 The inspections are as follows:

.1 The (C-NRPP) Certified Mitigation Professional will inspect and document all relevant materials and products brought to the site for the purposes of radon mitigation rough-in system (1st inspection).

.2 The (C-NRPP) Certified Mitigation Professional will inspect, document and approve the completed installation of collection/extension/riser pipes, suction pits and cages and gas permeable venting layer, prior to the membrane barrier installation (2nd inspection).

.3 The (C-NRPP) Certified Mitigation Professional will inspect, document and approve the integrity of the membrane barrier system. They are also to conduct depressurization testing of the membrane barrier system after completed installation, prior to the concrete slab pour over the membrane to seal it (3rd inspection and testing).

.4 The (C-NRPP) Certified Mitigation Professional will inspect, document and approve the completed installation of slab perimeter and penetration sealing and capping and labeling of the riser pipes, once the concrete slab pour is completed (4th inspection).

2 Products

2.1 MANUFACTURER

.1 No specific product manufacturers for the radon mitigation rough-in system are identified. All products shall conform to the applicable ASTM standards and the EPA/625/R-92/016 - 1994 technical design document, and as indicated in the design drawings and specifications. Materials and components included for use are to be approved by the (C-NRPP) Certified Mitigation Professional.

2.2 GEOTEXTILE FABRIC

.1 The geotextile fabric is to be installed on the subsoil below the radon rock gas permeable venting layer. The geotextile fabric protects the gas venting layer from being contaminated with fines from the subsoil. Other geotextile fabric layers can be proposed by the (C-NRPP) Certified Mitigation Professional in the system design.
.2 The geotextile fabric is to have the following physical characteristics:
   .1 Non-woven fiber construction with an apparent opening size of 0.15mm.
   .2 Unit weight of 340g/m² (ASTM D5261)
   .3 Grab tensile strength of 1100 N (ASTM D4632).
   .4 Elongation of from 45 to 105% (ASTM D4632).
   .5 Trapezoid tear resistance of 450N (ASTM D4533).
   .6 Puncture resistance of 700N (ASTM D4833).
   .7 Mullen Burst of 3600Pa (ASTM D3786).

2.3 GAS PERMEABLE VENTING LAYER

   .1 The gas permeable venting layer (radon rock) is to be a minimum 100 mm layer of clean, coarse, aggregate meeting Size #5 specifications as defined in ASTM C33 / C33M - 16 Standard Specification for Concrete Aggregates, and as stated in the EPA/625/R-92/016 - 1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings document. Other types of venting layers may be proposed by the (C-NRPP) Certified Mitigation Professional in the system design.

2.4 MEMBRANE BARRIER SYSTEM

   .1 The radon membrane barrier system (also the vapour barrier) is to be a minimum, 10 mil polyolefin based resin sheet membrane, meeting the requirements of ASTM E 1745-11. Other membrane barrier systems may be proposed by the (C-NRPP) Certified Mitigation Professional in the system design.

   .2 All membrane seams are to be prepared, overlapped and sealed as per the manufacturer’s recommendations.

   .3 Supply and install Blueskin WP 200, or an approved alternative by the (C-NRPP) Certified Mitigation Professional, as a transition between the radon membrane and upturn onto grade beams, foundation walls, footings or any item that penetrates the finished floor slab. Joints are to be designed to accommodate anticipated movement.

   .4 The membrane is to be terminated with an upturn at the perimeter grade beams, foundation walls, footings and strip footings, and terminate between the beam, wall or footing and finished floor slab. Membrane is to terminate midway through the floor slab and be sealed and secured using Blueskin Termination Bar, mechanically fastened to the beam or footing on 300mm centers. Sealant to be applied to junction between membrane to footing, wall or beam, above Termination Bar.
Gas tight seals are to be provided around the surfaces of all vertical penetrations. Such surfaces are to be prepared as per manufacturer’s requirements to facilitate membrane adherence. Use Blueskin WP 200, sealants and construction tape as required to provide a continuous seal between radon membrane and any pipe, conduit or other item that penetrates the floor slab.

Once concrete floor slab has cured sufficiently to allow work to proceed on it, apply sealant to all penetration junctions on the top side of the finished floor slab.

2.5 SUCTION PIT AND CAGE

The suction pits and cages are to be designed by the (C-NRPP) Certified Mitigation Professional. This method exposes void areas in the gas permeable venting layer to facilitate depressurization, if required.

The suction pit area is to be sized to fit a galvanized metal suction pit cage. The cages are used to prevent the gas permeable venting layer from entering the suction pits.

Ensure that a vertical collection riser pipe extends from the suction pit and cage to 300 mm above the finished floor slab. Horizontal collection/extension pipes may be required in the system design.

2.6 COLLECTION, EXTENSION AND RISER PIPES

The collection, extension and riser pipe locations are to be designed by the (C-NRPP) Certified Mitigation Professional, and shown on the design drawings. Collection pipes are to be placed into the clear granular material / gas permeable venting layer having a minimum, thickness of 100mm.

The collection, extension and riser pipes are to consist of a minimum Schedule 40 non-perforated smooth walled 100mm (inside) diameter rigid pipe of PVC, High Density PE or ABS construction.

The collection, extension and riser pipes are to be installed in accordance with the EPA/625/R-92/016 - 1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings document.

A single vertical riser pipe is to be installed at each suction pit and cage location and extend from the suction pit and cage to 300mm above the finished floor slab.

The system design by the (C-NRPP) Certified Mitigation Professional may use collection piping or sleeves to draw radon gas from multiple sub-slab areas to a single suction pit, to minimize the number of suction pits. This would require holes to be created, as shown in the design, through the perimeter grade beams, foundation walls, footings and strip footings to allow piping to run through.
3 Execution

3.1 INSTALLATION

.1 Contractor to review footing, wall and grade beam building construction drawings, and review radon mitigation rough – in system design drawings and specifications to ensure proper understanding before installation. Discuss with the (C-NRPP) Certified Mitigation Professional as required.

.2 All installation work is to be inspected and documented by the (C-NRPP) Certified Mitigation Professional.

.3 Each individual sub-slab area isolated by building footings, foundation walls or grade beams is to be connected to an installed radon roughed-in mitigation system. The system design may use collection piping to draw radon gas from multiple sub-slab areas to a single suction pit, to minimize the number of suction pits.

.4 Prepare sub-grade surface prior to installation of the geotextile fabric, suction pits and cages, and collection, extension and riser piping, as per the elevations specified in the building construction drawings and radon mitigation rough – in system design drawings and specifications.

.5 Place geotextile fabric layer over the entire sub-grade surface, with sufficient overlaps as per the manufacturer's requirements.

.6 Construct and install the suction pits and cages as close to the center of the sub-slab area as practicable, as per the radon mitigation rough – in system design drawings and specifications and manufacturer’s requirements.

.7 Install collection/extension/riser pipes in locations as per the radon mitigation rough – in system design drawings.

.8 The collection pipes are to be placed within the gas permeable venting layer.

.9 All pipe joints are to be solvent welded and fully inserted into coupling or fitting to ensure joint integrity as per manufacturer’s instructions.

.10 If the riser pipe penetrations through the floor slab cannot be installed in the center of the sub-slab area, an extension pipe must be installed so that it extends from the center of the suction pit and cage to the preferred pipe slab penetration location.
.11 Riser pipe floor slab penetrations are not to interfere with planned future use of the interior space. Confirm riser pipe penetration locations with the C-NRPP Mitigation Professional on site prior to installation.

.12 The space around the riser pipe installations must be considered for possible future pipe extensions. Future exterior exhaust locations are to be located a minimum of 2.0 meters from any opening in the building or adjacent building.

.13 Riser pipe installations are to ensure the same sized exhaust pipe extensions can be made to the exterior of the building through the wall or roof system, if required in the future.

.14 The gas permeable venting layer (radon rock) is to be a minimum 100 mm layer of clean, coarse, aggregate meeting Size #5 specifications as defined in ASTM C33 / C33M - 16 Standard Specification for Concrete Aggregates, and as stated in the EPA/625/R-92/016-1994 Radon Prevention in the Design and Construction of Schools and Other Large Buildings document.

.15 The gas permeable venting layer (radon rock) is to be constructed by placing, grading and compacting (if required structurally) it over the entire sub-grade surface, geotextile layer and collection/extension/riser piping. Ensure the suction pit and cage area remains clear of the gas permeable venting layer (radon rock).

.16 At completion of the substrate, component and gas permeable venting layer, the Contractor is to contact the (C-NRPP) Certified Mitigation Professional to inspect the installation of this portion of the system. Results are to be documented by the (C-NRPP) Certified Mitigation Professional.

.17 When acceptance of the substrate, component and gas permeable venting layer installation has been provided by the (C-NRPP) Certified Mitigation Professional, the membrane barrier system construction can commence.

.18 Membrane barrier system is to be placed over the gas permeable venting layer (radon rock). All membrane overlaps and sealing is to be done as per the manufacturer’s requirements and specifications.

.19 Membrane barrier system installation is to be performed by trained qualified installers using manufacturer’s recommended techniques and equipment.

.20 Membrane barrier system is to be a minimum, 10 mil polyolefin based resin sheet membrane, meeting the requirements of ASTM E 1745-11.

.21 Membrane barrier system is to be installed and sealed around all vertical penetrations with sufficient overlap and using Blueskin, sealant and construction tape or chemical welded seams as per manufacturer’s requirements and specifications. An approved alternative to the Blueskin may be made by the (C-NRPP) Certified Mitigation Professional in the system design drawings and specifications.
At completion of the membrane barrier system, Contractor is to contact the (C-NRPP) Certified Mitigation Professional to inspect the integrity of the membrane barrier system and conduct depressurization testing of the system. Results are to be documented by the (C-NRPP) Certified Mitigation Professional.

When acceptance of the radon mitigation rough - in system installation has been provided by the (C-NRPP) Certified Mitigation Professional, the floor slab construction can commence.

Care must be taken not to puncture the membrane excessively during floor slab construction. To limit membrane puncture during floor slab construction, items such as rebar chair supports designed with a wide base (instead of legs) are to be used to better spread the rebar load.

Once concrete floor slab has cured sufficiently to allow work to proceed on it, clean joint surfaces in accordance with manufacturer’s instructions and seal all finished floor slab perimeter cold joints and any other floor slab penetration junctions between dissimilar materials using high quality sealants suitable for use on each subject material surface. Test sealant to confirm adhesion with all surfaces prior to use. Joints are to be pre-designed to accommodate anticipated movement.

The above slab exposed open top of the riser pipes must be capped and 100% solvent welded to provide a complete seal.

The above slab exposed riser pipe and cap are both to be labeled to identify them as part of the “Radon Mitigation Rough-in System”.

At completion of the slab perimeter and penetration sealing and capping and labeling of the exposed riser pipes, Contractor is to contact the (C-NRPP) Certified Mitigation Professional to conduct feasibility and fan flow estimate tests (please refer to Chapter 4, Health Canada – Reducing Radon Levels in Existing Homes: A Canadian Guide for Professional Contractors). Results are to be documented by a (C-NRPP) Certified Mitigation Professional.

When acceptance of the installation of the slab perimeter and penetration sealing and capping and labeling of the exposed riser pipes has been provided by the (C-NRPP) Certified Mitigation Professional, the passive radon mitigation rough-in system is considered complete.

Deficiencies in the radon mitigation rough - in system are to be corrected in accordance with this specification and as per instructions from the (C-NRPP) Certified Mitigation Professional.

END OF SECTION
ABC 9.36 - Hot Water Heating Systems

Question?
Is the requirement for insulation for the first 2 meters on a hot water pipe a must?
When would it be applicable?
Sub-Section 9.36.4 is concerned with the efficient use of energy by systems used to heat service water for household use. For this purpose, the ABC has included a prescriptive requirement for the inlet and outlet piping of a heating vessel to be insulated with at least 12mm thick insulation. Designs utilizing NECB are also required to provide insulation around the piping, unless the piping system is within a dwelling unit, feeds only that dwelling unit, and is not part of the suction-line piping for a direct expansion system.

Background Information:
2014 Alberta Building Code requirements
9.36.4.4. Piping
1) The first 2 m of outlet piping downstream and of inlet piping upstream leading from a storage tank or heating vessel shall be covered with piping insulation that is at least 12 mm thick.

2) All piping forming part of a continuously operating recirculating service water heating system shall be covered with piping insulation that is at least 12 mm thick.

3) Where piping forming part of the service water heating system is located outside the building envelope or in an unconditioned space, it shall be insulated to a thermal resistance not less than the effective thermal resistance required for the exterior above-ground walls.

Functional Statements - 9.36.4.4. Piping
(1) [F93,F96-OE1.1]
F93 To limit the amount of uncontrolled thermal transfer through system components.
F96 To limit the unnecessary demand and/or consumption of energy for service water heating.

OE1 Resources
An objective of this Code is to limit the probability that, as a result of the design or construction of the building or facility, resources will be used in a manner that will have an unacceptable effect on the environment. The risks of unacceptable effect on the environment due to use of resources addressed in this Code are those caused by - OE1.1 – excessive use of energy

2011 National Energy Code of Canada for Buildings
5.2.5.3. Piping Insulation
1) Except as provided in Sentences (2) to (5), piping forming part of an HVAC system shall be thermally insulated in accordance with Table 5.2.5.3.
2) Except for suction-line piping of direct expansion systems, piping located within conditioned space in a dwelling unit and serving only that dwelling unit need not comply with Sentence (1).
ABC 9.36
U value vs R-Value

Question?
What is the difference between U value and R value and how do you calculate both? Can you provide some examples of these calculations.

R Value is used in Industry
RSI Value is used in the Codes
U value is used by window and door manufacturers

U-Values gauge how well a material allows heat to pass through. The lower the U-Value, the greater a product's resistance to heat flow and the better its insulating value.

For Example:
1) R Value of 22. What are the U and RSI values?
   a) R Value divided by 5.678263 = (R 22 / 5.678263) = 3.87 RSI
   b) U Value = 1 / RSI (1 / 3.87 RSI) = 0.26 U Value

2) RSI Value of 10.43 (Ceilings and Attics). What are the R and U Values?
   a) RSI 10.43 X 5.678263 = 59.22 R Value
   b) 1 / RSI 10.43 = 0.1 U Value

3) U Value of 1.6. What are the R and RSI Values?
   a) 1 / U 1.6 = 0.625 RSI
   b) 0.625 RSI X 5.678263 = 3.5 R Value

Background Information:
2014 Alberta Building Code requirements
9.36.1.2. Definitions
For the purpose of this Section, the term "overall thermal transmittance," or U-value, shall mean the rate, in W/(m2·K), at which heat is transferred through a building assembly that is subject to temperature differences. (See Appendix A.)

3) For the purpose of this Section, the term "effective thermal resistance," or RSI value, shall mean the inverse of the overall thermal transmittance of an assembly, in (m2·K)/W. (See Appendix A.)

A-9.36.1.2.(2) Overall Thermal Transmittance. The U-value represents the amount of heat transferred through a unit area in a unit of time induced under steady-state conditions by a unit temperature difference between the environments on its two faces. The U-value reflects the capacity of all elements to transfer heat through the thickness of the assembly, as well as, for instance, through air films on both faces of above-ground components. Where heat is not transferred homogeneously across the area being considered, the thermal transmittance of each component is determined: for example, the thermal transmittance values of the glazing
and the frame of a window are combined to determine the overall thermal transmittance (U-value) of the window.

A-9.36.1.2.(3) Conversion of Metric Values to Imperial Values. To convert a metric RSI value to an imperial R-value, use 1 \((m^2\cdot K)/W = 5.678263 \cdot ft^2 \cdot °F/Btu\). “R-value,” or simply the prefix “R” (e.g. R20 insulation), is often used in the housing industry to refer to the imperial equivalent of “RSI value.” Note that R-values in Section 9.36. are provided for information purposes only; the stated metric RSI values are in fact the legally binding requirements.
Plan Reviews and Permit Conditions

Question?
Should comments on Building Plans at issuance be included on the Permit Conditions?
The Safety Codes Act is the document which legislates that terms and conditions may be included in a permit. Although it is not a requirement to provide permit conditions to the applicant, it would seem appropriate that any comments or noted deficiencies outside the legislative requirements of the ABC found during a plan review, would be reiterated to the client within the permit conditions to advise the client of these items at the design stage, rather than waiting to address them during construction and the following site inspections.

Including comments from a plan review as permit conditions also provides an SCO with legislative backing for enforcement should the owner or contractor deviate or contravene the permit conditions.

As a measure of good practice, permit conditions should also be reviewed by an SCO during site inspections to ensure all noted deficiencies, revisions, or necessary documentation identified at the plan review stage and noted within the permit conditions have been addressed and in place for the file.

Background Information:
Safety Codes Act
Permit issues
44(1) On receipt of an application, a safety codes officer or other person designated by an Administrator may issue a permit to a person who complies with the requirements of this Act or issue a permit with respect to a thing, process or activity if it complies with the requirements of this Act.

(2) A safety codes officer or other person designated by an Administrator may include terms and conditions in a permit.

2014 Alberta Building Code
2.2.10.6. Deviations
1) The owner shall not deviate nor authorize a deviation from the requirements of this Code or the conditions of a permit without first obtaining permission in writing to do so from the authority having jurisdiction.

2.2.10.7. Permit Revoked
1) The authority having jurisdiction may revoke a permit if
a) there is a contravention of any condition under which the permit was issued,
b) the permit was issued in error, or
  c) the permit was issued on the basis of incorrect information.
Plan Reviews and Patient Care
Farm Buildings

Question?
What does and does not constitute a farm building? Can storage of personal items be included in the use of a farm building?
The definition of a "farm building" and the examples provided in the Appendix, provide clarification towards the intended use of the building, and that the building is being used for a form of agricultural operation. This would include livestock housing, horse riding facilities where no public is permitted, and farm workshops.

Buildings associated with the residential dwelling such as a garage or accessory building which is associated by use to the dwelling would not fall under the definition of a farm building. This would include such uses as storage areas for items related to the operation of the dwelling rather than the farm, storage of personal vehicles, and storage of recreational vehicles such as quads etc. if their use is not related to the farm operations.

Although permitting for a farm building may not be required, meeting the legislative requirements of the current Alberta Building Code or the National Farm Building Code of Canada would still be applicable for the construction of the building.

Background Information:
Permit Regulation
FARM BUILDINGS
"farm building" means a building located on agricultural land that is occupied for an agricultural operation as defined in the Agricultural Operation Practices Act, including, but not limited to,
(i) housing livestock,
(ii) storing, sorting, grading or bulk packaging of agricultural products that have not undergone secondary processing, and
(iii) housing, storing or maintaining machinery that is undertaken in the building;

2014 Alberta Building Code requirements
A-1.2.1.2.(1) Definition of Farm Buildings.
Farm buildings as defined in Article 1.2.1.2. of the National Farm Building Code of Canada include but are not limited to produce storage and packing facilities, livestock and poultry housing, milking centres, manure storage facilities, grain bins, silos, feed preparation centres, farm workshops, greenhouses, farm retail centres, and horse riding, exercise and training facilities.

5) This Code (ABC 2014) does not apply to
a) a building of low human occupancy associated with the operation of the farm or acreage on which it is located, where the building is used for the
i) housing of livestock,
ii) storage or maintenance of equipment, or
iii) storage of materials or produce,

A-1.1.1.1.(5)(a) Farm and acreage buildings include, but are not limited to, produce storage facilities, livestock and poultry housing, milking centres, manure storage facilities, grain bins, silos, feed preparation centres, farm workshops, and horse riding, exercise and training facilities not used by the public. Farm buildings may be classed as low or high human occupancy, depending on the occupant load.

Examples of farm buildings likely to be classed as low human occupancy as defined in Article 1.2.1.2. of the National Farm Building Code of Canada are livestock and poultry housing, manure and machinery storage facilities, and horse exercise and training facilities where no bleachers or viewing areas are provided.

Examples of buildings that would be classed as other than low human occupancy include farm retail centres for feeds, horticultural and livestock produce, auction barns and show areas where bleachers or other public facilities are provided. Farm work centres where the number of workers frequently exceeds the limit for low human occupancy are also in this category. It is possible to have areas of both high and low human occupancy in the same building, provided that the structural safety and fire separation requirements for high human occupancy are met in the part thus designated.

**Low Importance Category Buildings**
Low human-occupancy farm buildings are defined in the National Farm Building Code of Canada 1995 as having an occupant load of 1 person or less per 40 m² of floor area. Minor storage buildings include only those storage buildings that represent a low direct or indirect hazard to human life in the event of structural failure, either because people are unlikely to be affected by structural failure, or because structural failure causing damage to materials or equipment does not present a direct threat to human life.

**Section 1 from the Agricultural Operation Practices Act, Chapter A7**
“Agricultural Land” means land the use of which for agriculture is either a permitted or discretionary use under the land use bylaw of the municipality or Métis settlement in which the land is situated or is permitted pursuant to the Municipal Government Act.

**Permit Regulation**
“Single Family Residential Dwelling” means a residential dwelling for a single family that includes, if applicable, a residential garage or accessory structure associated by use to the dwelling; if the garage or structure is situated on the same parcel of land as the dwelling.
Secondary Suite Development and ABC 9.36

Question?
If you have an existing dwelling unit built before the new energy code comes into effect, upon application of a secondary suite after Nov. 12016, how would an SCO do a plan review? Would the construction of the secondary suite fall under Part 9 or Section 9.36 as the construction of the existing house may not meet 9.36?

The ABC has exemptions which are permitted for existing construction under Article 1.1.1.2. Where an existing single dwelling unit develops a secondary suite after the implementation of Energy Efficiency requirements, the same thought process would also be used.

Existing construction would already be in place for exterior frost walls, insulation and vapour barrier, floor slab, windows and doors. If these items were being renovated, the AHJ would have the authority to ask that they meet the current Code, or to accept the level of building performance as being maintained.

New construction would be required to meet the current code legislation. For example, the installation of a new second furnace.

Background Information:
2014 Alberta Building Code requirements
1.1.1.2. Application to Existing Buildings
(See Appendix A.)
1) This Article applies to a building that has been legally built, occupied and used before 01 May 2015.
2) If a building is altered, rehabilitated, refurbished, renovated or repaired, the level of life safety and building performance shall not be decreased.
3) A change in occupancy or alteration of any building constructed before 01 May 2015 shall be permitted if the level of safety and building performance proposed are acceptable to the authority having jurisdiction.

A-1.1.1.2. Application to Existing Buildings. This Code is most often applied to existing buildings when an owner wishes to rehabilitate a building, change its use, or build an addition, or when an enforcement authority decrees that a building or class of buildings be altered for reasons of public safety. It is not intended that the Alberta Building Code be used to enforce the retrospective application of new requirements to existing buildings or existing portions of relocated buildings. For example, although the Alberta Fire Code could be interpreted to require the installation of fire alarm, standpipe and hose, and automatic sprinkler systems in an existing building for which there were no requirements at the time of construction, it is the intent of the Safety Codes Council that the Alberta Fire Code not be applied in this manner to these buildings unless the authority having jurisdiction has determined that there is an inherent threat to occupant safety and has issued an order to eliminate the unsafe condition, or where substantial changes or additions are being made to an existing building or the occupancy has been changed.....
....Whatever the reason, Code application to existing or relocated buildings requires careful consideration of the level of safety needed for that building. This consideration involves an analytical process similar to that required to assess alternative design proposals for new construction. See Clause 1.2.1.1.(1)(b) and its Appendix Note for information on achieving compliance with the Code using alternative solutions.

In developing Code requirements for new buildings, consideration has been given to the cost they impose on a design in relation to the perceived benefits in terms of safety. The former is definable; the latter difficult to establish on a quantitative basis. In applying the Code requirements to an existing building, the benefits derived are the same as in new buildings. On the other hand, the increased cost of implementing in an existing building a design solution that would normally be intended for a new building may be prohibitive.

The successful application of Code requirements to existing construction becomes a matter of balancing the cost of implementing a requirement with the relative importance of that requirement to the overall Code objectives. The degree to which any particular requirement can be relaxed without affecting the intended level of safety of the Code requires considerable judgment on the part of both the designer and the authority having jurisdiction.
Conditioned Space vs Unconditioned Space

Question?
Conditioned space vs unconditioned space, what is the difference between the two?
The ABC refers to spaces as being either conditioned space, unconditioned space, or the exterior. By definition, a conditioned space is any space within a building where the temperature is controlled through heating or cooling.

For example:
1) unheated garage – unconditioned space
2) unheated crawl space – unconditioned space
3) attic – unconditioned space

Background Information:
2014 Alberta Building Code requirements
Conditioned space means any space within a building the temperature of which is controlled to limit variation in response to the exterior ambient temperature by the provision, either directly or indirectly, of heating or cooling over substantial portions of the year.
Energy Efficiency

Question?
Can 2x4 walls be used for an attached garage under the 9.36 requirements?
The construction of the garage walls could implement 2x4 walls as long as the RSI value required for the garage can still be achieved.

A heated or non-heated attached garage for a single family dwelling (including one with a secondary suite) under 9.36.2.1.(8) specifies that the building envelope assembly which separates this heated or unheated garage space from unconditioned space or the exterior air must be provided with the requirements within 9.36.2. which includes the minimum RSI overall thermal resistance values.

Therefore, all of the walls forming part of an attached garage, whether it is heated or not, are required to provide a minimum RSI meeting the Tables provided in 9.36.

Background Information:
2014 Alberta Building Code
9.36.2. Building Envelope
9.36.2.1. Scope and Application
1) Except as provided in Sentences (2) and (6) to (8), this Subsection is concerned with the loss of energy due to heat transfer and air leakage through materials, components and assemblies, including their interfaces, forming part of the building envelope where it separates conditioned space from unconditioned space, the exterior air or the ground.

2) The requirements of this Subsection also apply to components of a building envelope assembly that separate a conditioned space from an adjoining storage garage, even if the storage garage is intended to be heated. (See Appendix A and A-9.36.1.3.(5) in Appendix A.)

8) The requirements of this Subsection also apply to components of a building envelope assembly that separate a heated or unheated attached garage from unconditioned space or the exterior air, where the attached garage serves
a) not more than one dwelling unit, or
b) a house with a secondary suite.

A-9.36.1.3.(5) Exemptions. Examples of buildings and spaces that are exempted from the requirements of Section 9.36. include seasonally heated buildings, storage and parking garages, small service buildings or service rooms and unconditioned spaces in buildings. However, note that, where a building envelope assembly of an exempted building is adjacent to a conditioned space, this assembly must meet the requirements of Section 9.36.

A-9.36.2.1.(2) Wall or Floor between a Garage and a Conditioned Space. A wall or a floor between a conditioned space and an adjoining storage garage must be airtight and insulated because, even if the garage is equipped with space-heating equipment, it may in fact be kept unheated most of the time.
Airtightness

Question #1
How do we get 9.36.2.9. Airtightness inspected? What if installation has already been covered by spray foam?
Upon enforcement of ABC Section 9.36, the local AHJ will have the opportunity to determine if or how additional inspections will be required. If the air barrier has been covered and cannot be viewed during an inspection, the local AHJ has the authority to ask for the air barrier to be uncovered, so that the inspection can take place.

Question #2
Many SCO's are concerned that installing an air barrier around the joist ends similar to what is shown in the diagram is not industry norm and are not sure how to enforce the requirements.
Article 9.36.2.10. identifies additional areas and joints where sealing of the air barrier must be made airtight. These Sentences provide options for sealing of these areas, and indicate that the seal can be achieved by either ensuring the joints between the structural members are sealed, or by covering with an air barrier, and sealing to the adjacent air barrier material.

Background Information:
2014 Alberta Building Code requirements
9.36.2.9. Airtightness
1) The leakage of air into and out of conditioned spaces shall be controlled by constructing
a) a continuous air barrier system in accordance with Sentences (2) to (6), Subsection 9.25.3. and Article 9.36.2.10.,
b) a continuous air barrier system in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a building assembly having an air leakage rate not greater than 0.20 L/(s-m2) (Type A4) when tested in accordance with CAN/ULC-S742, “Air Barrier Assemblies – Specification,” at a pressure differential of 75 Pa, or
c) a continuous air barrier system in accordance with Sentences (2) to (6) and Subsection 9.25.3. and a building assembly having an air leakage rate not greater than 0.20 L/(s-m2) when tested in accordance with ASTM E 2357, “Determining Air Leakage of Air Barrier Assemblies.” (See Appendix A.)

2) An air barrier system installed to meet the requirements of Sentence (1) shall be continuous
a) across construction, control and expansion joints,
b) across junctions between different building materials and assemblies, and
c) around penetrations through all building assemblies.

9.25.3.2. Air Barrier System Properties
2) Where polyethylene sheet is used to provide airtightness in the air barrier system, it shall conform to CAN/CGSB-51.34-M, “Vapour Barrier, Polyethylene Sheet for Use in Building Construction.”
9.36.2.10. Construction of Air Barrier Details

1) Materials intended to provide the principal resistance to air leakage shall conform to CAN/ULC-S741, “Air Barrier Materials – Specification.”

5) Where the air barrier system consists of flexible sheet material, all joints shall be
   a) lapped not less than 50 mm,
   b) sealed (see Appendix A), and
   c) structurally supported.

6) Sealant material used for the purpose of creating a continuous air barrier system shall
   a) be a non-hardening type, or
   b) conform to
      i) Subsection 9.27.4.,
      ii) CAN/ULC-S710.1, “Thermal Insulation – Bead-Applied One Component Polyurethane
          Air Sealing Foam, Part 1: Material Specification,” or
      iii) CAN/ULC-S711.1, “Thermal Insulation – Bead-Applied Two Component Polyurethane
          Air Sealing Foam, Part 1: Material Specification.”

7) Penetrations by electrical wiring, outlets, switches or recessed light fixtures through the plane of airtightness shall be constructed airtight
   a) where the component is designed to provide a seal against air leakage, by
      sealing the component to the air barrier material (see Appendix A), or
   b) where the component is not designed to provide a seal against air leakage, by
      covering the component with an air barrier material and sealing it to the
      adjacent air barrier material.

8) The joints between the foundation wall and the sill plate, between the sill plate and rim joist,
    between the rim joist and the subfloor material, and between the subfloor material and the
    bottom plate of the wall above shall be constructed airtight by
    a) sealing all joints and junctions between the structural components, or
    b) covering the structural components with an air barrier material and sealing it to the adjacent
       air barrier material.

9) The interfaces between windows, doors and skylights and wall/ceiling assemblies shall be
    constructed airtight by sealing all joints and junctions between the air barrier material in the wall
    and the window, door or skylight frame. (See Appendix A.) (See also Subsection 9.7.6.)

10) Cantilevered floors and floors over unheated spaces or over the exterior shall be
    constructed airtight by one of the following methods or a combination thereof:
    a) sealing all joints and junctions between the structural components, or
    b) covering the structural components with an air barrier material and sealing it to the adjacent
       air barrier material.

11) Interior walls that meet exterior walls or ceilings whose plane of airtightness is on the interior
    of the building envelope and knee walls that separate conditioned space from unconditioned
    space shall be constructed airtight by
    a) sealing all junctions between the structural components,
    b) covering the structural components with an air barrier material and sealing it to the adjacent
       air barrier material; or
c) maintaining the continuity of the air barrier system above or through the interior wall or below or through the knee wall, as applicable.

12) Steel-lined chimneys that penetrate the building envelope shall be constructed airtight by blocking the void between required clearances for metal chimneys and surrounding construction with sheet metal and sealant capable of withstanding high temperatures.

13) Masonry or concrete chimneys that penetrate the building envelope shall be constructed airtight by mechanically fastening a metal flange or steel stud that extends not less than 75 mm out from the chimney and sealing the air barrier material to it with a sealant capable of withstanding high temperatures.

14) Ducts that penetrate the building envelope shall be constructed airtight by sealing the penetration through the building envelope. (See Appendix A.)

15) Plumbing vent stack pipes that penetrate the building envelope shall be constructed airtight by
a) sealing the air barrier material to the vent stack pipe with a compatible sealant or sheathing tape, or
b) installing a rubber gasket or prefabricated roof flashing at the penetration of the plane of airtightness then sealing it and mechanically fastening it to the top plate.

16) Where a party wall meets the plane of airtightness, that junction shall be constructed airtight by sealing any voids within the party wall at the perimeter to the adjacent air barrier material and by
a) sealing all junctions between the structural components, or
b) covering the structural components with an air barrier material and sealing it to the adjacent air barrier material.

17) Where the concrete in a flat insulating concrete form wall acts as the air barrier, the continuity of the plane of airtightness shall be maintained between the concrete and adjacent air barrier materials.

A-9.36.2.10.(5)(b) Sealing the Air Barrier System with Sheathing Tape. One method of sealing air barrier materials at joints and junctions is to apply sheathing tape that has an acceptable air leakage characteristic, is compatible with the air barrier material and resistant to the mechanisms of deterioration to which the air barrier material will be exposed. Where an assembly tested to CAN/ULC-S742, “Air Barrier Assemblies – Specification,” includes sheathing tape as a component, the sheathing tape will have been tested for compatibility and resistance to deterioration and will be referenced in the manufacturer’s literature as acceptable for use with that air barrier assembly.
Commercial Kitchen Exhaust and MUA

Question #1
Are Make-Up Air Units and Exhaust fans required for Commercial kitchens?
Ventilation systems comprising of both exhaust fans and a supply of make-up air are required to be installed where commercial cooking equipment is installed. Typically this has been achieved through the installation of an exhaust hood meeting NFPA 96 and a supply of replacement air provided by an interconnected make-up air unit.

Question #2
Where residential cooking appliances are installed in a non-residential building, is make up air and ventilation still required?
The requirement for ventilation systems and make up air are also noted as a requirement under Part 9. Kitchens are to be provided with a ventilation fan, which must also be provided with make-up air unless the remaining appliances within the house are nonspillage-susceptible.

Background Information:
2014 Alberta Building Code requirements
6.2.2. Ventilation
6.2.2.1. Required Ventilation
1) Except as provided in Sentence (3), all buildings shall be ventilated in accordance with this Part.

6.2.2.7. Commercial Cooking Equipment
1) Systems for the ventilation of commercial cooking equipment shall be designed, constructed and installed to conform to NFPA 96, “Ventilation Control and Fire Protection of Commercial Cooking Operations,” except as required by Sentence 3.6.3.1.(1) and Article 3.6.4.2.

6.2.3.11. Makeup Air
1) In ventilating systems that exhaust air to the outdoors, provision shall be made for the admission of a supply of makeup air in sufficient quantity so that the operation of the exhaust system and other exhaust equipment or combustion equipment is not adversely affected.
2) Makeup air facilities required by Sentence (1) shall be interlocked with the exhaust devices they serve so that both operate together.

Pull info from NFPA 96

9.32.3.7. Supplemental Exhaust
(See Appendix A.)
1) Except as provided in Sentences (2) and (3), a supplemental exhaust fan with a rated capacity not less than 50 L/s shall be installed in each kitchen.
A-9.32.3.7. Supplemental Exhaust. The CAN/CSA-F326-M standard requires a certain amount of exhaust from kitchens to capture pollutants at the source. When the principal ventilation fan air intake is not located in the kitchen, a separate kitchen exhaust fan must be installed [see Sentence 9.32.3.7.(1)]. However, when the principal ventilation fan is located in the kitchen but is connected to multiple inlets, there will not be enough exhaust from the kitchen. Therefore, a separate kitchen exhaust fan is required in this circumstance as well, unless the exhaust rate of the principal ventilation fan can be increased when additional kitchen ventilation is needed [see Sentence 9.32.3.7.(3)].

The bathroom is another possible location for an air intake of a principal ventilation fan. As with the kitchen, if this option is not chosen, a separate bathroom exhaust fan must be installed [see Sentence 9.32.3.7.(4)].

Supplemental exhaust fans, which in most instances are located in kitchens and bathrooms, are required to be coupled to supply fans of similar capacity. The make-up air is necessary so that operation of the supplementary exhaust fan(s) will not depressurize the house [see Sentence 9.32.3.8.(2)]. See also Appendix Note A-9.32.3.8.

Makeup Air Requirements
Depressurization caused by the principal ventilation system itself is not an issue in houses with balanced systems (that is, non-exhaust-only systems). However, the operation of other exhaust devices, such as stove-top barbecues, can cause depressurization. Therefore, in a house with spillage-susceptible appliances, any such exhaust devices, including the required supplemental exhaust fans, must be provided with makeup air [see Sentence 9.32.3.8.(2)].

In the past, the Alberta Building Code and other codes and standards have tended to rely on the passive supply of makeup air through makeup air openings. This is no longer considered to be a reliable approach in the context of a simple, prescriptively described system without sophisticated controls on depressurization. Therefore, the makeup air must be provided by a supply fan that is automatically activated whenever the exhaust device that requires the makeup air is activated [see Sentences 9.32.3.8.(2) and (3)].

The need for makeup air can be avoided by not using spillage-susceptible combustion equipment.

9.32.3.8. Protection Against Depressurization
2) Except as provided in Sentences (6) to (8), any mechanical air exhausting device, other than the principal ventilation fan operating at a rate not greater than the permitted by Table 9.32.3.3., shall be provided with outdoor makeup air supplied by a fan rated to deliver outdoor air to the dwelling unit at a rate
   a) not less than the exhaust capacity of the device, and
   b) not greater than that exhaust capacity plus 10%.

8) The provision of makeup air as described in Sentence (2) is not required for mechanical exhausting devices operating a subfloor depressurization system installed for the purpose of reducing the risk of radon ingress.
Combustion Air for Appliances

Question?
Does the ABC require appliances to have air into the appliance (furnace) or can an SCO accept air into the mechanical room with the bucket? Many installers in the North say that they have problems with incoming air frosting up the appliance inlet when they bring air in from the outside.
The ABC specifies that an outdoor air supply duct must be installed between the outdoors and the furnace. The outdoor air supply duct must be connected either not less than 3m upstream of the plenum connection to the furnace, or be connected through an acceptable mixing device in the return air plenum. Additionally, starting on November 1, 2016 within 9.36, the outdoor air vent will also be required to provide a motorized damper.

Compliance accepted through non-prescriptive means should require an approved Alternative Solution, by meeting the intent of the ABC, and by demonstrating compliance paths either meeting or exceeding the ABC requirements.

Background Information:
2014 Alberta Building Code requirements
9.32.3.4. Ventilation Systems Used in Conjunction with Forced Air Heating Systems (See Appendix)
1) Where outdoor air is to be introduced to the dwelling unit through a forced air heating system, the provision of outdoor air shall comply with this Article.

5) An outdoor air supply duct shall be installed between the outdoors and the furnace return air plenum and shall be connected
   a) not less than 3 m upstream of the plenum connection to the furnace, as measured along the length of the duct, or
   b) through an acceptable mixing device installed in the return air plenum.

6) The outdoor air supply duct required by Sentence (5) shall incorporate a flow-regulating damper.

Supply duct means a duct for conveying air from a heating, ventilating or air-conditioning appliance to a space to be heated, ventilated or air-conditioned.

9.32.3.4. Ventilation Systems Used in Conjunction with Forced Air Heating Systems
F40,F43,F50,F52-OH1.1]
(a) [F43,F50,F53-OS3.4]
(b) [F43,F50,F81-OS3.4]
F40 To limit the level of contaminants.
F43 To minimize the risk of release of hazardous substances.
F50 To provide air suitable for breathing.
F52 To maintain appropriate relative humidity.
F53 To maintain appropriate indoor/outdoor air pressure differences.
9.36.3.3. Air Intake and Outlet Dampers
2) Except as provided in Sentences (3) and (4) and except in locations with fewer than 3500 heating degree-days as listed in Appendix C, every outdoor air intake duct or opening shall be equipped with a motorized damper that remains in the “open” position if the damper fails.

9.36.3.3. Air Intake and Outlet Dampers
(1) [F91,F95-OE1.1]
(2) [F91,F95-OE1.1]
F91 To limit the amount of uncontrolled air leakage through system components.
F95 To limit the unnecessary demand and/or consumption of energy for heating and cooling.
Radon Mitigation

Question?
Can the radon mitigation system requirements be met using gravel under the slab and a 2 x 2 pit filled with washed rock?
The ABC requires the rough-in for radon mitigation to be completed through the prescriptive requirements of granular material and a pipe as described in sentences 9.13.4.3.(1) & (3). Gravel alone does not meet the prescriptive requirements. The sentence also requires the installation of a pipe installed through the floor at or near the center of the floor. A pit or collection chamber could be installed at this central location, however a pipe located through the floor for the future connection of depressurization equipment would still be required.

Background Information:
2014 Alberta Building Code requirements
9.13.4.3. Providing for the Rough-in for a Subfloor Depressurization System
(See Appendix A.)
1) Floors-on-ground shall be provided with a rough-in for subfloor depressurization consisting of
   a) a gas-permeable layer, an inlet and an outlet as described in Sentence (2), or
   b) clean granular material and a pipe as described in Sentence (3).
2) The rough-in referred to in Clause (1)(a) shall include
   a) a gas-permeable layer installed in the space between the air barrier and the ground to allow
      the depressurization of that space,
   b) an inlet that allows for the effective depressurization of the gas-permeable layer (see A
      9.13.4.3.(2)(b) and (3)(b)(i) in Appendix A), and
   c) an outlet in the conditioned space that
      i) permits connection to depressurization equipment,
      ii) is sealed to maintain the integrity of the air barrier system, and
      iii) is clearly labelled to indicate that it is intended only for the removal of radon from below the
      floor-on-ground.
3) The rough-in referred to in Clause (1)(b) shall include
   a) clean granular material installed below the floor-on-ground in accordance with Sentence
      9.16.2.1.(1), and
   b) a pipe not less than 100 mm in diameter installed through the floor, such that
      i) its bottom end opens into the granular layer required Clause (a) at or near the centre of the
         floor and not less than 100 mm of granular material projects beyond the terminus of the pipe
         measured along its axis (see A-9.13.4.3.(2)(b) and (3)(b)(i) in Appendix A),
      ii) its top end permits connection to depressurization equipment and is provided with an airtight
         cap, and
      iii) the pipe is clearly labelled near the cap and, if applicable, every 1.8 m and at every change in
         direction to indicate that it is intended only for the removal of radon from below the floor-on-
         ground.
Sprinklering of Crawl Spaces

Question?
Is a crawl space required to be sprinklered under NFPA 13?
Under the 2014 ABC, sprinklers are required to be installed in crawl spaces. Because the ABC is the overarching legislation, the specific installation location requirements within NFPA 13 and NFPA 13R would be superseded, and therefore sprinkler heads should be installed for any building designed under the ABC and either of these standards.
NFPA 13R permits sprinkler heads to be omitted in crawl spaces under Section 6.6.6. NFPA 13 does not permit sprinklers to be omitted in crawl spaces.

Background Information:
2014 Alberta Building Code requirements
3.2.5.12. Automatic Sprinkler Systems
10) Notwithstanding the requirements of Sentence (2) regarding the installation of automatic sprinkler systems and except for buildings constructed in accordance with Article 3.2.2.50., in buildings of combustible construction, sprinklers shall be required in
a) porches and balconies,
b) public corridors,
c) stairs that are open and attached,
d) attics and floor/ceiling spaces,
e) penthouse equipment rooms,
f) elevator machine rooms,
g) concealed spaces dedicated exclusively to and containing only dwelling unit ventilation equipment,
  [g] crawl spaces
i) closets or storage rooms on exterior balconies, and
j) other concealed spaces that are not used or intended for living purposes or storage and do not contain fuel-fired appliances.

NFPA 13R
6.6 Location of Sprinklers.
6.6.6* Sprinklers shall not be required in attics, penthouse equipment rooms, elevator machine rooms, concealed spaces dedicated exclusively to and containing only dwelling unit ventilation equipment, crawl spaces, floor/ceiling spaces, noncombustible elevator shafts where the elevator cars comply with ANSI A17.1, Safety Code for Elevators and Escalators, and other concealed spaces that are not used or intended for living purposes or storage and do not contain fuel-fired equipment.

NFPA 13
8.1* Basic Requirements.
8.1.1* The requirements for spacing, location, and position of sprinklers shall be based on the following principles:
(1) Sprinklers shall be installed throughout the premises.
Secondary Suite Exits

Question?
Can the principle exit for a secondary suite exit through the attached garage of the house?
The previous 2006 Alberta Building Code was very clear that at least one exit was to be provided for each dwelling unit which lead directly to the outside. This specific wording was not included in the current 2014 ABC, however it is the intent of the 2014 ABC to ensure that each unit in a house with a secondary suite be provide with an exit which leads directly to the outside.
The definition of an exit and the examples provided in Appendix A, provide further clarification that a door from a secondary suite, through a garage area, would not meet the intent of a means of egress leading directly to an exit stair or directly to the outside. Although not as clearly worded as the 2006 ABC, the 2014 ABC provides an article which is intended to provide the same requirement. This Article is found under 9.9.7.5.(1), and requires that access to exiting for suites cannot be through other dwelling units, service rooms, or other occupancies.

Background Information:
Previous 2006 Alberta Building Code requirements
9.37.2.11. Means of Egress
1) Except as permitted in Sentence (2), each dwelling unit shall be provided with at least one exit that leads directly to the outside.

2) Dwelling units may share a common exit meeting the requirements of Article 9.37.2.13.

Current 2014 Alberta Building Code Requirements
Exit means that 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. (See Appendix A.)

Appendix A - Exit
Exits include doors or doorways leading directly into an exit stair or directly to the outside. In the case of an exit leading to a separate building, exits also include vestibules, walkways, bridges or balconies.

9.9.7.5. Independent Access to Exit
1) Required access to exit from suites shall not be through any other dwelling unit, service room or other occupancy.

F10 To facilitate the timely movement of persons to a safe place in an emergency.

9.9.9.1. Travel Limit to Exits or Egress Doors
1) Except as provided in Sentences (2), (3) and (4), every dwelling unit containing more than 1 storey shall have exits or egress doors located so that it shall not be necessary to travel up or down more than 1 storey to reach a level served by
a) an egress door to a public corridor, enclosed exit stair or exterior passageway, or
b) an exit doorway not more than 1.5 m above adjacent ground level.

9.9.9.3. Shared Egress Facilities
2) Where a dwelling unit is located above another dwelling unit or common space in a house with a secondary suite, the upper dwelling unit shall be provided with a second and separate means of egress where an egress door from that dwelling unit opens onto an exterior passageway that
   a) has a floor assembly with a fire-resistance rating less than 45 min,
   b) is served by a single exit stairway or ramp, and
   c) is located more than 1.5 m above adjacent ground level.

9.9.2.4. Principal Entrances
1) Except for doors serving a single dwelling unit or a house with a secondary suite including their common spaces, at least one door at every principal entrance to a building providing access from the exterior at ground level shall be designed in accordance with the requirements for exits.

9.9.9.2. Two Separate Exits
1) Except as provided in Sentence 9.9.7.3.(1) and except for dwelling units in a house with a secondary suite, where an egress door from a dwelling unit opens onto a public corridor or exterior passageway it shall be possible from the location where the egress door opens onto the corridor or exterior passageway to go in opposite directions to 2 separate exits unless the dwelling unit has a second and separate means of egress.
School Washrooms

Question?
Proposals have been made for schools to provide gender neutral washroom facilities. How should washrooms be labelled in a school and how are the calculations done to ensure the required number of facilities have been provided?

The provisions in the Alberta Building Code 2014 that address water closet (toilet) numbers for each sex are based on the wording of the National Building Code 2010.
The Alberta Building Code requires that water closets are to be provided for each sex. The Appendix note to this Sentence, however, better clarifies the intent: “It is deemed that rooms each containing a single water closet available for both males and females would satisfy the intent of the Code. The total number of water closets must be adequate for the total number of occupants.”

So while the wording of Sentence 3.7.2.2.(1) suggests that dedicated washroom facilities exclusive to each sex are required, the Appendix note qualifies that a gender-neutral washroom (washroom available for both females/males) containing a single water closet would satisfy the intent of the requirement as well.

Where a room containing a single water closet (such as a gender-neutral washroom) is provided, a lockable, full-height door is required. This requirement for the design of the room as stated, is an Alberta-specific requirement not contained within the National Building Code.

For Example: An establishment could therefore install individual gender-neutral universal toilet rooms in lieu of sex-specific washroom facilities as long as the total number of required washrooms based on the total occupant load is still provided. Additionally, washroom areas containing multiple water closets constructed with individual stalls meeting Sentence (17) with full height doors capable of being locked from the inside and full height walls to ensure unwanted visual surveillance was mitigated would also be acceptable.

Background Information:
2014 Alberta Building Code requirements
3.7.2.2. Water Closets
1) Except as permitted by Sentence (4), water closets shall be provided for each sex assuming that the occupant load is equally divided between males and females, unless the proportion of each sex expected in the building can be determined with reasonable accuracy. (See Appendix A.)

A-3.7.2.2.(1) Water Closets. Sentence 3.7.2.2.(1) assumes that there will be a sufficient number of persons in the building to justify the provision of separate water closet facilities for both males and females. In some circumstances overall low occupant loads would not require more than one water closet for males and one water closet for females and yet the building has
more than one storey. It is deemed that rooms each containing a single water closet available for both males and females would satisfy the intent of the Code. The total number of water closets must be adequate for the total number of occupants. Requirements for barrier free accessibility also need to be considered. If the entrance storey is accessible and the upper storeys are not required to be accessible, a room in the accessible storey must meet the requirements of Section 3.8. and can serve both males and females. If provided, a non-accessible room, designed to serve both males and females, in each non-accessible upper storey would be acceptable. Sentence 3.7.2.2.(4) permits a single water closet to serve both males and females if the total occupant load is low.

17) If a room contains
a) not more than 1 water closet, the doorway to the room shall be provided with a full-height door that is capable of being locked from the inside, or
b) no fewer than 2 water closets or at least 1 water closet and 1 urinal, the room shall be designed so that water closets, urinals and lavatories are not visible from the entrance to the room.

3.2.1.1. Functional Statements
F130 To limit unwanted visual surveillance.
Fire Alarm Systems Verification

Question?
3.2.4.5.(2) and CAN/ULC-S537-13. Proper format for verifications reports and acceptability?
There is documentation within the standard which provides a template example of the
documentation which could be used for the verification report. This is only an example,
and variations of it would also be acceptable.

Background Information:
2014 Alberta Building Code requirements:
3.2.4.5. Installation and Verification of Fire Alarm Systems
2) Fire alarm systems shall be verified in conformance
with CAN/ULC-S537, “Verification of Fire Alarm Systems,”
to ensure they are operating satisfactorily.

Getting Full Value and Safety From Fire Alarm Verifications
One of the most important points in the life safety cycle of
a building is the verification of the Fire Alarm System as
required after building construction or additions to the fire
alarm system. Unfortunately, it is also one of the most
misunderstood processes in the cycle by designers, installers, technicians and owners. This
lack of understanding by those responsible creates significant problems for building and fire
safety codes officers and may endanger the public.

One of the reasons for this concern is that the fire alarm system is almost invisible and is
therefore taken for granted by most occupants or users. If a building was commissioned and
occupied without a working plumbing, heating, electrical, or data system, the occupants would
quickly complain. When the keystone life safety system in a building is not operating or not fully
functional, few people, beyond perhaps the building operator, will necessarily be aware.

Verification of the fire alarm system happens at the end of the construction schedule. At this
time, there is often significant pressure from the general contractor, the coordinating
professional, the owner, tenants, and others to get into the building, and the fire alarm
verification process is seen as an obstacle rather than the critical quality, reliability and
effectiveness control process it is meant to be. Too often the registered engineering
professional or their representative, the fire alarm technicians, and the electricians are pushed
to “just get it over with.” This pressure, sometimes compounded by the costs of verification
being underpriced in the original bid process, can potentially result in a rushed verification. A
rushed job can mean that shortcuts are taken, and that assumptions are made and then
improperly translated into “facts” in the verification report, which may then be signed and sealed
by a registered engineering professional and submitted to the Building SCO as part of the
required schedules. If the registered engineering professional doesn’t review the verification
report in detail, these “rushed facts” are not evaluated and the critical life safety system in the
building—a system which, when designed, installed, and verified properly, would have a
reliability and effectiveness rate of over 99 per cent—can no longer be relied upon to the same
degree.

In short, the fire alarm installation and verification process is designed with checks and balances
specifically because these systems are critical. If everyone does their job well, successful
systems are virtually guaranteed. If somebody misses any of their responsibilities, systems will
fail, problems will be created, and in the worst possible extreme scenario, people may die. A
documented instance when these errors and omissions have occurred placed sleeping residents in significant danger and resulted in ongoing legal action. Fortunately no one was injured during this event.

The expectation of the Safety Codes Act, the Alberta Building Code 2014, and CAN/ULC-SS537-13 "Verification of Fire Alarm Systems" is that the forms laid out in Appendix C have been followed and completed exactly, and in their entirety. This is what the Building SCO anticipates and expects. They (SCO's) may not always go through a verification report line by line to make sure those who prepared and approved the report did not delete, alter, or modify anything. They may reasonably rely upon and accept the work of those responsible in good faith and at face value. Only if everyone completes the entire report without modifying will it meet the legal requirements set out by the Safety Codes Act and the Alberta Building Code (and sometimes the Alberta Fire Code).

Unfortunately, some companies, engineers, and technicians seem to be of the belief that they can alter or modify the forms in Appendix C (SS537). Altering the forms in any way that changes wording or order, or that eliminates any section, creates a violation of the Safety Codes Act and a potential liability to those involved.

However, if a company sets up a template on its own letterhead which covers everything in Appendix C, with the exact wording, referencing, and sequencing, and does the same for Building Code STANDATA 06-BC1-001-R1 Appendix A, again with the exact same information, wording, referencing, and sequencing, those forms would be acceptable when fully and completely filled out by, and under, the direction of the registered engineering professional and then signed and stamped by that registered engineering professional. The template must not change or remove anything.

While it is understood that the registered engineering professional does not usually directly "perform" the verification (and should not be operating the fire alarm equipment unless qualified to do so), it is expected that they direct and supervise the verification, preferably on site or through a competent and qualified person, and that they review the results and confirm all documentation prior to creating and submitting the full report and certificate to the Building SCO or through the coordinating professional. The owner is required to receive a copy of the report as well, which is required to remain available on site, for review by SCOs and service personnel, for the life of the fire alarm system.

Any changes, reordering, omissions, and inconsistencies from the required format that are made by those responsible, and the resulting non-compliance with code requirements and expectations, are not the responsibility of the Safety Codes Officer to find or fix. The responsibility for compliance lies with those who conduct and sign off on the verification on behalf of the owner.

Verification reports are usually accepted by SCOs in good faith, without reviewing them in detail, based upon the assumption and reasonable expectation that the registered engineering professional submitting the verification report has confirmed that all the required work has been completed and it has all been fully recorded on all the correct forms. The importance of the engineer's involvement here cannot be overstated.

The Safety Codes Officer needs to ensure that they are asking for and receiving a full and complete verification report for themselves and their employer which evidences the proper completion of required work and documentation by the responsible individuals. Those who conduct verifications are encouraged to focus on the importance that the safety codes system places upon their work, so that the overall state and quality of verification of fire alarm systems in Alberta can be increased. Fire alarm systems are the primary life safety systems in many buildings. Ensuring that they are verified properly will better assure the safety of all Albertans.
Stairway Lighting Control – Energy Code

Question?
Can lights in exits stairways (or corridors) be shut off, dimmed to a certain percentage or must they be on continuously?
The NECB requires that the interior lighting in buildings be controlled with automatic control devices which will shut off the lighting to spaces, with some exceptions noted within Sentence 4.2.2.1.(4). These exceptions include spaces which would endanger the safety or security of the occupants, operational requirements of a building, and patient care areas. NFPA 101 Sentence 7.8.1.2 indicates that illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use, unless otherwise provided.

However, the local AHJ has the authority to determine that a reasonable degree of safety is being provided in all situations.

Background Information:
2011 NECB

4.2.2. Interior Lighting Controls
4.2.2.1. Automatic Lighting Shut-off Controls (See Appendix A.)
1) Except as provided in Sentence (4), interior lighting in buildings shall be controlled with automatic control devices to shut off building lighting in all spaces.

2) The automatic control devices referred to in Sentence (1) shall be a) time-of-day operated control devices that turn lighting off at scheduled times,
   b) occupant sensors that turn lighting off within 30 minutes of a space being unoccupied, or
   c) a signal from another control or alarm system that indicates the area is unoccupied.

3) A time-of-day operated control device provided in accordance with Clause (2)(a) shall not have the capability of being overridden by more than two hours.

4) The requirements of Sentence (1) shall not apply to a) lighting required round the clock due to operational requirements,
   b) lighting in spaces where patient care is rendered, and
   c) lighting in spaces where an automatic shut-off would endanger the safety or security of its occupants.
A-4.2.2.1. Automatic Control Devices. "Occupant sensors" refers to motion sensors, presence sensors, vacancy sensors, and other similar devices. Products that allow for on-site calibration of their sensitivity are recommended as they allow situations of false tripping to be managed. Using controllable circuit breakers as a means of automatic control is only permitted when they are connected to sensors.

NFPA 101- 2012 Edition:
7.8 Illumination of Means of Egress.
7.8.1 General.
7.8.1.1* Illumination of means of egress shall be provided in accordance with Section 7.8 for every building and structure where required in Chapters 11 through 43. For the purposes of this requirement, exit access shall include only designated stairs, aisles, corridors, ramps, escalators, and passageways leading to an exit. For the purposes of this requirement, exit discharge shall include only designated stairs, aisles, corridors, ramps, escalators, walkways, and exit passageways leading to a public way.

7.8.1.2 Illumination of means of egress shall be continuous during the time that the conditions of occupancy require that the means of egress be available for use, unless otherwise provided in 7.8.1.2.

7.8.1.2.1 Artificial lighting shall be employed at such locations and for such periods of time as are necessary to maintain the illumination to the minimum criteria values herein specified.

7.8.1.2.2 Unless prohibited by Chapters 11 through 43, automatic, motion sensor-type lighting switches shall be permitted within the means of egress, provided that the switch controllers comply with all of the following:
(1) The switch controllers are listed.
(2) The switch controllers are equipped for fail-safe operation and evaluated for this purpose.
(3) The illumination timers are set for a minimum 15-minute duration.
(4) The motion sensor is activated by any occupant movement in the area served by the lighting units.
(5) The switch controller is activated by activation of the building fire alarm system, if provided.

7.8.1.2.3* Energy-saving sensors, switches, timers, or controllers shall be approved and shall not compromise the continuity of illumination of the means of egress required by 7.8.1.2.

7.8.1.3* The floors and other walking surfaces within an exit and within the portions of the exit access and exit discharge designated in 7.8.1.1 shall be illuminated as follows:
(1) During conditions of stair use, the minimum illumination for new stairs shall be at least 10 ft-candle (108 lux), measured at the walking surfaces.
(2) The minimum illumination for floors and walking surfaces, other than new stairs during conditions of stair use, shall be to values of at least 1 ft-candle (10.8 lux), measured at the floor.
(3) In assembly occupancies, the illumination of the walking surfaces of exit access shall be at least 0.2 ft-candle (2.2 lux) during periods of performances or projections involving directed light.
(4)* The minimum illumination requirements shall not apply where operations or processes require low lighting levels.

7.8.1.4* Required illumination shall be arranged so that the failure of any single lighting unit does not result in an illumination level of less than 0.2 ft-candle (2.2 lux) in any designated area.
7.8.1.5 The equipment or units installed to meet the requirements of Section 7.10 also shall be permitted to serve the function of illumination of means of egress, provided that all requirements of Section 7.8 for such illumination are met.

7.8.2 Sources of Illumination.
7.8.2.1* Illumination of means of egress shall be from a source considered reliable by the authority having jurisdiction.

7.8.2.2 Battery-operated electric lights and other types of portable lamps or lanterns shall not be used for primary illumination of means of egress. Battery-operated electric lights shall be permitted to be used as an emergency source to the extent permitted under Section 7.9.

7.2.2.5.11 Exit Stair Illumination. Exit enclosures where photoluminescent materials are installed shall comply with all of the following:
(1) The exit enclosure shall be continuously illuminated for at least 60 minutes prior to periods when the building is occupied.
(2) The illumination shall remain on when the building is occupied.
(3) Lighting control devices provided for illumination within the exit enclosure shall meet all of the following requirements:
(a) Lighting control devices that automatically turn exit enclosure lighting on and off, based on occupancy, shall be permitted, provided that they turn on illumination for charging photoluminescent materials for at least 60 minutes prior to periods when the building is occupied.
(b) Lighting used to charge photoluminescent materials shall not be controlled by motion sensors.
(c) Lighting control devices that dim the lighting levels within the exit enclosure shall not be installed unless they provide a minimum of 1 ft-candle (10.8 lux) of illumination within the exit enclosure measured at the walking surface.

NFPA 101 - 2012 Edition
4.6 General Requirements.
4.6.1 Authority Having Jurisdiction.
4.6.1.1 The authority having jurisdiction shall determine whether the provisions of this Code are met.

4.6.1.2 Any requirements that are essential for the safety of building occupants and that are not specifically provided for by this Code shall be determined by the authority having jurisdiction.
4.6.1.3 Where it is evident that a reasonable degree of safety is provided, any requirement shall be permitted to be modified if, in the judgment of the authority having jurisdiction, its application would be hazardous under normal occupancy conditions.

4.6.1.4 Technical Assistance.
4.6.1.4.1 The authority having jurisdiction shall be permitted to require a review by an approved independent third party with expertise in the matter to be reviewed at the submitter’s expense. [1:1.15.1]

4.6.1.4.2 The independent reviewer shall provide an evaluation and recommend necessary changes of the proposed design, operation, process, or new technology to the authority having jurisdiction. [1:1.15.2]

4.6.1.4.3 The authority having jurisdiction shall be authorized to require design submittals to bear the stamp of a registered design professional. [1:1.15.3]
Pull Stations and Lower Exits Update

Question?
Residential buildings more than 3 storeys in building height are being designed with the main floor suites having egress doors that lead directly to the street. These doors permit the occupants to not have to use the public corridor in the case of an emergency, and therefore have no access to a pull station. The wording of the 2014 ABC clause 3.2.4.17.(1)(b) requires that a pull station be installed in "every floor area near every exit". Would the exterior doors (ie. patio door) on the main floor suites require a pull station?

Further review and discussion on this question was brought forward to NRC. Interpretation provided by NRC determined that an exterior egress doorway such as a patio door installed in a suite of a building referenced under sentence 3.2.4.17.(1) would not meet the intent of the sentence, or the definition of an exit (required or not), and would not require the installation of a pull station at these locations.

Background Information:
3.2.4.17. Manual Stations
1) Except as permitted by Sentences (2) and (3), where a fire alarm system is installed, a manual station shall be installed in every floor area near
a) every principal entrance to the building, and
b) every exit.

2) In a building that is sprinklered throughout, a manual station is not required at an exterior egress doorway from a suite that does not lead to an interior shared means of egress in a hotel or motel not more than 3 storeys in building height, provided each suite is served by an exterior exit facility leading directly to ground level.

3) In a building that is sprinklered throughout, a manual station is not required at an exterior egress doorway from a dwelling unit that does not lead to an interior shared means of egress in a building not more than 3 storeys in building height containing only dwelling units, provided each dwelling unit is served by an exterior exit facility leading directly to ground level.

4) In a building referred to in Sentences (2) or (3), manual stations shall be installed near doorways leading from shared interior corridors to the exterior.

NRC Response
Your question:
This issue specifically deals with clause 3.2.4.16.(1)(b). This same wording appears in article 3.2.4.16. of the 2015 NBC. This requires that a pull station be installed in "every floor area near every exit". Prior to the 2005 NBC the requirement was for a pull station at each "required" exit. The term "required" is no longer in the NBC. The situation at hand where this is causing difficulty is when there are main floor suites of a multi-storey building that have access to exit
doors in the interior to a corridor and also exterior doors to a patio or common area that leads to the street. The situation also occurs where a high rise building is built on a podium which includes townhouses that have access to an interior corridor as well as to a common area or patio that leads to the street. We have interpreted this article to require a pull station at the swinging door (sliding door would not count as exit door) that leads to the exterior patio or common area that leads to the street. We consider this door to be an exit that the occupants could use. Without a pull station at this door they could exit the building in a fire scenario without informing the remainder of the building of the hazard. We however, appear to be in a minority of municipalities that are enforcing this requirement in this way. We are also receiving a lot of kickback from the industry. We would appreciate if you could confirm or correct our interpretation of this article. We will endeavor to convey the confirmation or correction of the interpretation to other AHJ's in the province and elsewhere when received.

**Codes Canada response:**

The requirements for manual stations were revised in the 1995 edition of the National Building Code. Two proposed changes (OCC 145 and 228) on this issue were submitted for the 1993 public consultation. Following the consultation, the Standing Committee on Occupancy (SCO) decided to withdraw OCC 228 and to address comments on OCC 145. OCC 145, was developed by a group on sprinkler systems. The reason behind the change was:

As part of the proposal to increase the number of buildings in which sprinklers would be installed, it is proposed to require rudimentary fire alarm systems in a number of small residential buildings. These changes will permit the installation of a fire alarm system without having to install pull stations in residential buildings at the doors from suites that lead directly to the outdoors. However, pull stations would be required at the exits from interior corridors.

Further clarification of the intent of the Code that it should not be possible to leave the building by a normal exit without passing a manual pull station is also provided. Even though the principal entrance may not have been designed as an exit facility, many of the building occupants will be most familiar with this as the usual egress route and will tend to use it in an emergency.

Sentences 3.2.4.16.(2) and (3) were introduced for Group C buildings that would not have been required to have a fire alarm system if they were not sprinklered (see Sentences 3.2.4.1.(5) and (6) of the NBC 2015), and where "each suite has direct access to an exterior exit facility leading to ground level."

In addition, one of the comments raised by the public, which is related to your question, received the following response from the SC-O that clarifies the intent of Clause 3.2.4.16.(1)(b).

Regarding a comment questioning permission not to exempt patio doors for high buildings, it was noted that these are not normally designated as exits.

Therefore, Clause 3.2.4.16.(1)(b) was not intended to apply to patio doors that are not designated as exits. As an aside, a door designated as an exit, must comply with many code provisions, such as:

- Article 3.4.1.8. on transparent doors,
- Article 3.4.5.1. on exit signs,
- Article 3.4.6.11. on door threshold and obstruction of doors by hangings or draperies,
- Article 3.4.6.12. on door swing, and
- Article 3.4.6.16. on door release hardware.
“Hookah Bars”

Question?
Ventilation requirements for “hookah bars”. Smoking is smoking – why does the province not govern this; almost all combustible matter produces carcinogens when burned?
Alberta Health Services and Occupational Health and Safety are currently studying, managing and changing the legislation and requirements for smoking products and business in Alberta and will be ongoing into the future as it continues to be a health concern.

Background Information:
2014 Alberta Building Code requirements
6.2.1.1. Good Engineering Practice
2) Where a health or safety hazard to a worker could result from the production or dissemination of airborne contaminants or from oxygen deficiency in the air, the ventilation systems serving these spaces shall conform to the Occupational Health and Safety Act and its Regulations.

Waterpipe Smoking in Alberta

A Report by the Office of the Chief Medical Officer of Health
February 2012

“The Alberta Tobacco Reduction Act, Act 5A 2008 c.T3.8 currently prohibits smoking of tobacco in enclosed public places, workplaces and within five metres from a doorway, window or air intake to a public place or workplace. Waterpipe tobacco mixtures are prohibited under the legislation in the locations specified above; however, the legislation does not prohibit the use of herbal mixtures that do not contain tobacco. Alberta Health and Wellness lacks the capacity to monitor if mixtures do contain tobacco or not.”

Current Action in Alberta:
In Alberta, two research studies focusing on waterpipe use are currently underway. When completed, the findings from the research studies will be used to develop a waterpipe awareness campaign for Alberta. The awareness campaign will likely occur later in the 2012/2013 fiscal year in partnership between Alberta Health and Wellness and Alberta Health Services.

Moving forward:
Intervention will likely become more difficult as more establishments adopt waterpipe use. Early intervention will help to achieve desired outcomes. It is therefore proposed that Alberta Health and Wellness begin work on amending the Tobacco Reduction Act to prohibit the use of waterpipe smoking in public places, workplaces and within 5 meters from the doorway, window or air intake to a public place or workplace.
Having more restrictive legislation on waterpipes would reduce the amount of second-hand smoke that patrons and employees are exposed to; reduce the uncertainty and costs associated with determining if the product being smoked in a waterpipe actually contains tobacco or not; and create awareness
regarding the harmful effects of waterpipes, making it less appealing to youth and young adults. Although there may be concerns raised related to the cultural and religious use of waterpipes, this recommendation is nonetheless aligned with the direction of the World Health Organization.

Alberta Health Services - Waterpipe Smoking February 2014

"Recent Alberta research has found that even the non-tobacco, or "herbal" shisha products used in waterpipes produce toxic air pollutants – including carbon monoxide, volatile aldehydes and polyaromatic hydrocarbons. In fact, both the mainstream and second-hand smoke produced by herbal shisha contained these known cancer causing agents at levels equal to or greater than that of tobacco products.

Air quality in Shisha venues affects not only owners/operators of waterpipe venues, but also employees. If the waterpipe venue is part of a multi-unit building, people in adjacent units may also be adversely affected."

Link - https://www.albertaquiits.ca/files/AB/files/library/Waterpipe_smoking_FINAL.pdf

"Ventilation provides no solution to the problem of exposure to second-hand smoke." —Protection from second-hand tobacco smoke in Canada: Applying health science to occupational health and safety law (Collishaw & Meldrum, 2002)
**Bedroom Egress Windows**

**ABC Sentences 9.10.14.4.(3)&(4) & 9.10.15.4.(3)&(4)**

**Question #1**

How are SCO's interpreting this clause? What if the bedroom window is larger than 0.35 m²?

A response provided by NRC on this question has confirmed that a bedroom window larger than 0.35 m² such as a slider window would still meet the intent of sentence (3) and would be permitted to be used. However, in discussion with a representative from the NRC, it is not the intent that the window would be a large window. The egress opening as well as the remaining window pane should be constructed as close to the 0.35 m² size as possible. For example, a window with an opening area meeting 0.35 m² and with a fixed window area of a similar size area to 0.35 m² would meet the intent of the exemption.

**Question #2**

Is this sentence saying that any number of bedroom egress windows need not be considered, and can they be within 2 m horizontally and vertically of another opening?

The exemption noted within sentence (4) permits the egress windows referred to in sentence (3) to be placed closer than 2 m horizontally and 2 m vertically to other unprotected openings.

**Background Information:**

**2014 Alberta Building Code requirements**

9.10.14.4. Openings in Exposing Building Face

3) Except for buildings that are sprinklered and for openable windows having an unobstructed opening equal to 0.35 m² installed in accordance with Sentences 9.9.10.1.(1) and (2), where the limiting distance is 2 m or less, individual unprotected openings shall be no greater than

a) the area stated in Table 9.10.14.4.B., or

b) where the limiting distance is equal to or greater than 1.2 m, the area calculated by

\[
\text{Area} = 0.24 \left( 2 \times \text{LD} - 1.2 \right)^2
\]
4) The spacing between individual *unprotected openings* described in Sentence (3) that serve a single room or space described in Sentence (5) shall be not less than
a) 2 m horizontally of another *unprotected opening* that is on the same *exposing building face* and serves the single room or space, or
b) 2 m vertically of another *unprotected opening* that serves the single room or space, or another room or space on the same *storey*.

**9.10.15.4. Glazed Openings in Exposing Building Face**

3) Except for *buildings* that are *sprinklered* and for *openable windows* having an unobstructed opening equal to 0.35 m² installed in accordance with Sentences 9.9.10.1.(1) and (2), where the *limiting distance* is 2 m or less, individual glazed openings or a group of glazed openings in an *exposing building face* shall not exceed 50% of the maximum allowable aggregate area of glazed openings determined in Sentence (1).

4) The spacing between individual glazed openings described in Sentence (3) serving a single room or space described in Sentence (5) shall be not less than
a) 2 m horizontally of another glazed opening that is on the same *exposing building face* and serves the single room or space, or
b) 2 m vertically of another glazed opening that serves the single room or space, or another room or space on the same *storey*.

**2010 NBC User’s Guide**

**Areas and Spacing of Individual Openings (NBC Sentences 9.10.14.4.(3) & 9.10.15.4.(3))**

Because the requirements that limit the maximum opening areas assumed that smaller openings would be evenly distributed over the exposing building face, the NBC also limits the area of individual openings and their proximity to one another wherever the limiting distance is 2m or less. *Exceptions are provided for sprinklered buildings and for openable bedroom windows* with an unobstructed openable area of 0.35 m² where the window is installed to fulfill the requirements in NBC Subsection 9.9.10. for emergency egress.

**NRC Response**

**Re: 2010 NBC and 2014 ABC Articles 9.10.14.4.(3) & 9.10.15.4.(3)**

**Dear Ms. Martin:**

Sentence 9.9.10.1.(1) generally requires every bedroom in an unsprinklered suite to have at least one window or door opening to the outside that is large enough and easy enough to open so that it can be used as an exit in the event that a fire prevents use of the building’s normal exits.

Sentence 9.9.10.1.(2) states that the window referred to in Sentence 9.9.10.1.(1) shall
a) provide an unobstructed opening of not less than 0.35 m² in area with no dimension less than 380 mm, and
b) maintain the required opening during an emergency without the need for additional support.

"unobstructed opening equal to 0.35 sq m...." means the minimum unobstructed opening specified for escape. If a window utilizes a slider style window, the overall glazed window area would have to be larger.

The intent of Sentence 9.10.15.4.(3) is to exempt those bedroom windows from the restrictions stated in the Sentence.
Energy Efficiency Application

Question:
Buildings containing non-residential occupancies whose combined total floor area exceeds 300 sq meters or medium hazard industrial shall comply with NECB 9.36.1.3.(4).?

Correct. Buildings containing non-residential occupancies, whose total floor area exceeds 300 sq meters would be required to meet the 2011 National Energy Code of Canada for Buildings.

Examples:
1) Mercantile Occupancy
   Building Height: 2 storeys
   Building Area: 255 sq meters

   Which part of the Code (Part 3 or Part 9) would be applicable for the design of the construction of the building? Part 9

   Is Professional Involvement required? Yes, over 250 sq meters.

   Which Energy Code is applicable? 2011 NECB, total floor area is 510 sq meters.

2) Mercantile Occupancy
   Building Height: 2 storeys
   Building Area: 120 sq meters

   Which part of the Code (Part 3 or Part 9) would be applicable for the design of the construction of the building? Part 9

   Is Professional Involvement required? No, less than 250 sq. meters

   Which Energy Code is applicable? 2011 NECB or ABC 9.36

3) Medium Hazard Industrial Occupancy
   Building Height: 1 storeys
   Building Area: 100 sq meters

   Which part of the ABC (Part 3 or Part 9) would be applicable for the design of the construction of the building? Part 9, less than 600 sq meters and 3 storeys or less.

   Is Professional Involvement required? No, less than 500 sq. meters

   Which Energy Code is applicable? 2011 NECB
Background Information:
2014 Alberta Building Code requirements
9.36.1.3. Compliance and Application (See Appendix A.)
4) Buildings containing non-residential occupancies whose combined total floor area exceeds 300 m² or medium-hazard industrial occupancies shall comply with the NECB.

A-9.36.1.3. Compliance Options According to Building Type and Size. Table A-9.36.1.3. describes the types and sizes of Part 9 buildings to which Section 9.36. and the NECB apply.

<table>
<thead>
<tr>
<th>Building Types and Sizes</th>
<th>Energy Efficiency Compliance Options</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC 9.36.2 to 9.36.4. (Prescriptive)</td>
<td>ABC 9.36.5. (Performance)</td>
</tr>
</tbody>
</table>
| houses with or without a secondary suite  
buildings containing only dwelling units with common spaces ≤ 20% of building's total floor area(1) | ✓ | ✓ | ✓ |
| Group C occupancies  
bUILDINGS containing Group D, E or F3 occupancies whose combined total floor area ≤ 300 m² (excluding parking garages that serve residential occupancies)  
bUILDINGS with a mix of Group C and Group D, E or F3 occupancies where the non-residential portion's combined total floor area ≤ 300 m² (excluding parking garages that serve residential occupancies) | ✓ | X | ✓ |
| buildings containing Group D, E or F3 occupancies whose combined total floor area > 300 m²  
bUILDINGS containing F2 occupancies of any size | X | X | ✓ |

Notes to Table A-9.36.1.3.: (1) The walls that enclose a common space are excluded from the calculation of floor area of that common space.

Definitions
Floor area means the space on any storey of a building between exterior walls and required firewalls, including the space occupied by interior walls and partitions, but not including exits, vertical service spaces, and their enclosing assemblies.

Building area means the greatest horizontal area of a building above grade within the outside surface of exterior walls or within the outside surface of exterior walls and the centre line of firewalls.

2.4.2. Professional Involvement
2.4.2.1. General
3) Except as required in Sentence (9), registered architectural professional and registered engineering professional seals and stamps are not required on plans or specifications for a building.
d) 3 storeys or less in building height, classified as a business and personal services occupancy, mercantile occupancy or industrial occupancy that,  
i) if 1 storey in building height, has a building area of 500 m² or less,  
ii) if 2 storeys in building height, has a building area of 250 m² or less, or  
iii) if 3 storeys in building height, has a building area of 165 m² or less,
Poly Hats?

Question?
What type of boxes and poly hats can be used in buildings under 9.36?
Metal or plastic boxes as have typically been seen as industry norm, can still be used when constructing under energy efficiency requirements. To meet the vapour barrier permeance requirements, boxes can be measured in accordance with ASTM E 96/E 96M.

For installations where a plastic box which has a flange to provide the seal is used, the air barrier can be sealed to the flange.

For installations where a metal box is used, the air barrier must be made continuous by covering the box with an air barrier, and sealing that cover to the adjacent air barrier.

The concern with metal box installations is that with the new requirements for sealing of the air barrier under ABC 9.36, all joints are required to be sealed and structurally supported.

Background Information:
2014 Alberta Building Code requirements
9.36.2.10. Construction of Air Barrier Details
1) Materials intended to provide the principal resistance to air leakage shall conform to CAN/ULC-S741, “Air Barrier Materials – Specification.” (See A-9.25.5.1.(1) in Appendix A for air leakage characteristics and water vapour permeance values for a number of common materials.)

5) Where the air barrier system consists of flexible sheet material, all joints shall be
a) lapped not less than 50 mm,
b) sealed (see Appendix A), and
c) structurally supported.

7) Penetrations by electrical wiring, outlets, switches or recessed light fixtures through the plane of airtightness shall be constructed airtight a) where the component is designed to provide a seal against air leakage, by sealing the component to the air barrier material (see Appendix A), or
b) where the component is not designed to provide a seal against air leakage, by covering the component with an air barrier material and sealing it to the adjacent air barrier material.

A-9.36.2.10.(7)(a) Components Designed to Provide a Seal at Penetrations. An example of the component referred to in Clause 9.36.2.10.(7)(a) is a plastic surround for electrical outlet boxes that has a flange to which sealant can be applied or that has an integrated seal.

9.25.4.2. Vapour Barrier Materials
1) Vapour barriers shall have a permeance not greater than 60 ng/(Pa·s·m2) measured in accordance with ASTM E 96/E 96M, "Water Vapor Transmission of Materials," using the desiccant method (dry cup).
Radon Mitigation Systems

Question:
Termination/intakes/windows/doors/piping materials: looking for clarity on piping materials and clearance to openings that may or may not be a source of potential contamination. ABC requirements only speaks to the rough-in installation of the subfloor depressurization radon mitigation system, minimizing the potential entry of radon gas if the building is exposed to more that the suggested safe level of 200 becquerels per cubic meter.

Should a homeowner or builder install a radon mitigation system, the system design may utilize the design considerations provided in the “Reducing Radon Levels in Exiting Homes: A Canadian Guide for Professional Contractors” document as a best practice reference.
http://www.radonleaders.org/sites/default/files/HC%20Rn%20Mitigation%20Guide%20English_0.pdf

Venting of a radon mitigation system, although not specifically addressed within the ABC, would be interpreted as being similar to that of any typical exhaust device, and should be provided with the same clearances to intake openings as these other vents are required to provide. The NRC User’s Guide provides information that a 3m clearance should be used, however a clearance of this magnitude would not be in keeping with the previously accepted clearances provided for other venting appliances within the ABC and the B149.1 Natural Gas and Propane Instillation Code.

Background Information:
2014 Alberta Building Code
9.32.3.13. Outdoor Intake and Exhaust Openings
3) The distance separating air intakes from building envelope penetrations that are potential sources of contaminants, such as gas vents or oil fill pipes, shall be not less than 900 mm (3 feet).

Illustrated User’s Guide NBC 2010 Part 9 Housing and Small Buildings
Extending the Vent Pipe
The extension of the pipe should be at least 100mm (4”) in diameter and should be insulated to minimize condensation. If the pipe discharges independently through the roof, it should be located not less than 3m (9’10”) from any other opening and extend not less than 300mm (12”) above the roof’s surface. Alternatively, the pipe can discharge through an attic gable or an exterior wall. In the latter case, because the exhausted air may contain unacceptable concentrations of radon, re-infiltration of exhausted air into occupied space should be avoided by locating the discharge pipe not less than 300mm (12”) above grade, not closer than 3m (9’10”) from any other opening.

Standata G-01-10(Rev1)
See Attached
Reducing Radon Levels in Existing Homes: A Canadian Guide for Professional Contractors

In-line centrifugal fans specifically designed for radon mitigation are now available. Some airtight fan designs are available with sealed joints; some have the casing joints and electrical connections located on the suction side of the fan, so leakage from the fan is not a concern. Plastic plumbing pipe is now used routinely for the suction and exhaust ducting, with airtight solvent welded joints in the piping and airtight rubber plumbing couplers to the fan.

As properly installed fans and ducting will not leak soil air and radon into the building, the fan no longer needs to be located outside the building envelope, but can be mounted inside the building.

Piping
The preferred piping is solvent welded 100 mm Schedule 40 PVC or ABS. This is used for domestic drain, waste and vent plumbing, and the pipe, fixtures, and the skills to install the piping are readily available. A lighter Schedule 20 pipe is available, and is satisfactory where the pipe is unlikely to be damaged. The Plumbing Code can be used as a guide to installation. Systems can use 75 mm pipe in tight spaces, but the pressure drops and air noise will be higher. The fan sizing can be adapted for different pipe sizes by calculating the air velocity and Vp (dynamic head) for each section of pipe.

Labelling
An information label should be placed on the system piping in a prominent location indicating that it is part of a radon mitigation system. Similar labels should be placed on the service panel circuit breaker, fan disconnect switch, and sump pit covers. A label warning that the membrane is part of a radon mitigation system should be placed at the entrance to any space where sub-membrane depressurization is in use.

Venting
Building codes reference standards that specify limits as to the termination of through-wall vents serving appliances that exhaust combustion products. The discharge from radon mitigation systems should be located similarly. Fan calculation (design suction/design airflow) will need to be determined. In most moderate size houses with granular fill beneath the floor slab, and no large air leaks into the sub-slab fill from the house or outdoors, a 40 to 60 watt "radon fan" will be large enough to produce the needed flows and pressures to effectively reverse the flow of soil gas from in to out of the house. However, if the house footprint is large, there are inaccessible openings in the floor slab, or the soil very porous, the sub-slab fill divided by footings, or if the fill has high resistance to air movement; a higher power "radon fan" with larger flow or suction capacity may be needed.

Each fan-powered system should have a method to monitor fan performance. Examples include fan suction indicators such as manometers, gauges, switched electrical pressure sensors with warning light, and electrical power or amperage gauges. An alternative, particularly with indoor fans, is to provide a continuous radon monitor in the living area, which will monitor the system performance.

Intakes
Subsection 9.32.3. of the 2014 ABC deals with Heating-season Mechanical ventilation. Therefore the requirements for "air intakes" as described in Subsection 9.32.3. apply only to intake terminals serving the mechanical ventilation systems (e.g. those connected to furnaces, HRV's, make-up air units etc.). The 900 mm requirement stipulated under sentence 9.32.3.13.(3) does not apply to doors or windows.

Wiring
All wiring should comply with the relevant electrical codes, and electrical components should be CSA or UL listed or equivalent. Good practice dictates that the fan disconnect switch or plug should be within eyesight of the fan. An exterior fan should be hardwired to an internal junction box, with external wiring in conduit. No fan wiring should be run inside the suction or discharge piping or inside HVAC ducts.

There is a Standata in the works with respect to this. There are different approaches which can be taken, especially between local municipalities. The mitigation method chosen is influenced by the reduction in radon concentration required, the building type, and the costs associated with the method, including the running (energy) costs and the cosmetic aspects of the installation. A fan should be installed so that the flow is vertical, so that any condensation in the system will drain through the fan, rather than pooling in the casing.
Ventilation and requirements for cooking taking place at Restaurant Tables?

Question?
Are there any ventilation requirements for “Korean BBQ” Restaurants who cook items at the tables using fondue pots and heating elements?

All applicable Alberta Building Codes and Standards for the design and installation of a buildings ventilation system would apply for the intended use of the building. Additional safety requirements will be governed by the Alberta Fire Code and Standards, Alberta Health Services, and Occupational Health and Safety.

Restaurants who cook items at the tables where processes producing smoke, odours, steam, heat or grease-laden vapors should be meeting the requirements of ABC Part 6, and NFPA 96, either though the installation of an appropriate ventilation system for all cooking areas, or by installing cooking equipment which has been listed in accordance with UL 197 or an equivalent standard for reduced emissions which is not required to be provided with an exhaust system.

However, it may not be practical to enforce all requirements of the NFPA standard in temporary facilities, the authority having jurisdiction should determine that all necessary provisions that affect the personal safety of the occupants are considered.

Background Information:
2014 Alberta Building Code requirements
6.2.2.1. Required Ventilation
1) Except as provided in Sentence (3), all buildings shall be ventilated in accordance with this Part.

6.2.2.5. Air Contaminants
4) Air contaminants in spaces where workers will be present shall not exceed the occupational exposure limits set out in the Occupational Health and Safety Act and its Regulations.

6.2.2.7. Commercial Cooking Equipment
1) Systems for the ventilation of commercial cooking equipment shall be designed, constructed and installed to conform to NFPA 96, “Ventilation Control and Fire Protection of Commercial Cooking Operations,” except as required by Sentence 3.6.3.1.(1) and Article 3.6.4.2.

6) A food establishment in which food is prepared and the process generates odours, smoke, steam or heat shall have a mechanical ventilation system that includes canopies, ductwork and fans to remove odours, smoke, steam or heat to the exterior of the building.

NFPA 96 – 2011 edition
Chapter 4 General Requirements

4.1 General.

4.1.1 Cooking equipment used in processes producing smoke or grease-laden vapors shall be equipped with an exhaust system that complies with all the equipment and performance requirements of this standard.

4.1.1.1* Cooking equipment that has been listed in accordance with UL 197 or an equivalent standard for reduced emissions shall not be required to be provided with an exhaust system.

A.4.1.1.1* See UL 710B.

4.1.9* Cooking equipment used in fixed, mobile, or temporary concessions, such as trucks, buses, trailers, pavilions, tents, or any form of roofed enclosure, shall comply with this standard.

A.4.1.9* The authority having jurisdiction can exempt temporary facilities, such as a tent, upon evaluation for compliance to the applicable portions of this standard. Although it might not be practical to enforce all requirements of this standard in temporary facilities, the authority having jurisdiction should determine that all necessary provisions that affect the personal safety of the occupants are considered.

2014 Alberta Fire Code

2.4.3.2. Flaming Meals and Drinks

1) In Group B, Divisions 2 and 3 care and treatment occupancies, flaming meals or drinks shall not be served.

2) In assembly occupancies, flaming meals or drinks shall be ignited only at the location of serving.
   a) outside the serving area, and
   b) away from ignition sources.

4) A portable extinguisher having a minimum rating of 5-B:C shall be located on the serving cart or table where flaming meals and drinks referred to in Sentences (2) and (3) are served.
Compliance Requirements 9.36.5.

Question:
What is required by the AHJ to verify compliance with energy performance compliance 9.36.5.? A checklist is a valuable tool to assist the AHJ in a plans review. The City of Edmonton, the City of Calgary and Alberta Municipal Affairs are currently working in harmony for the establishment of such a checklist. This checklist is anticipated to be complete by November 1, 2016.

Performance modeling, and the information required to be provided for permit applications can follow the information provided within Division C Subsection 2.2.8. This information should include details provided within the drawings and specifications, as well as a copy of the House Performance Compliance Calculation Report.

Expectations of the AHJ
Relevant detailed documentation from a designer for assessing the proposed design for Code compliance for 9.36:
- **Building Envelope.** Is the separation between the interior and the exterior environments of a building, comprising of its exterior walls, roof, foundation and slab-on-ground.
- **Lighting.** Includes interior and exterior lighting components and systems connected to the buildings electrical service.
- **HVAC.** Heating, ventilating and air-conditioning covers items such as ducting and piping, controls, ventilation and related equipment..
- **Service Water Heating.** Is concerned with systems used for the supply of water for purposes other than space heating.

Responsibilities of the designer: Compliance documentation.

Background Information:
2014 Alberta Building Code requirements
Division C Subsection 2.2.8.
2.2.8. Drawings, Specifications and Calculations for Energy Performance Compliance
2.2.8.1. Application
1) This Subsection applies only to houses with or without a *secondary suite* and to *buildings* containing only *dwelling units* and common spaces whose total *floor area* does not exceed 20% of the total *floor area* of the *building* that are modeled in accordance with Subsection 9.36.5. of Division B to demonstrate compliance with the energy efficiency objectives of Subsections 9.36.2. to 9.36.4. of Division B. (See Appendix A.) (See also Sentence 9.36.1.2.(1) of Division B and A-9.36.1.3.(3) in Appendix A of Division B.)

**2.2.8.2. Information Required on Drawings and Specifications**

1) Except as provided in Sentences (2), (3) and (4), the drawings and specifications for the proposed house shall include:

a) the effective thermal resistance values and respective areas of all opaque *building* envelope assemblies, including all above-ground and below-ground roof/ceiling, wall, and floor assemblies,

b) the overall thermal transmittance (U-value), solar heat gain coefficient and respective areas of all fenestration and door components,

c) the ratio of total vertical fenestration and door area to gross wall area,

d) the performance rating, energy source, and types of all equipment required for space-heating and -cooling and service water heating,

e) the design basis for the ventilation rates,

f) where a test is used to determine the airtightness of a house, the measured airtightness of the *building* envelope in air changes per hour, and

g) any additional features used in the energy model calculations that account for a significant difference in house energy performance.

2) The effective thermal resistance values and respective areas of opaque *building* envelope assemblies that cover less than 2% of the total area of their respective assembly type need not be provided in the drawings and specifications required in Sentence (1).

3) Where part-load characteristics are used in the modeling of the HVAC equipment, they need not be provided in the drawings and specifications required in Sentence (1).

4) The features of the proposed house that differ from those of the reference house shall be detailed in the specifications required in Sentence (1).

**2.2.8.3. House Performance Compliance Calculation Report**

1) A house performance compliance calculation report shall be provided in accordance with Sentence (2) for each proposed house design.

2) In addition to the drawings and specifications required in Article 2.2.8.2., the house performance compliance calculation report shall include:

a) a *project* information section containing

   i) the name or identifier of the *project*,

   ii) a description of the *project*,

   iii) the address of the *project*,

   iv) the name and version of the calculation tool,

   v) the geographic region in which the proposed house is to be built, and

   vi) the identifier for the climatic data set used for analysis,

b) a summary of the characteristics of the *building* envelope, HVAC system and service water heating system reflecting the information provided in Article 2.2.8.2.,

c) an energy performance data summary containing
i) the annual energy consumption of all energy sources calculated for the proposed house (see Appendix A), and
ii) the house energy target of all energy sources calculated for the reference house,
d) where a software program is used to determine compliance,
   i) the name of the software program(s), and
   ii) a list of any adaptations made by the user to the software relating to input or output values, and
   e) a statement that the calculation was performed in compliance with Subsection 9.36.5. of Division B. Compliance Paths:

Performance. The expected energy performance characteristics for the building are met using a design prepared by a qualified professional. This approach offers the greatest possible design flexibility while still meeting energy efficiency goals.

Performance using Simple Trade-Off. The expected energy performance characteristics for the various building elements are met, however, within each building element, i.e. exterior fenestration, it is possible to 'trade-off' increased performance in one element for reduced performance in another (i.e. increase wall insulation to allow more less efficient windows). This can be done by the builder without needing to engage a professional designer.

Prescriptive. The expected energy performance characteristics for the various building elements are met by following the prescribed approach set out in the Code. For example, by following the prescribed level of thermal insulation and amount of windows for the region where the building is to be constructed.
Firewall Construction

Question?
There is a proposal for a firewall that incorporates wood framing into the assembly. The applicant is suggesting that the fire resistance rating for the firewall is achieved by the non-combustible components in the assembly. The assembly is referred to as a “shaft wall” and has been accepted as a firewall in BC, but we are of the opinion that the entire assembly must be of non-combustible construction. Could an SCO entertain a variance for this type of wall?

While the use of combustible content within a firewall has been permitted in other provinces, and is interpreted as being acceptable by the National Research Council (NRC), the Province of Alberta and the Chief Building Administrators (past and present) do not share the same opinion.

The 06-BCI-005-R1Standata for Two Hour Firewalls was developed to provide clarification and guidance to SCO’s and designers on how to interpret the minimum requirements, and the concerns to address when considering a proposed firewall assembly which is constructed of non-combustible materials other than masonry block or concrete. However, in any proposal, the use of combustible materials within the assembly would not be considered as meeting the intent of the ABC.

Proposals for assemblies of non-combustible materials, should review the information within the Standata as a guideline, and provide empirical data to demonstrate that the minimum considerations within the Standata have been achieved, when looked at as an equivalent under an Alternative Solution.

Background Information:
2014 Alberta Building Code requirements
3.1.10. Firewalls
3.1.10.2. Rating of Firewalls
1) A firewall that separates a building or buildings with floor areas containing a Group E or a Group F, Division 1 or 2 major occupancy shall be constructed as a fire separation of non-combustible construction having a fire-resistance rating not less than 4 h, except that where the upper portion of a firewall separates floor areas containing other than Group E or Group F, Division 1 or 2 major occupancies, the fire-resistance rating of the upper portion of the firewall is permitted to be not less than 2 h.
2) A firewall that separates a building or buildings with floor areas containing major occupancies other than Group E or Group F, Division 1 or 2 shall be constructed as a fire separation of non-combustible construction having a fire-resistance rating not less than 2 h.

3) Except as permitted by Sentence (4), the required fire-resistance rating of a firewall, except for closures, shall be provided by masonry or concrete.

4) A firewall permitted to have a fire-resistance rating not more than 2 h need not be constructed of masonry or concrete, provided
   a) the assembly providing the fire-resistance rating is protected against damage that would compromise the integrity of the assembly, and
   b) the design conforms to Article 4.1.5.17. (See Appendix A.)

A-3.1.10.2.(4) Firewall Construction. Inherent in the use of a firewall is the intent that this specialized wall construction provide the required fire-resistance rating while also being designed to resist physical damage—arising out of normal use—that would compromise the rating of the assembly. Traditionally, this has been accomplished by prescribing the use of non-combustible materials, which was in fact restricted to concrete or masonry. Sentences 3.1.10.2.(3) and (4) are intended to retain both of the characteristics of firewalls, while permitting greater flexibility in the use of materials and designs. The fire-resistance rating and damage protection attributes of a firewall may be provided by a single fire- and damage-resistant material such as concrete or masonry, by a fire and damage-resistant membrane on a structural frame, or by separate components—one that provides the fire-resistance rating and another one that protects the firewall against damage.

If the firewall is composed of separate components, the fire-resistance rating of the fire-resistive component needs to be determined for this assembly on its own. In addition, if the damage protection component is physically attached to the fire-resistive component (for example, as a sacrificial layer), then for the purposes of determining the overall performance of the assembly, it is also necessary to determine through testing whether failure of the damage protection component during a fire affects the performance of the fire-resistive component.

Firewall means a type of fire separation of noncombustible construction that subdivides a building or separates adjoining buildings to resist the spread of fire and that has a fire-resistance rating as prescribed in this Code and has structural stability to remain intact under fire conditions for the required fire-rated time.

Standata 06-BCI-005-R1
INTERPRETATION
Compliance with Sentence 3.1.10.2.(4) for a two-hour firewall that is constructed of noncombustible materials other than masonry or concrete can be obtained, provided:

1. The fire-resistance rating of the proposed assembly has been evaluated by a testing agency that has been accredited by the Standards Council of Canada for conformance to CAN/ULC-S101, “Fire Endurance Tests of Building Construction and Materials” and incorporated the damage protection features at the time of testing.

2. The damage protection features must be an integral component of the assembly being tested. External damage protection features such as fencing or other physical barricades would not be appropriate based on the evaluation of Intent Statement #2 from the National Research Council.
3. The Hose Stream Test required by Clause 5.2. of CAN/ULC-S101, “Fire Endurance Tests of Building Construction and Materials” shall be conducted on the original specimen subjected to the fire endurance test referred to in Sentence (1). The duplicate specimen mentioned in Clause 5.2.1.1. shall not be permitted.

4. The structural integrity aspects of the assembly have been designed by a professional engineer licensed to practice in the province of Alberta in accordance with Article 4.1.5.17. and the commentary entitled “Structural Integrity of Firewalls” in the User’s Guide – NBC 2005, Structural Commentaries (Part 4 of Division B) published by the National Research Council of Canada.

5. The damage protection features of the assembly have been designed by a professional engineer licensed to practice in the province of Alberta. The professional engineer must provide evidence to the authority having jurisdiction that the damage protection features will provide the necessary performance required by Clause 3.1.10.2.(4)(a) and will provide an equivalent level of performance as that of masonry or concrete. This evidence could be in the form of calculations, physical tests or research performed by others and must demonstrate to the satisfaction of the authority having jurisdiction that the firewall will be protected from damage due to any hazard present in the building during construction and occupancy, such as:

a. fall, collapse, or expansion of stored items and building contents such as elevated vessels, racks, or shelving,
b. explosion of contents in the area of the firewall such as pressure vessels or flammable materials,
c. mechanical damage from vehicles, equipment or occupants,
d. fracture, penetration, and fragmentation that can be caused by a fire, sprinkler activation, or fire-fighting efforts,
e. collapse of adjacent roof and wall structures or adjoining buildings, or
f. any other factors that may affect the ability of the structure to comply with the intent of the Alberta Building Code.
June 28, 2012

Notice

Subject: compliance monitoring of portable food preparation facilities

This notice applies to any portable food-service vehicle (chip truck, burger wagon, donut shack, etc.) utilizing propane or natural gas as a cooking fuel. The Gas Code Regulation (A.R. 111/2010) adopts and references the CAN/CSA B149.1-10 “Natural Gas and Propane Installation Code” and the CAN/CSA B149.2-10 “Propane Storage and Handling Code”. The scope of these referenced standards covers all installation of appliances, equipment, components, and accessories where natural or propane gas is used for fuel purposes. Whenever the installation, extension, alteration or addition of a gas system occurs, compliance with the current code in force is required. Any natural gas and propane system installations in portable food-service units must therefore comply with the requirements of the above standards and are identified under the Permit Regulation (A.R. 204/2007) as an activity requiring a gas permit.

Additional requirements may apply involving fire protection, air supply, exhaust or ventilation systems that may require additional permits within the building or electrical disciplines. Particular attention needs to be considered when a portable commercial kitchen is served by an exhaust hood and fire suppression system to ensure all code requirements, permits, inspections and compliance monitoring is completed.

Note: the following is an interpretation from the fire discipline in response to an earlier enquiry to a similar issue.

The Chief Fire Administrator has determined that (in addition to the above) the requirements of the following legislation and associated regulations, codes and standards do apply, in whole or in part, to any portable food-service vehicles in Alberta:

Safety Codes Act

Div A Article 1.1.1.1. Application of this Code
  1) This Code applies to all new and existing buildings and facilities, and to
     building construction, renovation or demolition sites.

Div A Article 1.4.1.2. (AFC & ABC)
  building means any structure used or intended for supporting or sheltering
  any use or occupancy.
Div B Article 2.6.1.9, Commercial Cooking Equipment - NFPA 96 – 2004
"Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations" (this also deals with cleaning requirements).

4.1.9* - Cooking equipment used in fixed, mobile, or temporary concessions, such as trucks, buses, trailers, pavilions, tents, or any form of roofed enclosure, shall comply with this standard.

A.4.1.9 - The authority having jurisdiction might exempt temporary facilities, such as a tent, upon evaluation for compliance to the applicable portions of this standard. Although it might not be practical to enforce all requirements of this standard in temporary facilities, the authority having jurisdiction should determine that all necessary provisions that affect the personal safety of the occupants are considered.

Div B Article 2.1.3.5, Special Fire Suppression Systems - NFPA 17A- 2002
"Standard for Wet Chemical Extinguishing Systems"

Div B Sub-Section 2.1.5, Portable Extinguishers - NFPA 10 - 2002 "Portable Fire Extinguishers"


Div B Article 6.2.2.6, Commercial Cooking Equipment - NFPA 96 – 2004
"Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations"

The Occupational Health and Safety Act and Code, and

The Public Health Act

Arguments that because these units are located in vehicles (licensed or otherwise) they are outside the scope of the Safety Codes Act are unfounded other than, perhaps, if they are serving food while moving. Once the unit is stationary and used to produce, cook, sell and/or distribute food the unit becomes at least a temporary occupancy and subject to the general provisions of the Safety Codes Act.

The Traffic Safety Act will apply to their use as a vehicle when moving down a public highway.

Thank you

Sidney Manning
Chief Plumbing and Gas Administrator/Inspector

Kevan D. Jess
Chief Fire Administrator