

# Ontario's 2024 Building Code

## Introducing Key Changes to Part 9, Housing and Small Buildings

August 2024

Building and Development Branch  
Planning and Growth Division

# Purpose

- ❑ To ensure a smooth transition to 2024 Building Code, this deck is intended to inform ministry partners and stakeholders about major changes implemented in Part 9, Housing and Small Buildings in Division B of Ontario's 2024 Building Code.
- ❑ The changes are intended to reduce existing variation with the National Building Code (NBC), align with new provisions introduced through 2020 National Construction Codes, and address Ontario-Specific changes.

# Disclaimer

- ❑ The information contained within this slide deck is intended for general information purposes only. It only highlights key changes to the Building Code. It is not intended as legal or technical advice and it should not be relied on as such. Code users are strongly advised to consult the official records for specific legislative and regulatory requirements, including Ontario's 2024 Building Code, O. Reg. 163/24 as amended by O. Reg. 203/24, 2020 National Building Code and Ontario Amendment Document (May 15, 2024) for the full extent and the exact wording of the changes.

# Effective Date

- ❑ The 2024 Building Code comes into effect on January 1, 2025.
- ❑ There will be a three-month grace period until March 31, 2025, permitting the continued use of the current code for applications for which drawings were substantially complete before January 1, 2025.

# Content

## The following Items will be covered:

- Secondary Suites
- Stairs and Guards
- Fire Protection
- Soil Gas Control
- Flat Insulated Concrete Forms
- Braced Wall Panels
- Ventilation
- Heating and Air-Conditioning
- Miscellaneous

# Secondary Suites

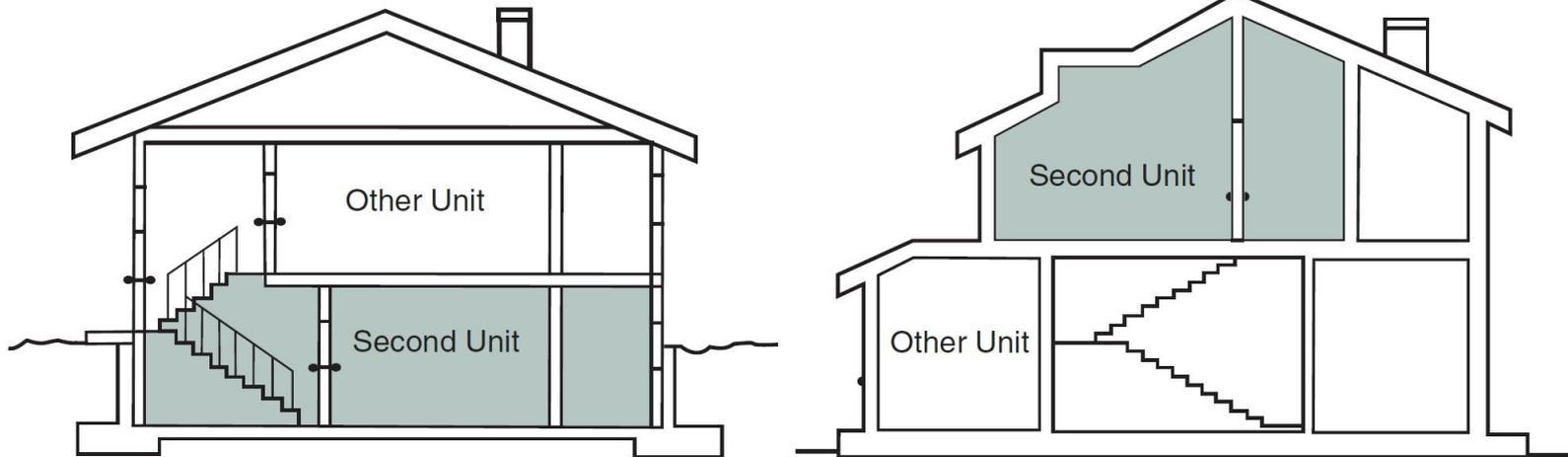
# Secondary Suites

## Definition (Article 1.4.1.2.)

- ❑ The term “house” has been replaced with “secondary suite” with a revised definition similar to the 2020 NBC.
- ❑ Secondary suite means a self-contained dwelling unit located in a building or portion of a building of only residential occupancy that contains only one other dwelling unit and common spaces, and where both dwelling units constitute a single real estate entity.
- ❑ This change is reflected throughout Part 9, by generally replacing the term “house” with the term “secondary suite” or variations such as “a house with a secondary suite” or “individual dwelling unit or house with a secondary suite”.

# Secondary Suites

## Examples of Secondary Suite locations



# Secondary Suites

## Major Exception – No Area Limits

- ❑ Ontario opted not to completely harmonize with the 2020 NBC definition of “secondary suites” related to prescribed area limits as stakeholder comments cautioned that specified area limits would conflict with local municipal zoning by-laws.
- ❑ Ontario's definition of secondary suites does not include any area limits for the second unit. (On the other hand, the 2020 NBC specifies that a secondary suite has to be the lesser of 80% of the total floor area of all storeys of the other dwelling unit or 80 m<sup>2</sup>).

# Secondary Suites

## Major Exceptions - Smoke Tight Barrier (Article 9.10.9.16.)

- Article 9.10.9.16 waives the requirements for a fire separation between suites in a house with a secondary suite, provided the walls and floor-ceiling framing are protected by a continuous smoke-tight barrier of not less than 15.9 mm Type X gypsum board.
- No size limitation but a more resistant separation.
- 2020 NBC limits the fire load with size restriction and allows only a a continuous smoke-tight barrier of not less than 12.7 mm thick gypsum board.

# Secondary Suites

## Houses (Previous Article 9.1.1.12.)

- Article 9.1.1.12. from the 2012 OBC, which had addressed the permissions to allow a house above another house provided there was not more than one dwelling unit in each house, has been deleted given the new definition of “secondary suite” in Article 1.4.1.2. of Division A.
- Based on the definition, a secondary suite in a stacked row-house arrangement continues to not be permitted.

# Secondary Suites

## Ceiling Heights of Rooms or Spaces (Article 9.5.3.1.)

- This Article has been amended to include two new Sentences that specify the minimum ceiling heights for secondary suites as follows:
  - Sentence (2) has been added that indicates ceiling heights in secondary suites shall be not less than 1.95 m.
  - Sentence (3) has been added that indicates clear heights under beams and ducting in secondary suites shall be not less than 1.85 m.

# Secondary Suites

## Height Over Stairs (Article 9.8.2.2.)

- This Article has been amended to include a new Sentence that specifies the minimum clear height over stairs that are located under beams and ducts for secondary suites as follows:
  - Sentence (4) has been added that indicates the clear height over stairs that are located under beams and ducting in secondary suites shall not be less than 1.85 m.

# Secondary Suites

## Shared Egress Facilities (Article 9.9.9.3.)

- ❑ Sentence (1) has been amended to exempt dwelling units in a house with a secondary suite from complying with the shared egress requirements noted in Sentence (1).
- ❑ A new Sentence (2) has been added to clarify shared egress requirements for when the upper dwelling unit in a house with a secondary suite is required to have a second and separate means of egress where an egress door from that dwelling unit opens onto an exterior passageway that:
  - has a floor assembly with a fire-resistance rating less than 45 min,
  - is served by a single exit stairway or ramp, and
  - is located more than 1.5 m above adjacent ground level.

# Secondary Suites

## Exterior Walls Meeting at an Angle (Article 9.10.12.3.)

- This Article has been expanded to include a new Sentence (3) that is specific to a house with a secondary suite.
- A new Sentence (3) has been added that permits the exterior walls for a house with a secondary suite that meet at an external angle of  $135^\circ$  or less than to be finished on the interior with not less than 15.9 mm Type X gypsum board if the interior wall between the dwelling units are not constructed as fire separations.

# Secondary Suites

## Interconnection of Smoke Alarms (Article 9.10.19.5.)

- ❑ New Sentence 9.10.19.5.(2) has been added which permits wireless technology to be used for the interconnection of smoke alarms in a house with a secondary suite.
- ❑ Electrical regulations may require that separate power sources be provided for smoke alarms in the main dwelling unit and the secondary suite where the units have separate electrical services. In these situations, interconnection of smoke alarms between the units can be achieved through wireless communication.

# Stairs and Guards

# Stairs and Guards

## Open Risers (Article 9.8.4.9.)

- ❑ Sentence (1) of this new Article prohibits open stair risers in Part 9 buildings with a few exceptions.
- ❑ Sentence (2) permits open risers for the following:
  - interior and exterior stairs that serve a single dwelling unit or a house with a secondary suite,
  - fire escape stairs,
  - stairs that are principally used for maintenance,
  - stairs that serve service rooms, and
  - stairs that serve industrial occupancies other than storage garages.
- ❑ This Article is also consistent with the 2012/2024 OBC Part 3 restrictions on open risers.

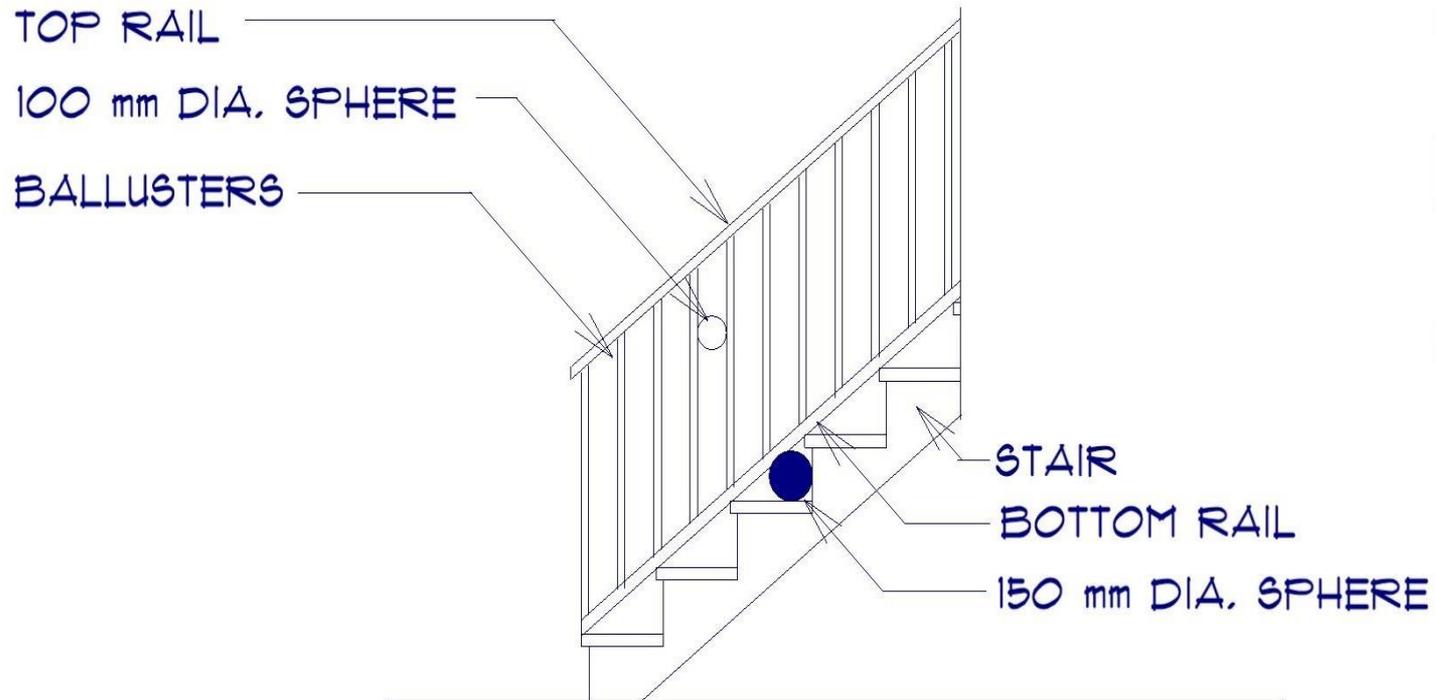
# Stairs and Guards

## Openings in Guards (Article 9.8.8.5.)

- New Sentence (2) has been added to clarify that the triangular openings formed by the stair risers, stair treads and the bottom element of a required guard shall be of a size that prevents the passage of a 150 mm diameter sphere.
- This requirement does not apply to industrial occupancies.

# Stairs and Guards

## Openings in Guards - Sentence 9.8.8.5.(2)



# Fire Protection

# Fire Protection

**General Requirements for Penetrations of Fire Separations (Article 9.10.9.6.)**

**Piping Penetrations (Article 9.10.9.7.)**

**Penetrations by Outlet Boxes or Service Equipment in Concealed Spaces (Article 9.10.9.8.)**

**Penetrations by Raceways, Sprinklers and Fire Dampers (Article 9.10.9.9.)**

- ❑ These 4 Articles replace the 2012 OBC Articles 9.10.9.6. “Penetrations of Fire Separations” and 9.10.9.7. “Combustible Piping” and provide greater clarity on the requirements for penetrations in fire separations to ensure the continuity and fire-resistance rating of the separations.

# Fire Protection

## Openings in Exposing Building Face (Article 9.10.14.4.)

- ❑ New Sentence (10) has been added indicating that for garages or accessory buildings that serve a single dwelling unit only and are detached from any building, the maximum aggregate area of glazed openings shall comply with the requirements for unprotected openings.
- ❑ Sentence (11) is an exception and indicates that the glazed openings referenced in Sentence (10) need not apply to the area limits of the exposing building face of a detached garage or accessory building facing a dwelling unit where it meets certain conditions as follows:
  - serves only one dwelling unit, is located on the same property, and the dwelling unit is the only major occupancy on the property.

# Fire Protection

## Construction of Exposing Building Face and Walls Above Exposing Building Face (Article 9.10.14.5.)

- ❑ New Sentence (12) has been added requiring the protection of soffits where the soffit projection is less than 1.2 m from the property line, centre line of a public way or an imaginary line between two buildings or fire compartments on the same property.
- ❑ Some examples of materials that could be used for protection:
  - Not less than 0.38 mm thick sheet steel,
  - Unvented aluminum soffit,
  - Not less than 11 mm thick plywood,
  - Not less than 12.5 mm thick OSB.

# Fire Protection

## Application (Article 9.10.15.1.)

- ❑ This Article has been expanded to clarify the types of buildings that Subsection 9.10.15. applies to, which includes:
  - buildings that contain only dwelling units and have no dwelling unit above another dwelling unit, such as individual dwelling units, semi-detached dwellings and standard rowhouses, and
  - houses with a secondary suite including their common spaces.

# Fire Protection

## Glazed Openings in Exposing Building Face (Article 9.10.15.4.)

- ❑ New Sentence (7) has been added that permits the maximum aggregate area of glazed openings in an exposing building face to be doubled if the glazed openings consist of glass blocks or if the building and rooms adjacent to the exposing building face are sprinklered.

# Fire Protection

## Construction of Exposing Building Face (Article 9.10.15.5.)

- Sentence (2) has been expanded to provide an additional option for the construction of an exposing building face of houses where the limiting distance is less than 0.6 m.
- The additional option would allow the wall assembly to comply with Clause 3.1.5.5.(1)(b) when tested in conformance with CAN/ULC-S134, “Standard Method of Fire Test of Exterior Wall Assemblies.”

# Fire Protection

## Required Fire Blocks in Wall Assemblies (Article 9.10.16.2.)

- ❑ Sentence (2) has been expanded to provide an additional option through a new Clause (d) that would exempt fire blocks if the concealed wall space is filled with insulation.

# Soil Gas Control

# Soil Gas Control

## Soil Gas Control (Subsection 9.13.4.)

- This Subsection has been amended to harmonize with 2020 NBC requirements.
- The new provisions expand and provide clarity on the requirements for soil gas control.

# Soil Gas Control

## Application and Scope (Article 9.13.4.1.)

- ❑ Sentence (1) describes the application and scope of Subsection 9.13.4. “Soil Gas Control” as it applies to:
  - wall, roof and floor assemblies separating conditioned space from the ground, and
  - the rough-in to allow the future protection of conditioned space that is separated from the ground by a wall, roof or floor assembly.
  
- ❑ Sentence (3) specifies that in areas of the province where radon gases are known to be a problem, the building must be designed and constructed to meet the radon limitations as noted in Article 9.1.1.7.

# Soil Gas Control

## Protection from Soil Gas Ingress (Article 9.13.4.2.)

- ❑ This Article addresses the following:
  - All wall, roof and floor assemblies in contact with the ground must be constructed with a soil gas barrier in accordance with Subsection 9.25.3. or SB-9.
  - In addition, other commercial soil gas barriers that have been acceptable in the past may continue to be used.
  - Buildings containing residential occupancies must be provided with a rough-in for a subfloor depressurization system in accordance with Article 9.13.4.3. for the future installation of a radon extraction system.
  - Buildings other than residential occupancies must be provided with a rough-in for a future radon extraction system or conform to Parts 5 and 6.

# Soil Gas Control

## Providing for the Rough-in for a Subfloor Depressurization System (Article 9.13.4.3.)

- Sentence (1) describes two options and the components of the rough-in for the subfloor depressurization system.
  - A gas-permeable layer, an inlet and an outlet, or
  - Clean granular material and a pipe.

# Soil Gas Control

## Providing for the Rough-in for a Subfloor Depressurization System (Article 9.13.4.3.) Continued

- Sentence (2) expands on the requirements for the gas-permeable layer and the inlet and outlet noted in Clause (1)(a).
  - A gas-permeable layer must be installed in the space between the air barrier and the ground to allow for the depressurization of that space.
  - An inlet that provides for the effective depressurization of the gas-permeable layer.
  - An outlet that terminates in the conditioned space and
    - Permits connection to depressurization equipment.
    - Sealed to maintain the integrity of the air barrier system.
    - Be clearly labelled.

# Soil Gas Control

## Example of a gas-permeable layer - Sentence 9.13.4.3.(2)



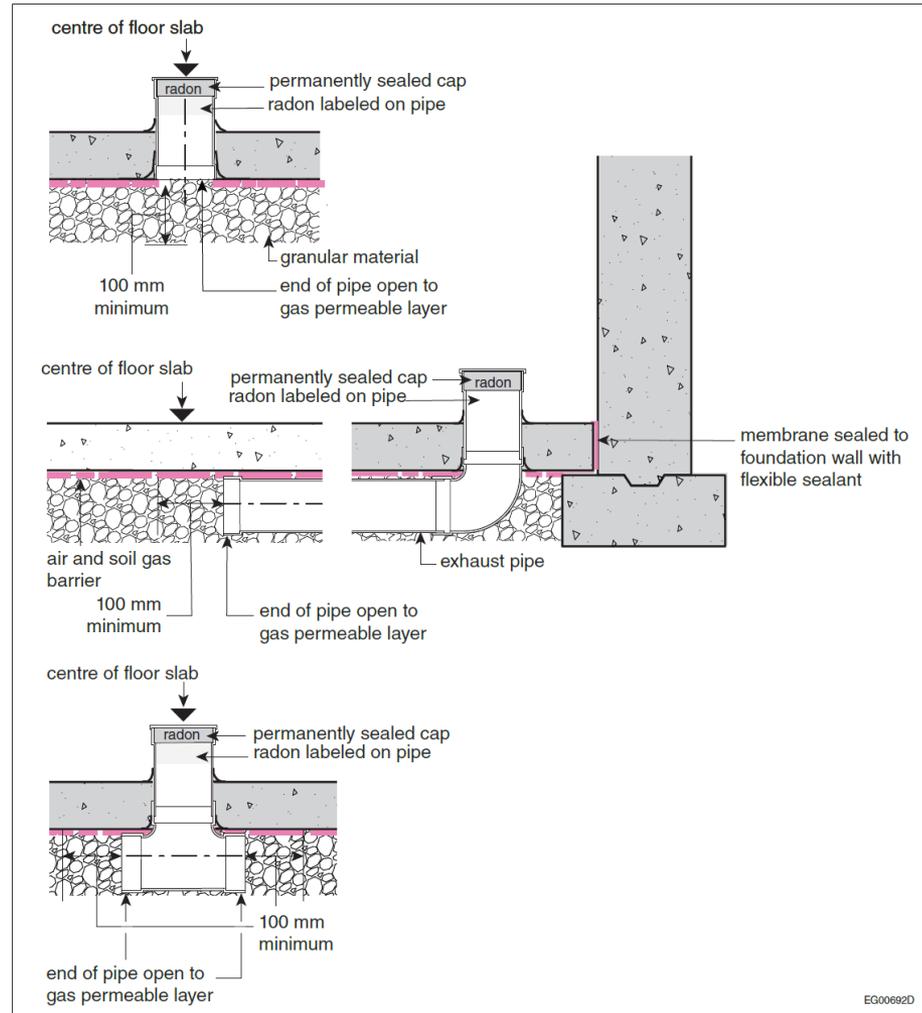
# Soil Gas Control

## Providing for the Rough-in for a Subfloor Depressurization System (Article 9.13.4.3.) Cont'd

- Sentence (3) expands on the rough-in requirements for the clean granular material and the pipe noted in Clause (1)(b).
  - Clean granular material must be installed below the floor-on ground in accordance with 9.16.2.1.(1)
  - A minimum 100 mm dia. pipe installed through the floor such that:
    - Its bottom opens into the granular layer at or near the centre of the floor.
    - Its top end permits connection to depressurization equipment, and it has an airtight cap.
    - Must be clearly labelled near the cap, and if applicable every 1.8 m and change in direction.

# Soil Gas Control

## Acceptable Configurations (Article 9.13.4.3.)



# Soil Gas Control

## Geographical areas and other areas where radon is known to be problem

- ❑ Article 9.1.1.7. cites three specific geographical areas where radon is known, in addition there are also other areas of the province where it has been determined that Radon is a problem.
- ❑ The threshold for determining if Radon is a problem is if the annual average concentration of radon 222 exceeds 200 Bq/m<sup>3</sup> of air.
- ❑ In these circumstances, the soil gas barrier and rough-in for sub-floor depressurization system would not be sufficient on their own. As such an active sub-floor depressurization system would be required to meet the code. Other systems could be considered provided compliance can be demonstrated.

# Flat Insulated Concrete Forms

# Flat Insulated Concrete Forms

## Flat Wall Insulating Concrete Form Units (Article 9.15.4.1.)

- ❑ The title of Article 9.15.4.1. “Permanent Form Material” has been renamed "Flat Wall Insulating Concrete Form Units".
- ❑ The reference to CAN/ULC-S701.1 “Thermal Insulation, Polystyrene Boards” for Type 2, 3 or 4 polystyrene has been replaced with CAN/ULC-S717.1, “Flat Wall Insulating Concrete Form (ICF) Units – Material Properties”.

# Flat Insulated Concrete Forms

## Foundation Wall Thickness and Required Lateral Support (Article 9.15.4.2.)

- Sentence (1) has been amended to include “concrete core in flat wall insulating concrete forms” as an additional foundation wall type.
- Clause (2)(a) has been amended by increasing the concrete core size in flat insulating concrete form foundation walls from 140 mm to 150 mm.

# Flat Insulated Concrete Forms

## Foundation Walls Considered to be Laterally Supported at the Bottom (Article 9.15.4.4.)

- ❑ Clause (1)(c) has been amended to include an additional option of providing lateral support at the bottom of flat insulating concrete form walls.
- ❑ This new option permits a flat insulating concrete form foundation wall to be dowelled to the footing with 10M bars spaced not more than 600 mm o.c.

# Flat Insulated Concrete Forms

## Attachment (Article 9.27.5.1.)

- New Sentence (5) has been added that permits cladding, trim and furring strips to be attached to the web fastening strips of flat wall insulating concrete form units.

## Application (Article 9.29.5.1.)

- New Sentence (3) has been added that references standard ASTM C840 “Application and Finishing of Gypsum Board” for the application of gypsum board to flat insulating concrete forms.

# Flat Insulated Concrete Forms

## Typical Flat Insulated Concrete Form Foundation



# Braced Wall Panels and Braced Wall Bands

# Braced Wall Panels

## New Definitions (Division A, Article 1.4.1.2.)

- ❑ “Braced wall panel” means a portion of a wood-frame wall where bracing, sheathing, cladding or interior finish is designed and installed to provide the required resistance to lateral loads due to wind or earthquake.
- ❑ “Braced wall band” means an imaginary continuous straight band extending vertically and horizontally through the building or part of the building, within which braced wall panels are constructed.

# Braced Wall Panels

## Bracing to Resist Lateral Loads Due to Wind and Earthquake (Subsection 9.23.13.)

- ❑ New Subsection 9.23.13. has been added to address areas subject to higher wind and earthquake loads.
- ❑ In addition to this new Subsection certain corresponding Articles from other Subsections have also been amended to include specific provisions for wind and earthquake resistance. These other Articles will be reviewed later in the presentation.

# Braced Wall Panels

## Bracing to Resist Lateral Loads Due to Wind and Earthquake (Subsection 9.23.13.) Continued

- ❑ New Articles under Subsection 9.23.13. have been added with specific bracing criteria, these Articles fall into “Low” (Article 9.23.13.1.), “High” (Article 9.23.13.2.) or “Extreme” (Article 9.23.13.3.) lateral load categories.
- ❑ The remaining Articles of Subsection 9.23.13. address the spacing and materials used for braced wall panels and bands.
- ❑ The Low lateral load category is defined as having the 1-in-50 hourly wind pressure less than 0.8 kPa (125 km/h) and the seismic spectral acceleration  $S_a(0.2)$  less than or equal to 0.7. Ontario falls into this category, however the previous requirements from the 2012 OBC are also being kept as an additional option.

# Braced Wall Panels

## Bracing to Resist Lateral Loads Due to Wind and Earthquake (Subsection 9.23.13.) Continued

- ❑ To qualify for the Extreme lateral load category, either the 1-in-50 hourly wind pressure is greater than or equal to 1.2 kPa (155 km/h) or the seismic spectral acceleration  $S_a(0.2)$  is greater than 1.8. For this category, the building must be designed to either Part 4, or the CWC 2014 “Engineering Guide for Wood Frame Construction”.
- ❑ In the High lateral load category, either wind or earthquake is higher than the limits of the Low category, but not as high as the Extreme category limits. These cases can use the lateral load provisions in Part 9, Part 4, or the CWC 2014 “Engineering Guide for Wood Frame Construction”.

# Braced Wall Panels

## Corresponding Articles

### **Table 9.23.3.4. Nailing for Framing**

- Has been amended to include additional fastening requirements where braced wall panels are required.

### **Article 9.23.3.5. Fastening for Sheathing or Subflooring**

- Has been amended to introduce additional requirements for fastening sheathing where braced wall panels are required.

### **Article 9.23.6.1. Anchorage of Building Frames**

- Has been amended to introduce specific requirements for anchorage of building frames where braced wall panels are required.

# Braced Wall Panels

## Corresponding Articles (Cont'd)

### Article 9.23.9.8. Support of Walls

- Has been amended to include a new Sentence (6) that requires walls constructed with required braced wall panels to be continuously supported by floor joists, blocking or rim joists, to allow for fastening.

### Article 9.29.5.8. Spacing of Nails

- Amends Sentence (4) by adding braced wall panels as an additional application where the spacing of nails on a single layer gypsum board application cannot exceed 200 mm o.c.

# Braced Wall Panels

## Corresponding Articles (Cont'd)

### Article 9.29.5.9. Spacing of Screws

- Amends Sentence (4) by adding braced wall panels as an additional application where the spacing of nails screws on a single layer **gypsum board** application cannot exceed 300 mm o.c.

### Article 9.29.6.3. Nails and Staples

- Has been amended to include a new Sentence (2) that regulates the fastening requirements where **plywood finish** provides the bracing in braced wall panels.

### Article 9.29.9.3. Nails

- Has been amended to include a new Sentence (2) that regulates the fastening requirements where **OSB or waferboard** provides the bracing in braced wall panels.

# Ventilation

# Ventilation

## General

- ❑ Section 9.32. adopts the ventilation requirements from the 2020 NBC.
- ❑ The layout of this new Section differs from the 2012 OBC, but still allows the same systems currently used in Ontario.
- ❑ New terminologies are introduced such as “non-heating season ventilation”, and “heating season ventilation”. The new edition also speaks to natural means and mechanical means of non-heating ventilation systems.
- ❑ For mechanical ventilation, the 2020 NBC differentiates between spillage and non-spillage susceptible combustion equipment.

# Required Ventilation (Article 9.32.1.2.)

## Required Ventilation (Article 9.32.1.2.)

- Every residential occupancy needs to be provided with non-heating season ventilation in accordance with Subsection 9.32.2. and except self-contained dwelling units, heating season ventilation in accordance with Part 6.
- For self-contained dwelling units, heating season ventilation systems must comply with Subsection 9.32.3 or Part 6.
- For a house containing a secondary suite; exits and public corridors are exempted; ancillary spaces are also exempted unless they contain exhaust devices. In those case, they would require makeup air.

# Non-Heating-Season Ventilation (Articles 9.32.2.2. and 9.32.2.3.)

## Non-Heating Season Natural Ventilation (Article 9.32.2.2.)

- For the natural ventilation, the terminology is slightly different, but requirements are, in essence, the same.

## Non-Heating Season Mechanical Ventilation (Article 9.32.2.3.)

Where the room or space is not provided with natural ventilation (no operable windows):

- If mechanically cooled, the mechanical ventilation to be provided for rooms or spaces based on:
  - The assigned air change rates based on Table 9.32.2.3., or
  - Subsection 9.32.3. Heating-season-mechanical ventilation
- If not mechanically cooled, then mechanical ventilation must be provided at the rate of one air change per hour.

# Heating-Season Mechanical Ventilation (Article 9.32.3.1.)

## Required Ventilation for Heating-Season

- ❑ This Article provides more flexibility for meeting the heating season mechanical ventilation requirements for residential occupancies. Mechanical ventilation system can be designed to Subsection 9.32.3. or good practice such as CSA F326, or Part 6. However, use of Subsection 9.32.3. is limited to up to 5 bedrooms.
- ❑ All mechanical ventilation systems designed in accordance with Subsection 9.32.3., need to be equipped with at least
  - a principal ventilation system,
  - a supplemental exhaust fan, and
  - protection against depressurization.

## Design and Installation (Article 9.32.3.2.)

- ❑ This Article requires mechanical ventilation systems to be designed and installed to fulfill its intended purpose.
- ❑ Sentence (1) sets the requirements for mechanical ventilation systems not described under the prescriptive requirements of Subsection 9.32.3., which refers to listed good engineering practices.
- ❑ Sentence (2) requires ventilation system equipment to be installed according to both manufacturer's specifications and the minimum Code requirements at the same time (if there is a conflict Code supersedes).
- ❑ Sentence (3) requires fans and heat recovery ventilators to be installed to minimize noise and vibration.

# Principal Ventilation System (Article 9.32.3.3.)

- ❑ This Article gives a range for the principal ventilation capacity based on the number of bedrooms, compared to a previously fixed value.

Number of Bedrooms in <i>Dwelling Unit</i>	Normal Operating Exhaust Capacity of Principal Ventilation Fan, L/s	
	Minimum	Maximum
1	16	24
2	18	28
3	22	32
4	26	38
5	30	45
More than 5	System must comply with Clause 9.32.3.1.(1)(a)	

- ❑ The location of the manual switch controlling the principal ventilation fan is now more specific and balance of the requirement did not change.
- ❑ Principal exhaust duct size is addressed under “Ducts.”

# Ventilation Coupled with Forced Air System

## Ventilation Systems Used in Conjunction with Forced Air Heating Systems (Article 9.32.3.4.)

- This Article requires that a means for supplying outside air to a dwelling unit be provided by using a forced air system or furnace blower and duct system to distribute ventilation air.
- Tempering is required if the outdoor airflow exceeds certain fresh air flow rates.
- Interlocking is required between the principal exhaust fan and the forced air heating system.
- The outdoor air must be supplied at the same rate as the principal exhaust fan to provide balanced ( $\pm 10\%$ ) airflow between exhaust and supply.

# Ventilation Systems NOT coupled with Forced Air Systems (Article 9.32.3.5.)

## Ventilation Systems Not Used in Conjunction with Forced Air Heating Systems (Article 9.32.3.5.)

- This Article describes a balanced exhaust and fresh air intake system in the absence of HRV.
- This Article requires that a means for supplying outside air to a dwelling unit be provided by using a separate mechanical air distribution system.
- The outdoor air supply main trunk and branch duct size are no longer prescribed. They are addressed in Article 9.32.3.11.
- Sentence (3) requires interlocking between the principal ventilation fan and outdoor air supply fan.

# Ventilation Systems NOT coupled with Forced Air Systems (Article 9.32.3.5.) Cont'd

## Ventilation Systems Not Used in Conjunction with Forced Air Heating Systems

- The balance of this Article prescribes balanced supply and exhaust system and tempering requirements, where applicable. Ventilation system and distribution requirements are consistent with previous heat recovery system requirements.
- Sentence (6) requires the airflow in the outdoor air supply duct to be within  $\pm 10\%$  of the actual normal operating exhaust capacity of the principal ventilation fan.
- Sentence (8) requires outdoor air tempering if an HRV is not being used for outdoor air supply.
- Sentence (9) sets the installation requirements for the tempering device, if one is required.

## Ventilation Systems Not Used in Conjunction with Forced Air Heating Systems (Article 9.32.3.5.) Continued

- Sentence (11) exempts distribution of outdoor air to the principal living area in specific circumstances.
- Sentence (13) regulates the location of air supply outlets and promotes air diffusion across the ceiling.

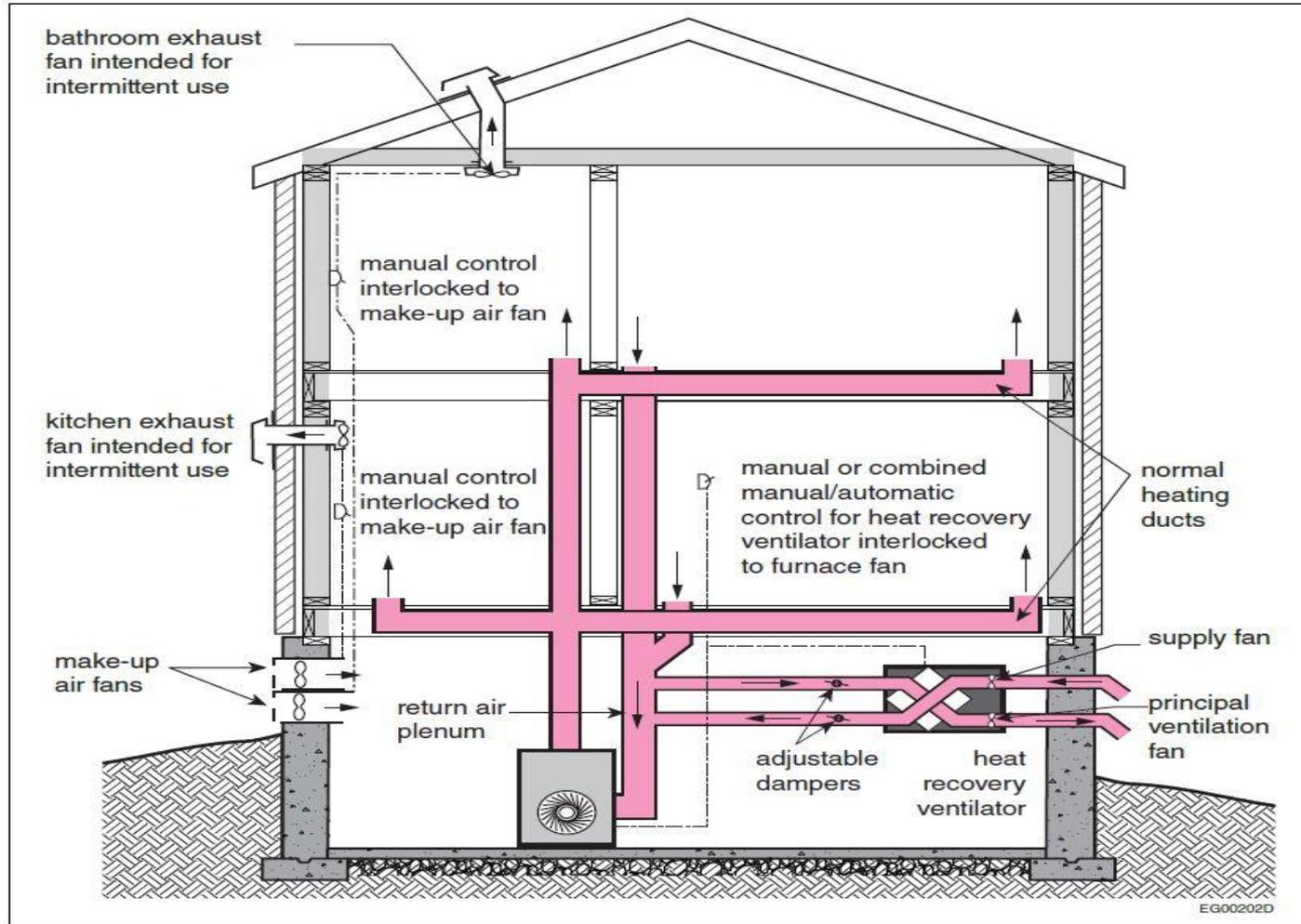
# Exhaust-Only Ventilation Systems (Article 9.32.3.6.)

## Exhaust-Only Ventilation Systems (Article 9.32.3.6.)

- This exhaust only ventilation systems is still included in the Section 9.32. for limited circumstances.
- However, prescriptive requirements of Supplementary Standard SB-12 mandates HRV to all houses.

# HRV and interlocking

## Mechanical ventilation using HRV coupled with forced air heating



Courtesy of the NBC

## Supplemental Exhaust (Article 9.32.3.7.)

- Sentence (1) requires a supplemental exhaust fan with a rated capacity not less than 50 L/s to be installed in the kitchen.
- Sentence (2) exempts the requirement in Sentence (1) if the kitchen fan serves as principal ventilation fan.
- Sentence (3) exempts the requirement in Sentence (1) if the principal ventilation fan is located in the kitchen but is connected to multiple inlets, and the exhaust rate of the principal ventilation fan can be increased upon demand.
- If the exhaust intake for the principal ventilation fan is not located in the bathroom / water closet room, a supplemental exhaust fan with a rated capacity not less than 25 L/s must be installed.

# Protection Against Depressurization (Article 9.32.3.8.)

## Protection Against Depressurization

- This Article applies when there is fuel fired appliances, other than direct-vented or mechanically vented types.
- Sentence (2) sets the tolerances for the outdoor makeup air supply rate compared to the capacity of the mechanical air exhausting device, other than the principal ventilation fan.
- Sentence (3) requires interconnection between the outdoor makeup air supply fan and exhausting device.
- Sentence (4) requires the outdoor makeup air to be supplied to an unoccupied area or tempered if supplied to an occupied area.
- If makeup air is not proposed to be provided, Sentence (7) requires a depressurization test conforming to CAN/CGSB-51.71 to ensure the depressurization level is not exceeded.

# Carbon Monoxide Alarms (Article 9.32.3.9.)

## Carbon Monoxide Alarms

- ❑ The location of carbon monoxide alarms has been **expanded** to additional spaces within residential occupancies **such as**:
  - Suites with a flue.
  - Suites adjacent to rooms/ other suites/ areas with a flue or fuel-burning appliance.
  - Every storey of a suite, regardless of whether or not there is a sleeping area.
  - Public corridors that serve residential suites and are directly heated by a forced air fuel-burning appliance.

# Carbon Monoxide Alarms (Article 9.32.3.9.) Cont'd

## Carbon Monoxide Alarms – Other Occupancies

- ❑ Carbon monoxide alarms are also required in additional situations in buildings of any occupancy:
  - Service rooms/ areas outside residential suites, that have a fuel-burning appliance associated with building services.
  - Laundry rooms outside residential suites, that have a fuel-burning appliance.
- ❑ An alternative power source in case of power supply interruption is allowed for hard-wired carbon monoxide alarms.
- ❑ A visual signalling component is required for each carbon monoxide alarm.

# Ventilation

## Fans (Article 9.32.3.10.)

- ❑ Sentence (3) introduces Table 9.32.3.10.- A, which sets the minimum external static pressure differential for rating of fans.

## Ducts (Article 9.32.3.11.)

- ❑ Table 9.32.3.11-A, referenced under Sentence (9), prescribes the maximum length of duct based on the fan's external static pressure, duct diameter and maximum airflow.

## Heat Recovery Ventilators (Article 9.32.3.12.)

- ❑ Appendix note to this Article clarifies that energy recovery ventilators (ERVs) are a type of heat recovery ventilator and must therefore comply with the requirements of Article 9.32.3.12.

# Ventilation

## Outdoor Intake and Exhaust Openings (Article 9.32.3.13.)

- Sentence (3) revises the distance separating air intakes for mechanical ventilation from exhaust outlets that are potential sources of contaminants from 900 to 1800 mm.
- Sentence (4) requires 1800 mm clearance from exhaust outlets that discharge air containing moisture to air intakes and vented soffits.
- Table 9.32.3.13-A, referenced under Sentence (6), lists the widths of unvented or blocked soffits where exhaust outlets are less than 1800 mm from a soffit.

# Heating and Air-Conditioning

# Heating and Air-Conditioning

## Application (Article 9.33.1.1.)

- Sentence (1) has been amended to clarify that this Section applies to heating and air-conditioning systems for single dwelling units, and radiant heating systems in a house with a secondary suite.
- Sentence (2) clarifies that heating and air-conditioning systems for other occupancies and other systems serving multiple units must conform to Part 6.
- Sentence (3) limits the interconnection of air distribution systems in a house with a secondary suite.

# Heating and Air-Conditioning

## Indoor Design Temperatures (Article 9.33.3.1.)

- The indoor design temperature in unfinished basements has been lowered from 22°C to 18°C.
- New Clause (1)(c) has been added to set an indoor design temperature of 18°C in common service rooms, ancillary spaces and exits in houses with a secondary suite.

# Heating and Air-Conditioning

## Installation of Hydronic Heating Systems (Article 9.33.4.2.)

- ❑ This new Article mirrors the requirements in Sentence 6.2.1.5.(6) for the design and installation of hydronic heating systems in accordance with CSA B214 or good engineering practice described in Article 9.33.4.1.



## Heating System Control (Article 9.33.4.3.)

- ❑ This new Article requires a temperature control in each dwelling unit in accordance with Article 12.3.1.3. “Temperature Control in Houses and Dwelling Units”.

# Heating and Air-Conditioning

## **Access (Article 9.33.4.4.)**

- This new Article requires that access be provided for the inspection, maintenance and repair of all components of a heating or air-conditioning system.

## **Protection from Freezing (Article 9.33.4.5.)**

- This new Article reflects similar provisions in Sentence 6.2.1.6.(3) which requires that heating or air-conditioning equipment in an unheated space be protected from freezing.

## **Expansion, Contraction and System Pressure (Article 9.33.4.6.)**

- This Article mirrors Article 6.2.1.3. for thermal expansion allowance in the design of heating and cooling systems and maintain system pressure within the allowable pressure limits.

# Heating and Air-Conditioning

## **Structural Movement (Article 9.33.4.7.)**

- ❑ This Article mirrors Article 6.2.1.4. for mechanical systems and equipment to be designed to resist the impact of structural movement.

## **Contaminant Transfer (Article 9.33.4.9.)**

- ❑ This new Article requires that systems serving garages or located in garages do not transfer contaminants to habitable spaces. This Article is similar to provisions in Sentence 6.3.1.5.(2).

# Heating and Air-Conditioning

## Capacity of Heating Appliances (Article 9.33.5.1.)

- Sentences (1) and (2) which reference Part 6 provisions for determining heating and cooling system capacity have been revised to reference new Sentence 9.33.4.1.(1).
- Sentence (3) has been amended to clarify the oversizing and undersizing of heating and cooling equipment capacities must be determined in accordance with CSA F280.

# Heating and Air-Conditioning

## Air Duct Systems (Subsection 9.33.6.)

- The requirements for air ducts for low capacity systems in Subsection 6.2.4. have been relocated to new Subsection 9.33.6.

# Heating and Air-Conditioning

## Air Duct Systems (Subsection 9.33.6.) Cont'd

- The following Table lists the relocation of the Articles from former Subsection 6.2.4. to 9.33.6. in the 2024 OBC.

2012 OBC Article No.	2024 OBC Article No.	Title
6.2.4.1.	9.33.6.1.	Application
6.2.4.2.	9.33.6.2.	Materials in Air Duct Systems
6.2.4.9.	9.33.6.3.	Tape
6.2.4.8.	9.33.6.4.	Coverings, Linings and Insulation
6.2.4.2.(3)	9.33.6.5.	Galvanized Steel or Aluminum Supply Ducts
6.2.4.3.	9.33.6.6.	Construction of Ducts and Plenums
6.2.4.3.	9.33.6.7.	Installation of Ducts and Plenums

# Heating and Air-Conditioning

## Air Duct Systems (Subsection 9.33.6.) Cont'd

2012 OBC Article No.	2024 OBC Article No.	Title
6.2.4.10.	9.33.6.8.	Clearances of Ducts and Plenums
6.2.4.6.	9.33.6.9.	Adjustable Dampers and Balance Stops
6.2.4.13.	9.33.6.10.	Warm-Air Supply Outlets and Return Inlets - General
6.2.4.13.	9.33.6.10A.	Supply, Return, Intake and Exhaust Openings
6.2.4.4.	9.33.6.11.	Warm-Air Supply Outlets
6.2.4.7.	9.33.6.12.	Return-Air Inlets
6.2.4.14.	9.33.6.14.	Filters and Odour Removal Equipment
6.2.4.11.	9.33.6.14A.	Exhaust Ducts and Outlets

# Heating and Air-Conditioning

Section 9.33. now also mirrors some of the other Part 6 requirements for houses and houses with secondary units:

Those are :

- Radiators and Convectors (Subsection 9.33.7.)
- Piping for Heating and Cooling Systems (Subsection 9.33.8.)
  - Piping material, insulation, clearances, protection against hot temperature exposure...
- Air Conditioning Unit Installation (Subsection 9.33.9.)
- Signpost for Chimney and Venting (Subsection 9.33.10)

# Miscellaneous

# Miscellaneous

## Numeric Conversion

- Part 9 formerly used hard metric conversion of 305 mm, 406 mm and 610 mm for the imperial spacing of 12, 16 and 24 inches for framing members. These values now follow the soft conversion methodology of 300 mm, 400 mm and 600 mm respectively. However, it is intended that, for the purpose of framing dimensions, both conversions are acceptable.
- The soft conversion methodology harmonizes with the 2020 NBC.

# Door Action (Article 9.9.6.4.)

## Door Action (Article 9.9.6.4.)

- ❑ Sentence (5) of this Article has been amended to include a new Clause (c) that exempts exit doors from both swinging on its vertical axis and require identification, where they serve one storey storage suites not larger than 28 m<sup>2</sup> in gross area that are in warehousing buildings and open directly to the exterior at ground level.

# Sump Pits (Article 9.14.5.2.)

## Sump Pits (Article 9.14.5.2.)

- New Sentence (1) has been added that specifies the minimum depth and area dimensions of sump pits as follows:
  - Sump pits cannot be less than 750 mm deep.
  - Sump pits cannot be less than 0.25 m<sup>2</sup> in area.

# Connections to Preservative-Treated Wood (Article 9.23.2.4.)

## Connections to Preservative-Treated Wood (Article 9.23.2.4.)

- New Article 9.23.2.4. “Connections to Preservative-Treated Wood” has been added that specifies the materials or treatment of materials for connectors and fasteners that are in contact with preservative-treated wood.
- Connectors can be made of hot-dipped, zinc-coated galvanized steel with a coating weight not less than Z550 conforming to ASTM A653 / A653M, “Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process,” or
- A material that provides an equivalent level of corrosion protection the material above, or
- Stainless steel.

# Connections to Preservative-Treated Wood (Article 9.23.2.4.)

## Connections to Preservative-Treated Wood (Article 9.23.2.4.) (Cont'd)

- ❑ Fasteners used to attach connectors must be made of:
  - ❑ Galvanized steel coated with zinc in accordance with ASTM A153 / A153M, “Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware,” or
  - ❑ A material that provides an equivalent level of performance and is compatible with the connector.
- ❑ Connectors and fasteners that are in contact with wood that has been treated with a disodium octaborate tetrahydrate or zinc borate preservative and is installed in a dry interior environment are permitted to be made of uncoated carbon steel.

# Vapour Barrier Materials (Article 9.25.4.2.)

## Vapour Barrier Materials (Article 9.25.4.2.)

- New Sentence (2) has been added that allows the installation of variable-permeance membrane-type vapour barrier materials on foundation wall assemblies.
- New Sentence (6) has been added that introduces requirements to protect non-polyethylene membrane-type vapour barriers that are susceptible to deterioration under prolonged exposure to direct ultraviolet radiation.

# Cladding (Article 9.27.1.1.)

## General (Article 9.27.1.1.) - Cladding

- ❑ Sentence (1) has been amended by adding two new types of cladding materials:
  - Insulated Vinyl Siding (Subsection 9.27.12.)
  - Polypropylene Siding (Subsection 9.27.13.)
- ❑ Sentences (2), (3) and (5) have been amended by adding "above-ground flat insulation concrete forms" as a substrate for:
  - Stucco installation
  - Masonry installation
  - Exterior insulation finish system (EIFS)

## Section 9.36. Reserved

- This is consistent with the numbering convention followed throughout Division B. As such Section 9.36. (formerly Cottages) has been marked as reserved to maintain consistency with the 2020 NBC numbering system and requirements.
- Subsequently, the remaining Sections are Ontario-Specific Sections, and have been renumbered accordingly:
  - Section 9.36. “Cottages” is now Section 9.37.
  - Section 9.37. “Log Construction” is now Section 9.38.
  - Section 9.38. “Park Model Trailers” is now Section 9.39.
  - Section 9.39. “Reinforced Concrete Slabs” is now Section 9.40.
  - Section 9.40. “Additional Requirements for Change of Use” is now Section 9.41.

**Questions?**