Ontario's 2024 Building Code

Introducing Key Changes to Part 6, Heating, Ventilating and Air-Conditioning

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Building and Development Branch
Planning and Growth Division

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.

Purpose

- To ensure smooth transition to 2024 Building Code, this deck is intended to inform ministry partners and stakeholders about major changes implemented in Part 6, Heating, Ventilating and Air-Conditioning of Division B in Ontario's 2024 Building Code.

- The changes are intended to reduce existing variations with the National Building Code (NBC), align with new provisions introduced through 2020 National Construction Codes, and address Ontario-Specific 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, for applications for which drawings were substantially complete before January 1, 2025.

Reorganization of Part 6

Part 6 has been reorganized into the following Sections:

- ❑ 6.1. General
- ❑ 6.2. Design and Installation
- ❑ 6.3. Ventilation Systems
- ❑ 6.4. Heating Appliances
- ❑ 6.5. Thermal Insulation Systems
- ❑ 6.6. Refrigeration and Cooling Systems
- ❑ 6.7. Piping Systems
- ❑ 6.8. Equipment Access
- ❑ 6.9. Fire Safety Systems

Content

The following Items will be covered:

- ❑ Design and Installation
- ❑ Ventilation Systems
- ❑ Thermal Insulation Systems
- ❑ Fire Safety Systems

Design and Installation

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Design and Installation (Section 6.2.)

Good Engineering Practice (Article 6.2.1.1.)

- Clause 1(a) has removed references to ANSI/ASHRAE/IESNA 90.1.
- Clause 1(d) amends the reference from NFPA Fire Codes to NFPA Standards.
- Clause (1)(j) which was previously reserved now references ASHRAE Guideline 12 to minimize risk of legionella
- Many of the applicable good engineering practice documents are duplicated and some relocated in Article 9.33.4.1.

Design and Installation (Section 6.2.)

Installation Standards (Article 6.2.1.5.)

- Sentence 6.2.1.5.(3) has been amended to clarify that CAN/CSA-C448.2 applies to either a house with or without a secondary suite, or to a building where the area of the conditioned space is not more than 1400 m^2.

Air Ducts for Low-Capacity Systems (6.2.4.)

- The requirements for air ducts for low-capacity systems in Subsection 6.2.4. have been relocated to new Subsection 9.33.6. “Air Duct Systems”

Ventilation Systems

Ventilation Systems (Section 6.3.)

Required Ventilation (Article 6.3.1.1.)

- Sentence (2) expands on the previous outdoor air supply requirements and lists three outdoor air ventilation design options by referencing specific sections from the ANSI/ASHRAE 62.1 “Ventilation for Acceptable Indoor Air Quality” standard.
- New Sentence (3) requires exhaust ventilation to be provided in accordance with Section 6.5 of ANSI/ASHRAE 62.1.
- New terminology “heating-season mechanical ventilation” is introduced in Sentence (4).

Ventilation Systems (Section 6.3.)

Crawl Spaces and Attic or Roof Spaces (Article 6.3.1.2.)

- ❑ Sentence (1) has been revised to require ventilation when such spaces are unconditioned and unoccupied.

Ventilation of Storage and Repair Garages (Article 6.3.1.3.)

- ❑ Clause 1(a) no longer prescribes the distance from the floor when measuring the concentration limit of carbon monoxide.
- ❑ Most of the wording is aligned with national wording and maximum tolerable Carbon monoxide level, excluding repair garages which remained the same.

Ventilation Systems (Section 6.3.)

Drain Pans (Article 6.3.2.2.)

- Sentence (1) has been modified to clarify that drain pans are required for all HVAC systems that generate condensate or introduce liquid water into the airstream in ducts.

Ventilation Systems (Section 6.3.)

Materials in Air Duct Systems (Article 6.3.2.3.)

- Sentence (1) references Article 3.6.5.1. for the fire safety requirements of materials used to construct ducts, duct connectors, associate fittings and plenums.

Duct Coverings, Linings, Adhesives and Insulation (Article 6.3.2.5.)

- Sentence (1) references Article 3.6.5.4. for the fire safety characteristics of coverings, linings and associated adhesives and insulation used in air ducts, plenums and other parts of air duct systems. These fire safety provisions have also been relocated in Part 3.

Ventilation Systems (Section 6.3.)

Evaporative Equipment (Articles 6.3.2.15. and 6.3.2.16.)

- Sentence 6.3.2.15.(1) requires evaporative heat rejection equipment to incorporate a means to disperse entrained water droplets and comply with the manufacturer's specifications for the design discharge velocity.
- Continuous water circulation is required in all parts of the system that are normally wetted during operation. When not operating, these systems are also required to incorporate a method to prevent water stagnation.
- Such systems and components are to be constructed of corrosion-resistant, non-porous materials that do not promote the proliferation of disease-causing micro-organisms.

Ventilation Systems (Section 6.3.)

Evaporative Equipment (Articles 6.3.2.15. and 6.3.2.16.) Cont'd

- Sentence 6.3.2.15.(5) ensures adequate distance between the air discharge locations of evaporative heat rejection systems and certain outdoor spaces and building components.
- Sentence 6.3.2.15.(7) requires air intakes of evaporative heat rejection systems to incorporate measures to minimize entrainment of organic matter.
- Make-up water connections are required to be equipped with backflow prevention devices.
- Sentence 6.3.2.15.(10) requires drains, overflows and blow-downs to be connected to the building's drainage system.

Ventilation Systems (Section 6.3.)

Requirements for Venting (Article 6.3.3.1.)

- New Sentence (2) requires that vented combustion products from appliances be discharged a minimum distance away from certain outdoor spaces and building components where the vented products could contaminate the air of occupiable spaces.

Laboratory Ventilation Systems (Section 6.3.)

General Ventilation (Article 6.3.4.2.)

- New Sentence (3) has been revised to indicate that laboratory ventilation systems be maintained under Section 4.12. of the Fire Code. Modifications have been made to this Sentence to make it consistent with Ontario's regulations.

Thermal Insulation Systems

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Thermal Insulation Systems (Section 6.5.)

Insulation and Coverings (Article 6.5.1.1.) for Pipes and Equipment

- Sentence (3) has been amended to reduce the maximum temperature of exposed piping and equipment from 70°C to 52°C when subject to human contact.

Fire Safety Systems

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Fire Safety Systems (Section 6.9.)

Fire Safety Requirements (Article 6.9.1.1.)

- Sentence (1) serves as a signpost to comply with new Subsection 3.6.5. for the fire safety characteristics of heating, ventilating and air-conditioning systems.
- Sentence (2) describes some of the fire safety characteristics referred to in Sentence (1). Those are but are not limited to
  - use of combustible materials in duct systems,
  - flame-spread ratings and smoke-developed ratings of duct and pipe materials and coverings,
  - installation of equipment relative to property lines, and
  - requirements for fire dampers and fire stop flaps.
- This article also includes signposts to Part 3, for fire dampers, exhaust ducts and outlets, and ducts in exits

Fire Safety Systems (Section 6.9.)

Application – Carbon Monoxide Alarms (Article 6.9.3.1.)

- Sentence (1) expands the application of carbon monoxide alarms to care occupancies and other parts of residential occupancies.

Fire Safety Systems (Section 6.9.)

Location of Carbon Monoxide Alarms (Article 6.9.3.2.)

- Sentence (1) expands the installation requirements of carbon monoxide alarms to include care occupancies, in addition to residential occupancies.
- Sentence (2) specifies where carbon monoxide alarms must be installed in a suite of residential occupancy or care occupancy, adjacent to each sleeping room and on each storey without a sleeping room, except in combined living and sleeping areas.
- Sentence (3) addresses the requirement for carbon monoxide alarms in combined living and sleeping areas in a suite of residential occupancy or care occupancy.

Fire Safety Systems (Section 6.9)

Location of Carbon Monoxide Alarms (Article 6.9.3.2.)

- Sentence (4) mandates the installation of carbon monoxide alarms in each sleeping room within a residential occupancy or care occupancy if the room contains a fuel-burning appliance, flue, or shares a common wall, floor, or ceiling with areas containing such appliances or a garage.

- Sentence (5) requires carbon monoxide alarms to be installed in public corridors serving suites of residential occupancy if the corridor is directly heated by a forced-air fuel-burning appliance.

Fire Safety Systems (Section 6.9.)

Location of Carbon Monoxide Alarms (Article 6.9.3.2.) Cont'd

- Sentence (6) details the placement of carbon monoxide alarms in a public corridor addressed in Sentence (5) ensuring they are installed in each portion of divided corridors and spaced no more than 25 meters apart in undivided corridors.

Fire Safety Systems (Section 6.9.)

Location of Carbon Monoxide Alarms in All Buildings (Article 6.9.3.3.)

- Sentence (1) requires carbon monoxide alarms to be installed in service rooms or other areas of a building, regardless of the occupancy type,
  - if the subject service rooms or other areas of a building contain a fuel-fired appliance used for building services or laundry drying equipment, and
  - is not located within a suite of residential occupancy.

Fire Safety Systems (Section 6.9.)

Installation and Conformance to Standards (Article 6.9.3.4.)

- Sentence (1) has been expanded to specify the duration of operation for carbon monoxide alarms under battery mode. Additionally, the wiring requirements of carbon monoxide alarms now include activation of alarms in a public corridor serving suites of residential occupancy.
- Sentence (2) allows carbon monoxide alarms to be battery-operated if the building is not supplied with electrical power.
- Sentence (3) introduces the requirement for a visual signalling component conforming to NFPA 72, with an exemption if the building is not supplied with electrical power.

Fire Safety Systems (Section 6.9.)

Installation and Conformance to Standards (Article 6.9.3.4.) Cont'd

- Sentence (5) sets the minimum luminous intensity for the visual signalling component when installed in sleeping rooms or combined living and sleeping areas.

- Sentence (6) outlines additional requirements for the visual signalling component, including that it need not be integrated with the carbon monoxide alarm, be on battery backup, or have synchronized flash rates when installed in a dwelling unit.

- Sentence (7) specifies the installation height of the carbon monoxide alarm, either at the manufacturer's recommended height or, in the absence of specific instructions, on or near the ceiling.

Heating and Air-Conditioning- Restructuring Part 6 to Part 3

- The following Table lists the relocation of some Articles from Part 6 to Part 3 in the 2024 OBC

2012 OBC	2024 OBC	
Article Number	Article Number	Article Title
6.2.3.2.	3.6.5.1.	Materials in Air Duct Systems
6.2.3.16.	3.6.5.2.	Vibration Isolation Connectors
6.2.3.17.	3.6.5.3.	Tape
6.2.3.4.	3.6.5.4.	Coverings, Linings, Adhesives and Insulation
6.2.9.2.	3.6.5.5.	Insulation and Coverings
6.2.3.20.	3.6.5.8.	Return-Air System
6.2.4.10	3.6.5.6.	Clearances of Ducts and Plenums

Heating and Air-Conditioning- Restructuring Part 6 to Part 9

- 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- Restructuring Part 6 to Part 9

Air Duct Systems (Subsection 9.33.6.)

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

Questions?

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