Practical Use of the National Building Code

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National Research Council of Canada

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Outline

- Introduction
- National Model Codes
- National Building Code
  - What does the NBC cover?
  - What does the NBC not cover?
  - Structure of the NBC 2025
  - Performance vs Prescriptive Reqmts
  - Use of “and” and “or”
  - Supplementary Material
- Walkthrough Exercise

Enter Draw to Win
NBC 2025 Volume 2 (Part 9)

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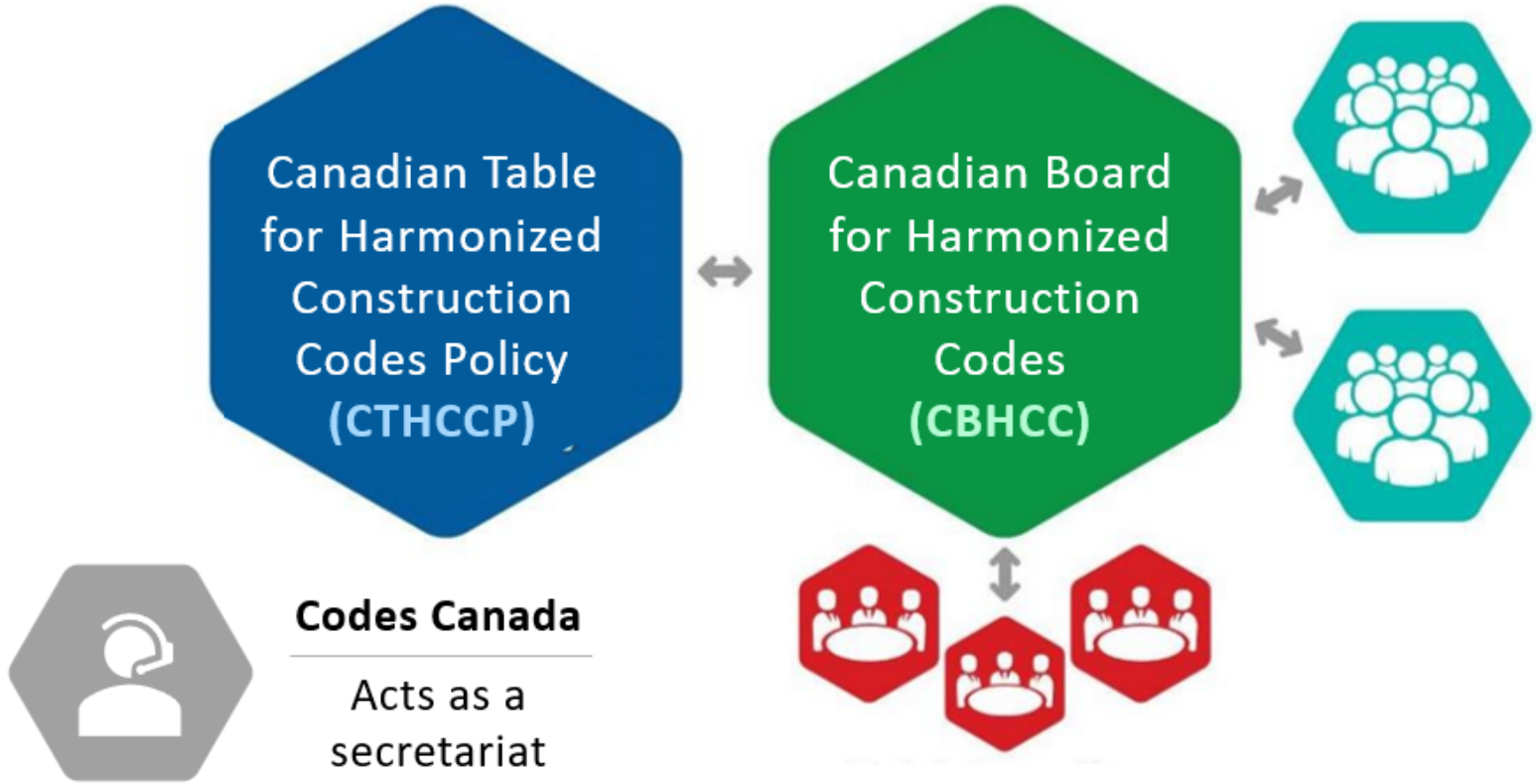
Who

CTHCCP

Sets strategic direction + oversees the CBHCC

CBHCC

Decision-making body for National Model Codes



Advisory Council

Provides advice on policy issues + implementation

Codes community

Provides input through public reviews + meetings

Codes Canada

Acts as a secretariat

Technical committees

Develop proposed changes

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Harmonized Code Development System

National code development

- New edition every ~5 years, prepared centrally
- Consensus-based process that relies on volunteers
- Reflects new technologies, materials, practices, research, and changing needs of Canada
- Model codes; must be adopted to become law

Provinces & territories (PTs); AHJs

- Regulate the design & construction of new buildings
- Regulate the maintenance & operation of fire safety systems in existing buildings
- Responsible for adoption and enforcement of the codes (with or without variations, to suit regional needs)

Codes Canada (NRC)

- Supports development of model building regulations for Canada
- Spirit of harmonization
- Publication of Codes & supplemental material (incl. some PT codes)
- Secretarial services to the Codes Board (CBHCC) & code development system

National Mode Codes & Guides

50+ Codes published since 1941

Latest editions

- National Building Code 2025
- National Fire Code 2025
- National Plumbing Code 2025
- National Energy Code for Buildings 2025

Guides, supplements and commentaries

- User's Guide–Structural Commentaries
- Illustrated Guide–Part 9 NBC
- User's Guide–National Energy Code of Canada for Buildings

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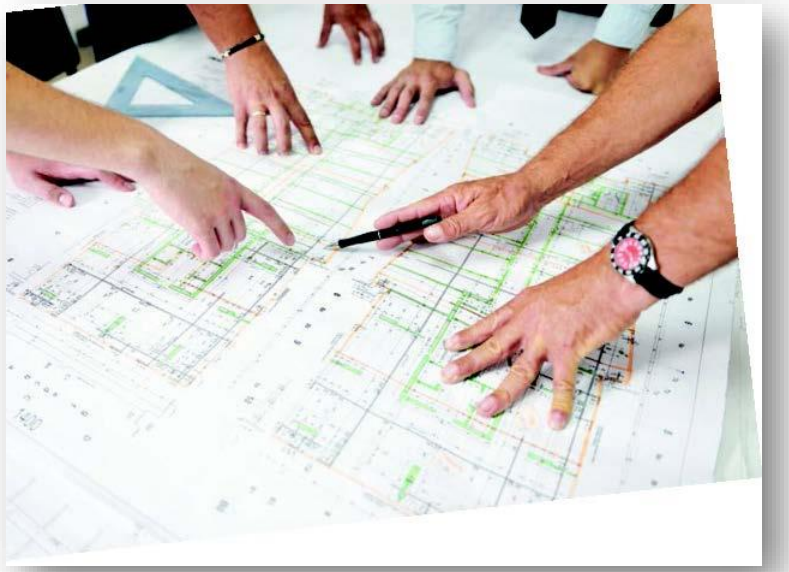
HTTPS://CBHCC-CCHCC.CA/EN/NATIONAL-MODEL-CODES-COLLECTION/

National Building Code

What does the NBC cover?

- Design and construction of new buildings
- Alterations
- Change of use
- Demolition



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National Building Code

What does the NBC not cover?

- Aesthetics and Architectural Style
- Land Use and Zoning
- Maintenance and Operation After Construction
- Construction management practices
- Property Value, Market Considerations, Insurance

Structure of the NBC 2025 – Table of Contents

Volume 1

Division A. Compliance, Objectives and Functional Statements

Division B. Acceptable Solutions

Part 1.	General
Part 2.	Farm Buildings
Part 3.	Fire Protection, Occupant Safety and Accessibility
Part 4.	Structural Design
Part 5.	Environmental Separation
Part 6.	Heating, Ventilating and Air Conditioning
Part 7.	Plumbing Services
Part 8.	Safety Measures at Construction & Demolition Sites

Division C. Administrative Provisions

Index

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Structure of the NBC 2025 – Table of Contents

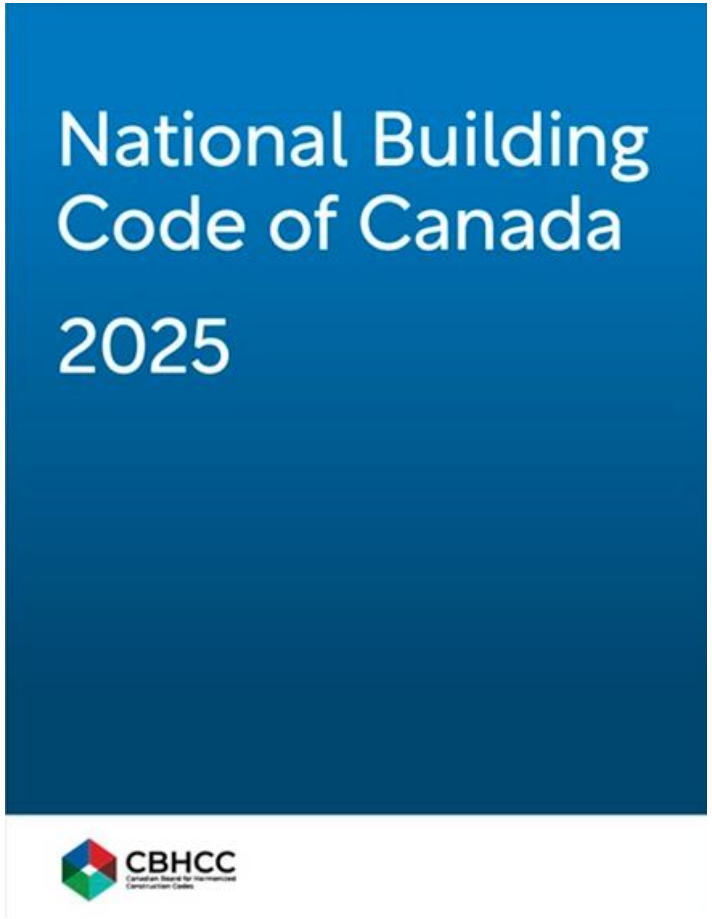
Volume 2

Division B. Acceptable Solutions

Part 9. Housing and Small Buildings

Part 10. Alteration of Existing Buildings

Index



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Structure of the NBC 2025 – Numbering and Writing System

9	**Part**
9.10.	**Section**
9.10.19.	**Subsection**
9.10.19.3.	Article
9.10.19.3.(1)	Sentence
9.10.19.3.(1)(a)	Clause
9.10.19.3.(1)(b)(i)	Subclause

9.10.19. Smoke Alarms

9.10.19.1. Required Smoke Alarms

1) Except as permitted by Article 9.10.19.8., *smoke alarms* conforming to CAN/ULC-S531, "Standard for Smoke Alarms," shall be installed in
- a) each *dwelling unit*,
- b) each sleeping room not within a *dwelling unit*, and
- c) ancillary spaces and common spaces not in *dwelling units* in a house with a *secondary suite*.

9.10.19.2. Sound Patterns of Smoke Alarms

1) The sound patterns of *smoke alarms* shall
- a) meet the temporal patterns of *alarm signals* (see Note A-3.2.4.18.(2)), or
- b) be a combination of temporal pattern and voice relay.

9.10.19.3. Location of Smoke Alarms

1) Within *dwelling units*, sufficient *smoke alarms* shall be installed so that
- a) there is at least one *smoke alarm* installed on each *storey*, including *basements*, and
- b) on any *storey* of a *dwelling unit* containing sleeping rooms, a *smoke alarm* is installed
  - i) in each sleeping room, and
  - ii) in a location between the sleeping rooms and the remainder of the *storey*, and if the sleeping rooms are served by a hallway, the *smoke alarm* shall be located in the hallway.

(See Note A-9.10.19.3.(1).)

2) A *smoke alarm* required by Sentence (1) shall be installed in conformance with CAN/ULC-S553, "Standard for the Installation of Smoke Alarms."

3) *Smoke alarms* required in Article 9.10.19.1. and Sentence (1) shall be installed on or near the ceiling.

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Structure of the NBC 2025 – Numbering and Writing System

Section 9.10. Fire Protection

Section

9.10.19. Smoke Alarms

Subsection

9.10.19.3. Location of Smoke Alarms

Article

Sentences

Clauses

Subclauses

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Approximate location of new or revised content

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Structure of the NBC 2025 – Numbering and Writing System

Section 9.10. Fire Protection

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Defined Terms
Explanatory Note
Referenced Document
Cross-references

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Structure of the NBC 2025 – Defined Terms – Division A (Volume 1)

Section 1.4. Terms and Abbreviations

1.4.1. Definitions of Words and Phrases

1.4.1.2. Defined Terms

1) The words and terms in italics in this Code shall have the following meanings:

Basement means a *storey* or *storeys* of a *building* located below the *first storey*.

Dwelling unit means a *suite* operated as a housekeeping unit, used or intended to be used by one or more persons and usually containing cooking, eating, living, sleeping and sanitary facilities.

Smoke alarm means a combined *smoke detector* and audible alarm device designed to sound an alarm within the room or *suite* in which it is located upon the detection of smoke within that room or *suite*.

Storey means that portion of a *building* that is situated between the top of any floor and the top of the floor next above it, and if there is no floor above it, that portion between the top of such floor and the ceiling above it.

Smoke detector means a *fire detector* designed to operate when the concentration of airborne combustion products exceeds a predetermined level.

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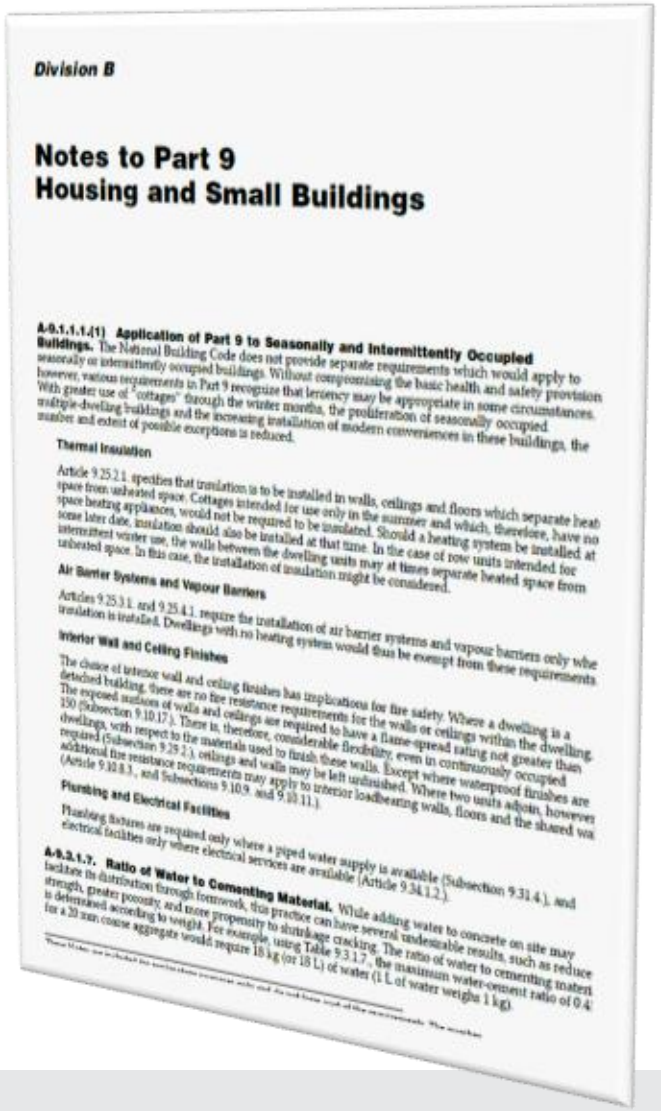
Structure of the NBC 2025 – Explanatory Notes

A-9.7.5.2.(6) Door Fasteners. The purpose of the requirement for 30 mm screw penetration into solid wood is to prevent the door from being dislodged from the jamb due to impact forces. It is not the intent to prohibit other types of hinges or strikeplates that are specially designed to provide equal or greater protection.



Division B

Notes to Part 9
Housing and Small Buildings

A-9.1.1.1.(1) **Application of Part 9 to Seasonally and Intermittently Occupied Buildings.** The National Building Code does not provide separate requirements which would apply to seasonally or intermittently occupied buildings. Without compromising the basic health and safety provision however, various requirements in Part 9 recognize that leniency may be appropriate in some circumstances. With greater use of "cottages" through the winter months, the proliferation of seasonally occupied multiple-dwelling buildings and the increasing installation of modern conveniences in these buildings, the number and extent of possible exceptions is reduced.

Thermal Insulation

Article 9.25.2.1. specifies that insulation is to be installed in walls, ceilings and floors which separate heat space from unheated space. Cottages intended for use only in the summer, and which, therefore, have no space heating appliances, would not be required to be insulated. Should a heating system be installed at some later date, insulation should also be installed at that time. In the case of row units intended for intermittent winter use, the walls between the dwelling units may at times separate heated space from unheated space. In this case, the installation of insulation might be considered.

Air Barrier Systems and Vapour Barriers

Articles 9.25.3.1. and 9.25.4.1. require the installation of air barrier systems and vapour barriers only whe insulation is installed. Dwellings with no heating system would thus be exempt from these requirements

Interior Wall and Ceiling Finishes

The choice of interior wall and ceiling finishes has implications for fire safety. Where a dwelling is a detached building, there are no fire resistance requirements for the walls or ceilings within the dwelling. The exposed surfaces of walls and ceilings are required to have a flame-spread rating not greater than 150 (Subsection 9.10.17.). There is, therefore, considerable flexibility, even in continuously occupied dwellings, with respect to the materials used to finish these walls. Except where waterproof finishes are required (Subsection 9.29.2.), ceilings and walls may be left unfinished. Where two units adjoin, however additional fire resistance requirements may apply to interior loadbearing walls, floors and the shared wa (Article 9.10.8.3., and Subsections 9.10.9. and 9.10.11.).

Plumbing and Electrical Facilities

Plumbing fixtures are required only where a piped water supply is available (Subsection 9.31.4.), and electrical facilities only where electrical services are available (Article 9.34.1.2.).

A-9.3.1.7. **Ratio of Water to Cementing Material.** While adding water to concrete on site may facilitate its distribution through formwork, this practice can have several undesirable results, such as reduce strength, greater porosity, and more propensity to shrinkage cracking. The ratio of water to cementing materi is determined according to weight. For example, using Table 9.3.1.7., the maximum water-cement ratio of 0.4 for a 20 mm coarse aggregate would require 18 kg (or 18 L) of water (1 L of water weighs 1 kg).

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Structure of the NBC 2025 – Referenced Documents

Division A

Section 1.5. Referenced Documents and Organizations

1.5.1. Referenced Documents

1.5.1.2. Conflicting Requirements
1) In case of conflict between the provisions of this Code and those of a referenced document, the provisions of this Code shall govern.

Section 1.3. Referenced Documents and Organizations

1.3.1. Referenced Documents

1.3.1.1. Effective Date

1) Unless otherwise specified herein, the documents referenced in this Code shall include all amendments, revisions, reaffirmations, reapprovals, addenda and supplements effective to 30 June 2024.

1.3.1.2. Applicable Editions

1) Where documents are referenced in this Code, they shall be the editions designated in Table 1.3.1.2.

Table 1.3.1.2.
Documents Referenced in the National Building Code of Canada 2025[1][2]
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number[3]	Title of Document	Code Reference
AAMA	501-05	Methods of Test for Exterior Walls	A-5.9.3.
AAMA	501.1-05	Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure	A-5.9.3.
AAMA	501.2-09	Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems	A-5.9.3.

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Structure of the NBC 2025 – “Appendices”

Division B

Part 9

Housing and Small Buildings

Table 9.10.3.1.-A
Fire and Sound Resistance of Walls(1)
Forming Part of Article 5.8.1.3., Sentence 9.10.3.1.(1), Articles 9.11.1.3. and 9.11.1.4., and Sentence 9.29.5.9.(5)

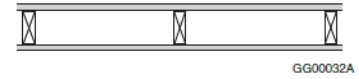
Type of Wall	Wall Number	Description	*Fire-Resistance Rating*(2)(3)(4)		Typical *Sound Transmission Class*(2)(4)(5)
			Loadbearing	Non-*Loadbearing*	
• Wood Studs	**W1**	• 38 mm x 89 mm studs spaced 400 mm or 600 mm o.c. • with or without absorptive material • 1 layer of gypsum board on each side	 GG00032A		

Table 9.20.17.4.-A
Maximum Allowable Clear Spans for Lintels in Flat Loadbearing Insulating Concrete Form (ICF) Walls(1)(2)(3) (1-10M Bottom Bar)
Forming Part of Sentences 9.3.2.8.(1) and 9.20.17.4.(3)

Minimum Lintel Thickness, mm	Minimum Lintel Depth, mm	Maximum Clear Span, m			
		Supporting Light-Frame Roof Only		Supporting ICF Second *Storey* and Light-Frame Roof	
		Maximum Ground Snow Load, kN/m²			
		1.50	3.33	1.50	3.33
140	200	1.41	1.18	1.03	0.93
	300	1.78	1.50	1.30	1.18
	400	2.08	1.75	1.53	1.38

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Structure of the NBC 2025 – Objectives – Div. A Part 2 (Volume 1)

Section 2.2. Objectives

2.2.1. Objectives

2.2.1.1. Objectives

1) The objectives of this Code are as follows (see Note A-2.2.1.1.(1)):

OS Safety
An objective of this Code is to limit the probability that, as a result of the design, construction or demolition of the *building*, a person in or adjacent to the *building* will be exposed to an unacceptable risk of injury.

OS1 Fire Safety
An objective of this Code is to limit the probability that, as a result of the design or construction of the *building*, a person in or adjacent to the *building* will be exposed to an unacceptable risk of injury due to fire. The risks of injury due to fire addressed in this Code are those caused by—

- OS1.1 – fire or explosion occurring
- OS1.2 – fire or explosion impacting areas beyond its point of origin
- OS1.3 – collapse of physical elements due to a fire or explosion
- OS1.4 – fire safety systems failing to function as expected
- OS1.5 – persons being delayed in or impeded from moving to a safe place during a fire emergency

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Structure of the NBC 2025 – Functional Statements – Div. A Part 3 (Volume 1)

Section 3.2. Functional Statements

3.2.1. Functional Statements

3.2.1.1. Functional Statements

1) The objectives of this Code are achieved by measures, such as those described in the acceptable solutions in Division B, that are intended to allow the *building* or its elements to perform the following functions (see Note A-3.2.1.1.(1)):

- **F01** To minimize the risk of accidental ignition.
- **F02** To limit the severity and effects of fire or explosions.
- **F03** To retard the effects of fire on areas beyond its point of origin.
- **F04** To retard failure or collapse due to the effects of fire.
- **F05** To retard the effects of fire on emergency egress facilities.
- **F40** To limit the level of contaminants.
- **F41** To minimize the risk of generation of contaminants.
- **F42** To resist the entry of vermin and insects.
- **F43** To minimize the risk of release of hazardous substances.

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Intent Statements (Published separately)

Provision: 9.3.1.6.(2)

Objective
OS3

Attributions
[F80-OS3.1]

Intent(s)

Intent 1. To limit the probability of inadequate resistance to de-icing salts, water absorption or freeze-thaw stresses, which could lead to the spalling or deterioration of concrete at an unacceptable rate, which could lead to uneven surfaces, which could lead to tripping or slipping, which could lead to harm to persons.

Supplement to the NBC 2020: Intent Statements

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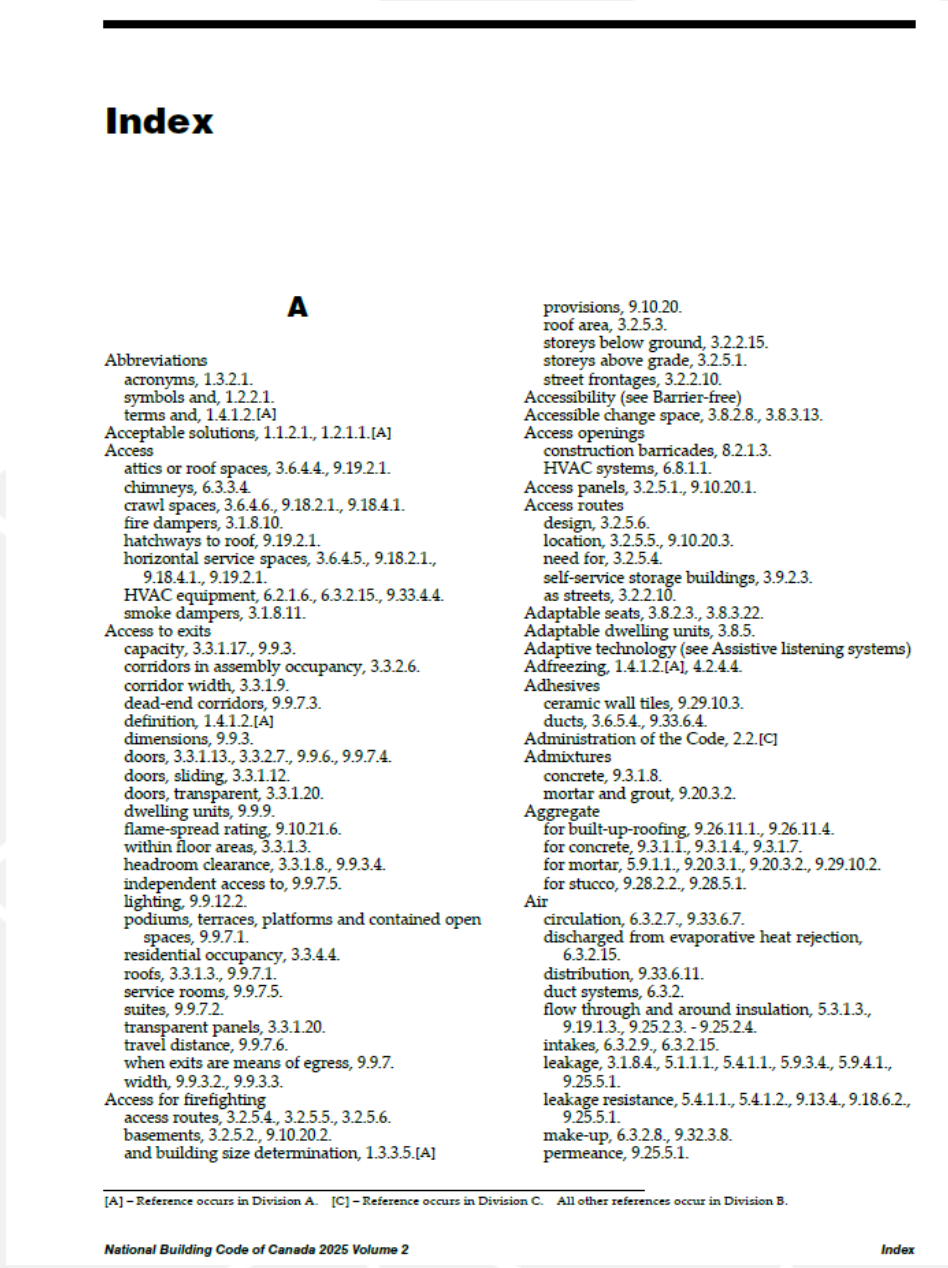
Structure of the NBC 2025 – Index

- Keywords and subcategories
- Alphabetical
- Points to code references*
- Identifies Division referenced

*hyperlinked in electronic copy



Index

A

[A] – Reference occurs in Division A. [C] – Reference occurs in Division C. All other references occur in Division B.

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Prescriptive versus Performance Requirements

Prescriptive Requirements

- Exact methods, materials, dimensions, or construction practices
- What to do and how to do it.
- Clear, straightforward, easy to enforce

Example:

9.8.5.3. Height over Ramps

2) The clear height over ramps serving a single dwelling unit or a house with a secondary suite including their common spaces shall be not less than 1 950 mm.

Prescriptive versus Performance Requirements

Performance-based Requirements

- Specify the outcome or objective that must be achieved, without dictating how to achieve it.
- Flexible, encourages innovation, can adapt to new materials or construction techniques.

Examples

3.4.6.1. Slip Resistance of Ramps and Stairs

1) The surfaces of ramps, landings and treads

a) shall have a finish that is slip resistant, and

b) if accessible to the public, shall have either a colour contrast or a distinctive pattern to demarcate the leading edge of the tread and the leading edge of the landing, as well as the beginning and end of a ramp.

Use of “and” and “or”

Between Clauses and Subclauses of a Sentence

Examples

9.33.6.2. Materials in Air Duct Systems

4) Duct connectors that contain *combustible* materials and that are used between ducts and air outlet units shall

a) conform to the appropriate requirements for Class 1 air duct materials in CAN/ULC-S110, “Standard Methods of Test for Air Ducts,”

b) be limited to 4 m in length,

c) be used only in horizontal runs**, and**

d) not penetrate required *fire separations*.

9.10.15.4. Glazed Openings in Exposing Building Face

1) Except as provided in Sentences (6) and (7), the maximum aggregate area of glazed openings in an exposing building face shall

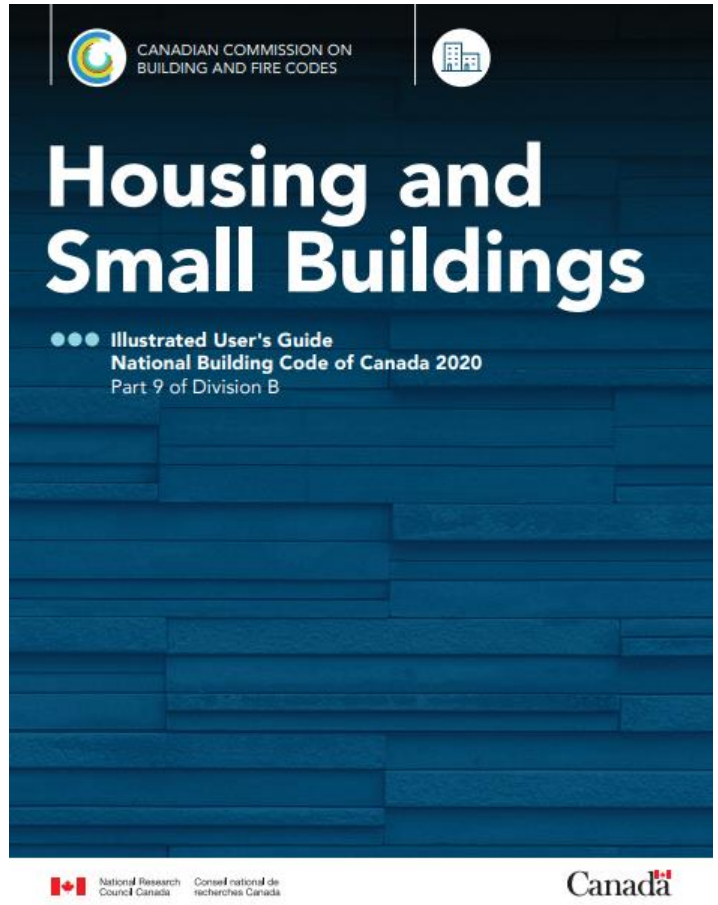
a) conform to Table 9.10.15.4.,

b) conform to Subsection 3.2.3., **or**

c) where the limiting distance is not less than 1.2 m, be equal to or less than the limiting distance squared.

Supplementary Material – Illustrated User's Guide

- To help users understand and apply Part 9 provisions
- Companion to NBC Part 9, not a stand-alone
- Informational, not intended for adoption
- If conflicts exist with the NBC, NBC takes precedence



[Illustrated User's Guide – NBC 2020: Part 9 of Division B, Housing and Small Buildings]

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Opportunities to Get Involved

Request

- Submit a Code Change Request (CCR)
- CBHCC triages CCRs on a continuous basis
- Monitor status on CBHCC's website

Volunteer

- Become a member of a technical committee or task group
- Apply through the CBHCC's website

Observe

- Attend public committee, CBHCC, and Advisory Council meetings
- See calendar on CBHCC's website for schedule & meeting details

Review

- Participate in public reviews (PRs)
- Spring 2026 PR will run from March 23
- Submit comments on proposed changes via CBHCC's website

HTTPS://CBHCC-CCHCC.CA/EN/GET-INVOLVED/

Last Chance to Enter Draw!

Submit your name to enter into a draw to win a copy of the

National Building Code of Canada 2025 – Volume 2 (Part 9)

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Walkthrough Exercise

- Walk through NBC together to find provisions related to
  - Secondary suites
  - Fire protection
  - Accessibility
  - Ventilation and indoor air quality
- Follow along with a physical copy or download the electronic copy to your device:

https://tinyurl.com/NBCC2025

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Thank You!

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Help us with your input!