National Building Code of Canada 2005

Revisions and Errata

Issued by the Canadian Commission on Building and Fire Codes

The tables that follow identify revisions, errata and information updates that apply to the National Building Code of Canada 2005. Certain pages from the Code have been updated for your convenience; they are provided following the tables.

The revisions have been approved by the Canadian Commission on Building and Fire Codes. The following symbol appears following the title of an Article, Appendix Note, Table or Figure containing text that is affected by a revision: ★

The errata are corrections that have been identified; they are provided to facilitate the use of the Code. The following symbol appears following the title of an Article, Appendix Note, Table or Figure containing text that is affected by an erratum: ◊

The information updates have been included for information purposes only; they are not flagged in the Code.

Contact your local authority having jurisdiction to find out if these revisions and errata apply in your province or territory.

The intent and application statements affected by these revisions and errata have been updated, as applicable, on the CD-ROM version of the Code.

Revisions

Table of Revisions — National Building Code 2005

Provision	Revision	Date of Issue
Division B, Volume 1		
Table 1.3.1.2.	The following entry was added after ASTM E 413-87: ASTM, E 2190-02, Insulating Glass Unit Performance and Evaluation, Table 5.10.1.1., 9.7.3.1.(1)	07–12–01
Table 5.10.1.1.	The following standard was added after ASTM D 2178: ASTM, E 2190, Insulating Glass Unit Performance and Evaluation	07–12–01
9.7.3.1.(1)	The following Clause was added after Clause (g): h) ASTM E 2190, "Insulating Glass Unit Performance and Evaluation."	07–12–01
9.31.6.1.	Article 9.31.6.1. was revised as follows: 9.31.6.1. Hot Water Supply 1) Where hot water is required to be supplied in accordance with Article 9.31.4.2., equipment shall a) provide an adequate supply of hot water, and b) be installed in conformance with Part 7.	07–12–01
Table 9.36.1.1.	Entries for 9.7.3.1.(1): 2nd attribution was changed to read "(e),(h)…" Title of Article 9.31.6.1. was revised to read "Hot Water Supply" Functional statement-objective attributions for Sentence 9.31.6.1.(1) were replaced with the following: (a) [F40–OH2.1,OH2.4] [F71–OH2.3]	07–12–01

Errata

Table of Errata — National Building Code 2005

Provision	Erratum	Date of Issue
Division B, Volume 1		
3.1.9.4.(2)	Reference at the end of the Sentence was corrected to read “Clause 3.1.9.1.(1)(a)”	07–12–01
3.2.3.20.(4)(b)	The word “occupancies” was italicized	07–12–01
Table 3.9.1.1.	Entry for 3.8.1.2.(1): 2nd attribution was deleted Entry for 3.8.3.12.(1): 4th attribution was changed as follows: “(b) [F74-OA2] Applies to portion of Code text: “ … b) … a door capable of being locked from the inside …”	07–12–01
4.1.8.11.(7)	The limit shown under the sum symbol (Σ) in the equation was corrected to read i = x	07–12–01
4.1.8.16.(3) and (5)	The word “caissons” was italicized	07–12–01
Table 4.5.1.1.	Entry for 4.2.5.2.(1): The attribution was changed to “[F21-OP4.1]”	07–12–01
Table 5.10.1.1.	The document number for CSA O141 was changed to CAN/CSA-O141	07–12–01
Table 6.2.9.3.	Text under Table title was changed to read “Forming Part of Articles 6.2.7.1. and 6.2.9.3., and Sentence 6.2.8.1.(2)”	07–12–01
Table 6.4.1.1.	Entry for 6.2.3.2.(2): “OH1.3” was deleted from the attribution Entry for 6.2.3.2.(3): 1st attribution: “OH1.2,OH1.3” was deleted Entry for 6.2.3.2.(4): “OH1.3” was deleted from the attribution Entry for 6.2.3.3.(1): 1st attribution: “OH1.3” was deleted Entry for 6.2.3.4.(3): 1st attribution: “OH1.3” was deleted 2nd attribution “[F81-OH1.2]” was deleted Entries for 6.2.3.5.(1): “(b)” was added before the 1st attribution “(c)” was added before the 2nd attribution and “OH1.2,OH1.3” was deleted “(a)” was added before the 3rd attribution Entry for 6.2.3.8.(6): “OH1.2,OH1.3” was deleted from the attribution Entry for 6.2.4.1.(2): The attribution was changed to “(a),(b),(d) [F44-OS3.4] (c) [F81-OS3.4]”	07–12–01
8.1.1.1.(3)	Reference to “Section 5.8.” was changed to “Section 5.6.”	07–12–01
9.8.7.1.(1)(b)	The word “curved” was added before “ramps”	07–12–01
9.8.8.3.(5)	The word “handrail” was changed to “guard”	07–12–01
Table 9.10.8.1.	A horizontal line was added to the Table to separate the first row, which applies to “Residential (Group C),” from the two rows applying to “All other occupancies”	07–12–01
9.10.9.3.(1)	Reference to “Article 9.10.9.5.” was changed to read “Articles 9.10.9.5., 9.10.9.6. and 9.10.9.7.”	07–12–01
9.10.14.4.(1)(c)(ii)	Subclause was corrected to read “half the limiting distance squared…”	07–12–01
Table 9.12.2.2.	Table Note (3) was moved from the 2nd column heading to the last entry in that column, i.e. “1.2 m(3)”, and from the 4th column heading to the last two entries in that column, i.e. “Below the depth of frost penetration(3)” and “1.2 m but not less than the depth of frost penetration(3)”	07–12–01

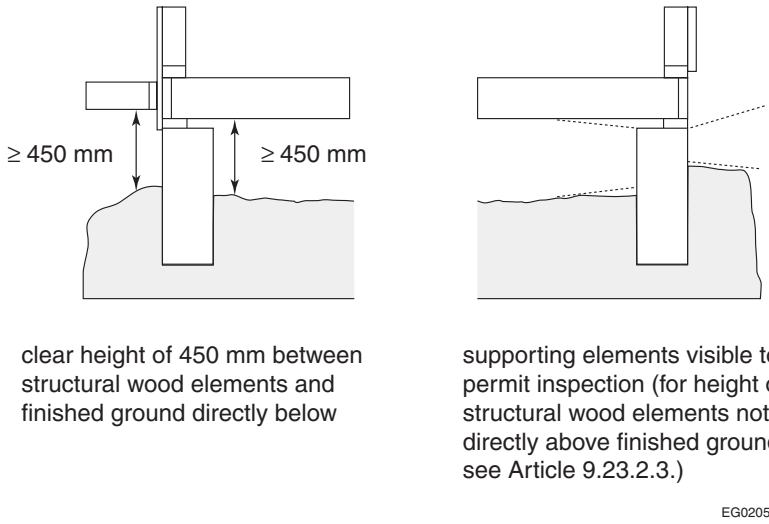
Table of Errata — National Building Code 2005 (Continued)

Provision	Erratum	Date of Issue
9.20.1.2.(1) and (2)	$S_a(2.0)$ was changed to read $S_a(0.2)$	07–12–01
9.20.6.2.(2)	Sentence was changed to read "…shall be not less than 50 mm and not greater than 150 mm."	07–12–01
9.20.7.3.(1)(a)	The words "measured from centre to centre" were deleted	07–12–01
9.25.1.2.(4)(b)	Last part of Clause was changed to read "…does not have the capacity to reduce the average monthly relative humidity to 35% or less over that period."	07–12–01
9.25.4.2.(1)	The following text was added to the beginning of the Sentence: "Except as provided in Sentences (2) and (3), vapour barriers…"	07–12–01
9.26.3.1.(4)(b)	Last part of Clause was changed to read "… by more than pickets or posts."	07–12–01
9.27.3.2.(1)	Standard designation was corrected to read "CAN/CGSB-51.32-M"	07–12–01
9.29.5.9.(5)	Reference to Table A-9.10.3.1.B. was deleted	07–12–01
9.33.6.4.(8)	Italics on "closures" was removed	07–12–01

Table of Errata — National Building Code 2005 (Continued)

Provision	Erratum	Date of Issue
Table 9.36.1.1.	A change bar was added to the entire Table Entries for 9.3.1.3.(1): 3rd attribution: “OH1” was changed to “OH1.1” Entries for 9.3.3.2.(1): 4th attribution: “OH4.1” was changed to “OH4” Entries for 9.7.2.1.(1): 3rd attribution was split into three lines as follows: [F55,F61,F62,F63–OH1.1] [F81–OH1.1] Applies to windows that provide required non-heating-season ventilation. [F54,F55,F61,F62,F63–OH1.2] [F63,F61,F62–OH1.3] Entry for 9.13.2.5.(1): 2nd attribution, 1st line: “OH1” was changed to “OH1.1” Entry for 9.13.3.3.(1): 2nd attribution, 2nd line: “OH1” was changed to “OH1.1” Entry for 9.13.3.4.(1): 2nd attribution, 2nd line: “OH1” was changed to “OH1.1” Entry for 9.13.3.4.(2): 2nd attribution, 2nd line: “OH1” was changed to “OH1.1” Entry for 9.13.3.5.(1): 2nd attribution, 2nd line: “OH1” was changed to “OH1.1” Entry for 9.20.2.4.(1): The following attribution was added on a separate row: “[F80–OS1.2] Applies to masonry used in chimneys and fireplaces.” Entry for 9.20.3.1.(1): 3rd attribution: “OH4” was changed to “OS3.1” Entries for 9.23.10.6.(3): 6th attribution: the second line of that attribution was split into 2 lines before the second “(b)” and the dollar signs were deleted Entry for 9.24.2.4.(4): “F03” was deleted from the attribution Entries for 9.25.2.4.(4): 3rd attribution was split into 2 lines before the second “(c)” and the dollar signs were deleted 7th attribution was split into 2 lines before the second “(c)” and the dollar signs were deleted Entry for 9.27.5.1.(1): 4th attribution: “OH4.1” was changed to “OH4” Entries for 9.27.5.2.(1): 3rd attribution was split into 2 lines before the “@” and the “@” and dollar sign were deleted Entries for 9.29.5.9.(3): Reference to Table 9.10.3.1. in 2nd and 5th attributions was changed to “…Table A-9.10.3.1.A. in Appendix A.” Entries for 9.32.2.2.(4): 1st attribution was deleted as it was a duplicate of the second attribution Entries for 9.32.3.4.(2): “[F51,F81-OH1.2]” was added to 2nd attribution	07–12–01
Division B, Volume 2		
Table A-1.3.1.2.(1)	Document number for “CAN/ULC-S526-02” was corrected to read “ULC-S526-02”	07–12–01
A-3.2.4.19.(1)	Standard designation “CAN/ULC-S526” was corrected to read “ULC-S526”	07–12–01

Table of Errata — National Building Code 2005 (Continued)

Provision	Erratum	Date of Issue
A-6.2.4.1.(2)(c)	"Carbon Monoxide Alarms" was added as the title of the Appendix Note	07–12–01
Figure A-9.3.2.9.(1)-B	This Figure was replaced with the following one:  clear height of 450 mm between structural wood elements and finished ground directly below supporting elements visible to permit inspection (for height of structural wood elements not directly above finished ground, see Article 9.23.2.3.) EG02050B	07–12–01
Appendix C, Table C-2	Entry for Yukon, Whitehorse under column heading Seismic Data: value of $S_a(1.0)$ was changed to 0.10	07–12–01
Division C, Volume 1		
2.2.4.6.(1)(b)	The terms "allowable bearing pressures" and "allowable loads" were changed to "factored bearing pressures" and "factored loads" respectively	07–12–01

Information Updates

Updated Information — National Building Code 2005

Provision	Information Update	Date of Issue
Preface, Volume 1		
Relationship of the NBC to Standards Development and Conformity Assessment	In the third paragraph under the heading Certification, "American Plywood Association (APA)" was changed to "APA Engineered Wood Association"	07–12–01
Division B, Volume 1		
1.3.2.1.(1)	Under the entry for TPIC, the contact person's name was corrected to read "Attn: Kenneth Koo"	07–12–01
Division B, Volume 2		
Table A-9.3.2.1.(1)B.	This Table has been updated in the pages provided following these Information Updates.	07–12–01
Appendix C, Table C-2	Under entries for New Brunswick, Chatham was changed to Miramichi	07–12–01

Table 1.3.1.2.
Documents Referenced in the National Building Code of Canada 2005 ★
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ANSI	A208.1-1999	Particleboard, Mat-Formed Wood	Table 5.10.1.1. 9.23.14.2.(3) 9.29.9.1.(1) 9.30.2.2.(1)
ANSI/ ASME	B18.6.1-1981	Wood Screws (Inch Series)	Table 5.10.1.1. 9.23.3.1.(2)
ANSI/ ASHRAE	62-2001	Ventilation for Acceptable Indoor Air Quality	6.2.2.1.(2)
ASTM	A 123/A 123M-02	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products	Table 5.10.1.1. Table 9.20.16.1.
ASTM	A 153/A 153M-03	Zinc Coating (Hot-Dip) on Iron and Steel Hardware	Table 5.10.1.1. Table 9.20.16.1.
ASTM	A 252-98	Welded and Seamless Steel Pipe Piles	4.2.3.8.(1)
ASTM	A 283/A 283M-03	Low and Intermediate Tensile Strength Carbon Steel Plates	4.2.3.8.(1)
ASTM	A 653/A 653M-03	Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process	Table 5.10.1.1. 9.3.3.2.(1)
ASTM	A 792/A 792M-03	Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process	9.3.3.2.(1)
ASTM	A 1008/A 1008M-04	Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability	4.2.3.8.(1)
ASTM	A 1011/A 1011M-03a	Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability	4.2.3.8.(1)
ASTM	C 4-03	Clay Drain Tile and Perforated Clay Drain Tile	Table 5.10.1.1. 9.14.3.1.(1)
ASTM	C 27-98	Classification of Fireclay and High-Alumina Refractory Brick	9.21.3.4.(1)
ASTM	C 36/C 36M-03	Gypsum Wallboard	3.1.5.12.(4) Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 37/C 37M-01	Gypsum Lath	Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 79/C 79M-04	Treated Core and Nontreated Core Gypsum Sheathing Board	Table 5.10.1.1. Table 9.23.16.2.A.
ASTM	C 126-99	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	Table 5.10.1.1. 9.20.2.1.(1)
ASTM	C 212-00	Structural Clay Facing Tile	Table 5.10.1.1. 9.20.2.1.(1)
ASTM	C 260-01	Air-Entraining Admixtures for Concrete	9.3.1.8.(1)
ASTM	C 411-97	Hot-Surface Performance of High-Temperature Thermal Insulation	3.6.5.4.(4) 3.6.5.5.(1) 9.33.6.4.(4) 9.33.8.2.(2)
ASTM	C 412M-03	Concrete Drain Tile (Metric)	Table 5.10.1.1. 9.14.3.1.(1)
ASTM	C 442/C 442M-04	Gypsum Backing Board, Gypsum Coreboard, and Gypsum Shaftliner Board	3.1.5.12.(4) Table 5.10.1.1. 9.29.5.2.(1)

Table 1.3.1.2. (Continued)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	C 444M-03	Perforated Concrete Pipe (Metric)	Table 5.10.1.1. 9.14.3.1.(1)
ASTM	C 494/C 494M-04	Chemical Admixtures for Concrete	9.3.1.8.(1)
ASTM	C 588/C 588M-03	Gypsum Base for Veneer Plasters	3.1.5.12.(4) Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 630/C 630M-03	Water-Resistant Gypsum Backing Board	3.1.5.12.(4) Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 700-02	Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated	Table 5.10.1.1. 9.14.3.1.(1)
ASTM	C 931/C 931M-04	Exterior Gypsum Soffit Board	3.1.5.12.(4) Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 960/C 960M-04	Predecorated Gypsum Board	3.1.5.12.(4) Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 1002-01	Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs	Table 5.10.1.1. 9.24.1.4.(1) 9.29.5.7.(1)
ASTM	C 1177/C 1177M-04e1	Glass Mat Gypsum Substrate for Use as Sheathing	Table 5.10.1.1. Table 9.23.16.2.A.
ASTM	C 1178/C 1178M-04	Glass Mat Water-Resistant Gypsum Backing Panel	Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 1395/C 1395M-04	Gypsum Ceiling Board	Table 5.10.1.1. 9.29.5.2.(1)
ASTM	C 1396/C 1396M-03a	Gypsum Board	Table 5.10.1.1. 9.29.5.2.(1)
ASTM	D 323-99a	Vapor Pressure of Petroleum Products (Reid Method)	1.4.1.2.(1)[1]
ASTM	D 2178-97a	Asphalt Glass Felt Used in Roofing and Waterproofing	Table 5.10.1.1.
ASTM	D 2898-94	Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing	3.1.5.5.(4) 3.1.5.21.(1)
ASTM	E 90-04	Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements	5.9.1.1.(1) 9.11.1.1.(1)
ASTM	E 96-00e1	Water Vapor Transmission of Materials	5.5.1.2.(3) 9.25.1.2.(1) 9.25.4.2.(1) 9.30.1.2.(1)
ASTM	E 336-97e1	Measurement of Airborne Sound Insulation in Buildings	5.9.1.1.(1) 9.11.1.1.(1)
ASTM	E 413-87	Classification for Rating Sound Insulation	5.9.1.1.(1) 9.11.1.1.(1)
ASTM	E 2190-02	Insulating Glass Unit Performance and Evaluation	Table 5.10.1.1. 9.7.3.1.(1)
ASTM	F 476-84	Security of Swinging Door Assemblies	9.6.8.10.(1)
AWPA	M4-02	Care of Preservative-Treated Wood Products	4.2.3.2.(2) Table 5.10.1.1.
BNQ	NQ 3624-115-2000	Polyethylene (PE) Pipe and Fittings – Flexible Corrugated Pipes for Drainage – Characteristics and Test Methods	Table 5.10.1.1. 9.14.3.1.(1)

9.7.2. Window Standards

9.7.2.1. Window Standards

1) Except as provided in Sentence (2), windows shall conform to
a) CAN/CSA-A440, "Windows," and
b) CAN/CSA-A440.1, "User Selection Guide to CSA Standard CAN/CSA-A440-00, Windows."
(See Appendix A and Article 9.7.6.1.)

2) Windows need not comply with Clause 10.15 of CAN/CSA-A440, "Windows," Energy Rating for Heating Conditions of Residential Windows.

9.7.3. Glass

9.7.3.1. Glass Standards ★

1) Glass shall conform to
a) CAN/CGSB-12.1-M, "Tempered or Laminated Safety Glass,"
b) CAN/CGSB-12.2-M, "Flat, Clear Sheet Glass,"
c) CAN/CGSB-12.3-M, "Flat, Clear Float Glass,"
d) CAN/CGSB-12.4-M, "Heat Absorbing Glass,"
e) CAN/CGSB-12.8, "Insulating Glass Units,"
f) CAN/CGSB-12.10-M, "Glass, Light and Heat Reflecting,"
g) CAN/CGSB-12.11-M, "Wired Safety Glass," or
h) ASTM E 2190, "Insulating Glass Unit Performance and Evaluation."

9.7.3.2. Structural Design of Glass

1) Glass in windows, sloped glazing and skylights shall be designed in conformance with CAN/CGSB-12.20-M, "Structural Design of Glass for Buildings." (See Appendix A.)

9.7.4. Caulking and Glazing

9.7.4.1. Sealing Compound

1) The sealing compound used to seal the glass component of a factory-sealed double-glazed unit to the sash component shall be compatible with the sealing compound used to edge seal the glass component.

9.7.4.2. Caulking Compound

1) Caulking shall be provided between window frames or trim and the exterior siding or masonry in conformance with Subsection 9.27.4.

9.7.5. Protection of Windows in Public Areas

9.7.5.1. Transparent Panels

1) Except as provided in Article 9.7.5.2., transparent panels that could be mistaken as a *means of egress* shall be protected by barriers or railings.

9.7.5.2. Sliding Glass Partitions

1) Sliding glass *partitions* that separate a *public corridor* from an adjacent *occupancy* and that are open during normal working hours need not conform to Article 9.7.5.1. and Sentence 9.6.6.2.(3), except that such *partitions* shall be suitably marked to indicate their existence and position.

9.7.5.3. Windows over Stairs, Ramps and Landings

1) Except as provided in Sentence (2), windows over *stairs*, ramps and landings that extend to less than 1 070 mm above the surface of the treads, ramp or landing shall be

a) protected by *guards*, in accordance with Subsection 9.8.8., or
b) non-openable and designed to withstand the specified lateral loads for balcony *guards* as provided in Article 4.1.5.15.

2) In *dwelling units*, windows over *stairs*, ramps and landings that extend to less than 900 mm above the surface of the treads, ramp or landing shall be

a) protected by *guards*, in accordance with Subsection 9.8.8., or
b) non-openable and designed to withstand the specified lateral loads for balcony *guards* as provided in Article 4.1.5.15.

9.7.5.4. Windows above the Second Storey

1) Windows in public areas that extend to less than 1 m from the floor and are located above the second *storey* in *buildings* of *residential occupancy* shall be

a) protected by *guards* in accordance with Subsection 9.8.8., or
b) non-openable and designed to withstand the specified lateral loads for balcony *guards* as provided in Article 4.1.5.15.

9.7.6. Resistance to Forced Entry

9.7.6.1. Forced Entry through Windows

1) In *dwelling units*, windows, any part of which is located within 2 m of adjacent ground level, shall conform to the requirements for resistance to forced entry as described in Clause 10.13 of CAN/CSA-A440, "Windows." (See Appendix A.)

9.7.7. Skylights

9.7.7.1. Plastic Skylights

1) Plastic skylights shall conform to CAN/CGSB-63.14-M, "Plastic Skylights."

9.7.7.2. Glass Skylights

1) Factory-built glass skylights shall meet the performance requirements of CAN/CGSB-63.14-M, "Plastic Skylights."

Section 9.8. Stairs, Ramps, Handrails and Guards

9.8.1. Application

9.8.1.1. General

1) This Section applies to the design and construction of interior and exterior stairs, steps, ramps, handrails and *guards*.

9.8.1.2. Exit Stairs, Ramps and Landings

1) Where a stair, ramp or landing forms part of an *exit*, the appropriate requirements in Sections 9.9. and 9.10. shall also apply.

9.8.1.3. Escalators and Moving Walkways

1) Escalators and moving *walkways* shall conform to the appropriate requirements in Part 3.

2) Where a public sewage system is not available, the *building* sewer shall discharge into a *private sewage disposal system*.

9.31.6. Service Water Heating Facilities

9.31.6.1. Hot Water Supply ★

1) Where hot water is required to be supplied in accordance with Article 9.31.4.2., equipment shall

a) provide an adequate supply of hot water, and
b) be installed in conformance with Part 7.

9.31.6.2. Equipment and Installation

1) *Service water heaters* shall conform to appropriate provincial or territorial requirements or, in the absence of such requirements, to the National Plumbing Code of Canada 2005.

2) The installation of *service water heaters*, including provisions for mounting, clearances and air supply, shall conform to appropriate provincial or territorial requirements or, in the absence of such requirements, to

a) CSA B51, "Boiler, Pressure Vessel, and Pressure Piping Code,"
b) CAN/CSA-B139, "Installation Code for Oil-Burning Equipment,"
c) CAN/CSA-B149.1, "Natural Gas and Propane Installation Code,"
d) CAN/CSA-B365, "Installation Code for Solid-Fuel-Burning Appliances and Equipment," or
e) CSA C22.1, "Canadian Electrical Code, Part I."

3) Where the *building* is in a location where the spectral response acceleration, $S_a(0.2)$, is greater than 0.55, *service water heaters* shall be secured to the structure to prevent overturning. (See Appendix A.)

9.31.6.3. Corrosion-Resistant Coating

1) Where storage tanks for *service water heaters* are of steel, they shall be coated with zinc, vitreous enamel (glass lined), hydraulic cement or other corrosion-resistant material.

9.31.6.4. Fuel-Burning Heaters

1) Fuel-burning *service water heaters* shall be connected to a *chimney flue* conforming to Section 9.21.

9.31.6.5. Heating Coils

1) Heating coils of *service water heaters* shall not be installed in a *flue* or in the combustion chamber of a *boiler* or *furnace* heating a *building*.

Section 9.32. Ventilation

9.32.1. General

9.32.1.1. Application

1) This Section applies to the ventilation of rooms and spaces in *residential occupancies*.

2) Ventilation of all other *occupancies* shall comply with Part 6.

3) A *storage garage* for up to 4 motor vehicles that serves a *residential occupancy* may be considered to be part of that *occupancy*.

9.32.1.2. Required Ventilation

1) Every *residential occupancy* shall incorporate
a) provisions for non-heating-season ventilation in accordance with Subsection 9.32.2., and
b) except as required by Sentence (2), if supplied with electrical power and a heating system, provisions for heating-season ventilation in accordance with Part 6.

2) A self-contained heating-season ventilation system serving a single *dwelling unit* shall comply with Subsection 9.32.3.

9.32.2. Non-Heating-Season Ventilation

9.32.2.1. Required Ventilation

1) The non-heating-season ventilation required by Clause 9.32.1.2.(1)(a) shall be supplied by
a) natural ventilation in accordance with Article 9.32.2.2., or
b) a mechanical ventilation system in accordance with Article 9.32.2.3.

9.32.2.2. Non-Heating-Season Natural Ventilation

1) The unobstructed openable ventilation area to the outdoors for rooms and spaces in residential *buildings* ventilated by natural means shall conform to Table 9.32.2.2.

Table 9.32.2.2.
Natural Ventilation Area
Forming Part of Sentence 9.32.2.2.(1)

Location		Minimum Unobstructed Area
Within a *dwelling unit*	Bathrooms or water-closet rooms	0.09 m^2
	Unfinished *basement* space	0.2% of the *floor area*
	Dining rooms, living rooms, bedrooms, kitchens, combined rooms, dens, recreation rooms and all other finished rooms	0.28 m^2 per room or combination of rooms
Other than within a *dwelling unit*	Bathrooms or water-closet rooms	0.09 m^2 per water closet
	Sleeping areas	0.14 m^2 per occupant
	Laundry rooms, kitchens, recreation rooms	4% of the *floor area*
	Corridors, storage rooms and other similar public rooms or spaces	2% of the *floor area*
	Unfinished *basement* space not used on a shared basis	0.2% of the *floor area*

2) Where a vestibule opens directly off a living or dining room within a *dwelling unit*, ventilation to the outdoors for such rooms may be through the vestibule.

3) Openings for natural ventilation other than windows shall provide protection from the weather and insects.

4) Screening shall be of corrosion-resistant material.

Table A-9.3.2.1.(1)B.
Facsimiles of Grade Marks Used by Canadian Lumber Manufacturing Associations and Agencies Authorized to Grade Mark Lumber in Canada

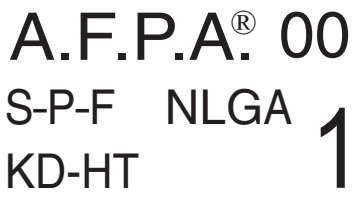
Facsimiles of Grade Mark	Association or Agency
 GG00056B	Alberta Forest Products Association 500–10709 Jasper Avenue Edmonton, Alberta T5J 3N3
 GG00059B	Canadian Lumbermen's Association 30 Concourse Gate Suite 200 Ottawa, Ontario K2E 7V7
 GG00062B	Canadian Mill Services Association #200, 601–6th Street New Westminster, British Columbia V2G 1Z5
 GG00098A	Canadian Softwood Inspection Agency Inc. 1047–250A Street Aldergrove, British Columbia V4W 2S8
 GG00058B	Central Forest Products Association Inc. PO Box 1169 Hudson Bay, Saskatchewan S0E 0Y0

Table A-9.3.2.1.(1)B. (Continued)

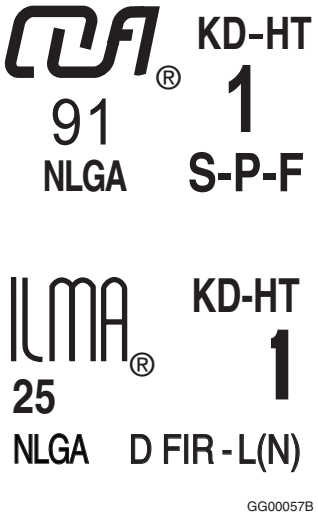
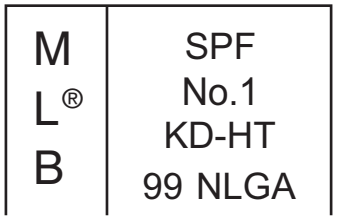
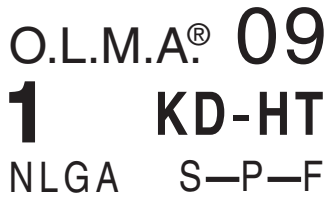
Facsimiles of Grade Mark	Association or Agency
 GG00057B	Council of Forest Industries 360–1855 Kirschner Road Kelowna, British Columbia V1Y 4N7
 GG00064B	MacDonald Inspection Services Ltd. 842 Eland Drive Campbell River, British Columbia V9W 6Y8
 GG00065B	Maritime Lumber Bureau PO Box 459 Amherst, Nova Scotia B4H 4A1
 GG00066B	Newfoundland & Labrador Lumber Producers Association PO Box 8 Glovertown, Newfoundland A0G 2L0
 10 CONST S-P-F S-GRN NLGA GG00067B	N.W.T. Forest Industries Association PO Box 220 Fort Smith, Northwest Territories X0E 0P0

Table A-9.3.2.1.(1)B. (Continued)

Facsimiles of Grade Mark	Association or Agency
	Ontario Lumber Manufacturers' Association 210–65 Queen Street West Toronto, Ontario M5H 2M5
	Pacific Lumber Inspection Bureau 33442 First Way South Suite 300 Federal Way, Washington 98003 USA British Columbia Division: PO Box 19118 Fourth Avenue Postal Outlet Vancouver, British Columbia V6K 4R8
	Quebec Forest Industry Council (Conseil de l'industrie forestière du Québec) 1175, avenue Lavigerie Bureau 200 Sainte-Foy (Québec) G1V 4P1

A-Table 9.3.2.1. Lumber Grading. To identify board grades, the paragraph number of the NLGA rules under which the lumber is graded must be shown in the grade mark. Paragraph 113 is equivalent to WWPA rules and paragraph 114 is equivalent to WCLIB rules. When graded in accordance with WWPA or WCLIB rules, the grade mark will not contain a paragraph number.

A-9.3.2.8.(1) Non-Standard Lumber. The NLGA "Standard Grading Rules for Canadian Lumber (Interpretation Included)" permit lumber to be dressed to sizes below the standard sizes (38 × 89, 38 × 140, 38 × 184, etc.) provided the grade stamp shows the reduced size. This Sentence permits the use of the span tables for such lumber, provided the size indicated on the stamp is not less than 95% of the corresponding standard size. Allowable spans in the tables must be reduced a full 5% even if the undersize is less than the 5% permitted.

A-9.3.2.9.(1) Protection from Termites.

Figure A-9.3.2.9.(1)-A
Known termite locations

Note to Figure A-9.3.2.9.(1)-A:
(1) Reference: J.K. Mauldin (1982), N.Y. Su (1995), T. Myles (1997).

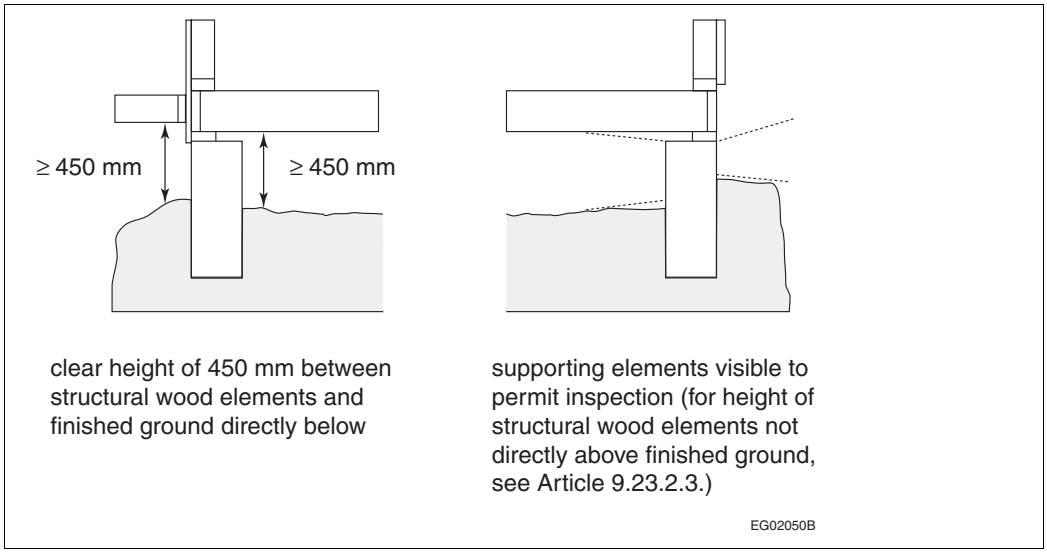


Figure A-9.3.2.9.(1)-B
Clearances under structural wood elements and visibility of supporting elements where required to permit inspection for termite infestation ◊

A-9.3.2.9.(3) Protection of Structural Wood Elements from Moisture and Decay. There are many above-ground, structural wood systems where precipitation is readily trapped or drying is slow, creating conditions conducive to decay. Beams extending beyond roof decks, junctions between deck members, and connections between balcony guards and walls are three examples.

A-9.3.2.9.(4) Protection of Retaining Walls and Cribbing from Decay. Retaining walls supporting soil are considered to be structural elements of the building if a line drawn from the outer edge of the footing to the bottom of the exposed face of the retaining wall is greater than 45° to the horizontal. Retaining walls supporting soil may be structural elements of the building if the line described above has a lower slope.

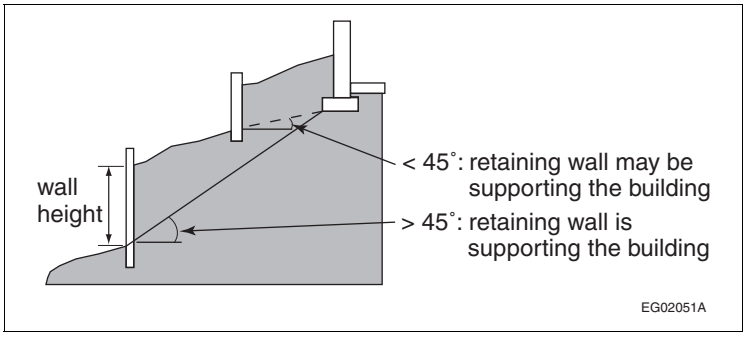


Figure A-9.3.2.9.(4)
Identifying retaining walls that require preservative treatment

Retaining walls that are not critical to the support of building foundations but are greater than 1.2 m in height may pose a danger of sudden collapse to persons adjacent to the wall if the wood is not adequately protected from decay. The height of the retaining wall or cribbing is measured as the vertical difference between the ground levels on each side of the wall.

A-9.4.1.1. Structural Design. Article 9.4.1.1. establishes the principle that the structural members of Part 9 buildings must

- comply with the prescriptive requirements provided in Part 9,
- be designed in accordance with accepted good practice, or

- be designed in accordance with Part 4 using the loads and limits on deflection and vibration specified in Part 9 or Part 4.

Usually a combination of approaches is used. For example, even if the snow load calculation on a wood roof truss is based on Subsections 9.4.2., the joints must be designed in accordance with Part 4. Wall framing may comply with the prescriptive requirements in Subsections 9.23.3., 9.23.10., 9.23.11. and 9.23.12., while the floor framing may be engineered.

Design according to Part 4 or accepted good engineering practice, such as that described in the "Engineering Guide for Wood Frame Construction" (CWC Guide), published by the Canadian Wood Council, requires engineering expertise. The CWC Guide contains alternative solutions and provides information on the applicability of the Part 9 prescriptive structural requirements to further assist designers and building officials to identify the appropriate design approach. The need for professional involvement in the structural design of a building, whether to Part 4 or Part 9 requirements or accepted good practice, is defined by provincial and territorial legislation.

A-9.4.1.1.(3) Structural Design for Lateral Wind and Earthquake Loads. The only explicit treatment of structural loads in Section 9.4. is for gravity; wind and earthquake loads are dealt with implicitly in Part 9. There is, therefore, a tendency to assume that wind and earthquake loads do not need any particular consideration in the design of Part 9 buildings.

In most cases this is true: the majority of low-rise, wood-frame buildings have a great deal of structural redundancy and continuity and have more than enough capacity to resist lateral loads due to wind and earthquake. For example, in a traditional house configuration, even if there are a few large openings in the exterior walls for windows and sliding doors, the many interior partitions act as braced or sheathed wall panels and provide adequate lateral stability.

However, not all Part 9 buildings have configurations or details that will provide adequate resistance to lateral loads. For example, newer houses may have few interior partitions and very large openings in the exterior walls. Mercantile buildings might be long and narrow with almost entirely windowed walls on the ends and few structurally attached interior partitions. In such cases, wind and earthquake loads do have to be taken into consideration.

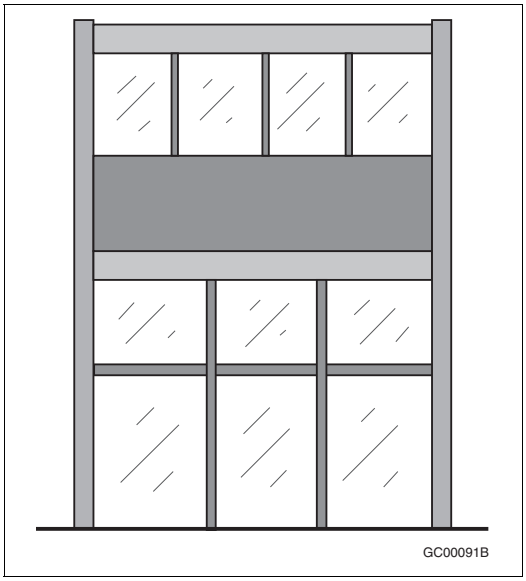


Figure A-9.4.1.1.(3)-A
Mercantile building with little resistance to lateral loading

Many buildings have been constructed, and some still are, with the lowest level exterior walls as short, wood-frame knee- or pony-walls. In the past, these were often constructed with no lateral bracing and with no interior partitions. See Figure A-9.4.1.1.(3)-B. These walls must be braced or sheathed to resist lateral loads from earthquakes. In higher load regions, they should be sheathed. In all regions, storeys with knee-walls should be considered as storeys for the purpose of determining building height and the application of the Part 9 structural requirements.