2024 Building Code Compendium – November 4, 2024 Update (Containing O. Reg. 447/24)

Volume 1/ File Number / File Name	Replacement Page Numbers	Page Count
Vol. 1 / 001 / Cover Letter	1 / blank	2
Vol. 1 / 002 / Title Page	1/2	2
Vol. 1 / 003 / Table of Contents	1/2	2
Vol. 1 / 004 / Preface	(xvii/xviii; xix/xx)	4
Vol. 1 / 005 / BCA		
Vol. 1 / 006 / Div A / Part 1	3/4; 21/22	4
Vol. 1 / 007 / Div A / Part 2		
Vol. 1 / 008 / Div A / Part 3		
Vol. 1 / 009 / Div B / Part 1	9/10; 11/12; 15/16; 17/18; 21/22; 23/24; 25/26; 27/28	16
Vol.1 / 010 / Div. B / Part 2	9/10; 11/12	4
Vol. 1 / 011/ Div B / Part 3	1/2; 3/4; 5/6; 21/22; 23/24; 24a/24b; 25/26; 27/28; 41/42; 47/48; 51/52; 53/54; 55/56; 57/58; 58a/58b; 63/64; 65/66; 71/72; 75/76; 79/80; 81/82; 85/86; 86a/86b; 93/94; 105/106; 113/114; 115/116; 131/132; 145/146; 203/204; 221/222; 239/240; 257/258	66
Vol. 1 / 012 / Div. B / Part 4	75/76; 95/96	4
Vol. 1 / 013 / Div. B / Part 5		
Vol. 1 / 014 / Div. B / Part 6	5/6; 11/12	4
Vol. 1 / 015 / Div. B / Part 7	3/4; 11/12; 21/22; 69/70	8
Vol. 1 / 016 / Div. B / Part 8	3 to 32	30
Vol. 1 / 017 / Div. B / Part 9	5/6; 67/68; 69/70; 71/72; 93/94; 103/104; 145/146; 157/158; 189/190; 193/194; 229/230; 257/258	24
Vol. 1 / 018 / Div. B / Part 10	3/4	2
Vol. 1 / 019 / Div. B / Part 11	3/4; 45/46; 49/50; 51/52; 53/54	10
Vol. 1 / 020 / Div. B / Part 12		
Vol. 1 / 021 / Div. C / Part 1	1/2; 21/22, 22a/22b; 25/26	8
Vol. 1 / 022 / Div. C / Part 2		
Vol. 1 / 023 / Div. C / Part 3	29/30	2
Vol. 1 / 024 / Index	1-64	64
	Total for Volume 1	256

2024 Building Code Compendium – November 4, 2024 Update (Containing O. Reg. 447/24)

Vol. 2 / 001/ Title Page	1/2	2
Vol. 2 / 002 / Table of Contents	1/2	2
Vol. 2 / 003 / Appendix A	5/6; 7/8; 9/10; 29/30; 31/32; 33/34; 35/36; 173/174; 249/250	18
Vol. 2 / 004 / Appendix B		
Vol. 2 / 005 / SA-1	7/8; 11/12; 19/20; 77/78	8
Vol. 2 / 006 / SB-1		
Vol. 2 / 007 / SB-2		
Vol. 2 / 008 / SB-3		
Vol. 2 / 009 / SB-4		
Vol. 2 / 010 / SB-5		
Vol. 2 / 011 / SB-6		
Vol. 2 / 012 / SB-7	1/2; 43/44	4
Vol. 2 / 013 / SB-8		
Vol. 2 / 014 / SB-9		
Vol. 2 / 015 / SB-10		
Vol. 2 / 016 / SB-11		
Vol. 2 / 017 / SB-12		
Vol. 2 / 018 / SB-13		
Vol. 2 / 019 / SC-1		
Vol. 2 / 020 / Form 1		
Vol. 2 / 021 / Form 2		
Vol. 2 / 022 / Form 3		
Vol. 2 / 023 / Form 4		
Vol. 2 / 024 / Form 5		
Vol. 2 / 025 / Form 6		
Vol. 2 / 026 / Form 7		
	Total for Volume 2	34
	Total for Both Volumes (254 + 36)	290

Ministry of Municipal Affairs and Housing

Building and Development Branch
777 Bay Street, 12th Floor
Toronto ON M7A 2J3
Telephone: 416 585-6666
www.ontario.ca/buildingcode

Ministère des Affaires municipales et du Logement

Direction du bâtiment et de l'aménagement
777, rue Bay, 16e étage
Toronto ON M7A 2J3
Téléphone : 416 585-6666
www.ontario.ca/buildingcode

Ontario

November 4, 2024

TO: BUILDING CODE USERS

Enclosed please find the 2024 Building Code Compendium Edition[1] (O. Reg. 163/24) effective January 1, 2025. The Building Code is a regulation made under the *Building Code Act, 1992*.

This edition contains recent changes to the Building Code. In particular, the 2024 Building Code Compendium is further amended by:

- O. Reg. 447/24 (Ontario Amendments to the National Building Code of Canada 2020, October 8, 2024)
  - new technical provisions in Part 3 of Division B that allow for buildings up to 18 storeys high made of Encapsulated Mass Timber Construction (EMTC)
  - revisions to referenced standards in Table 1.3.1.2. of Division B related to
    - EMTC provisions
    - CSA B52, "Mechanical Refrigeration Code" updated to 2023 edition
    - CAN/CSA-F383, "Installation of packaged solar domestic hot water systems" substituted in Sentence 7.6.2.8.(1) of Division B
    - CSA Z271, "Design of suspended access equipment" substituted in Sentence 4.4.5.1.(2) of Division B

- Revisions to Supplementary Standards and Appendix A
  - SA-1 changes corresponding to EMTC provisions
  - Appendix A changes corresponding to EMTC provisions and other housekeeping items

Changes to the Code are identified on the amendment pages by a unique symbol and a corresponding effective date. These pages should be inserted in your Code for January 1, 2025.

ServiceOntario Publications is the official publisher and vendor of the 2024 Building Code Compendium. You may contact ServiceOntario Publications by phone at 416-326-5300, 1-800-668-9938 (toll-free) or www.serviceontario.ca/publications. A digital version of the Ministry's official 2024 Building Code Compendium is also available. For further information, please visit the Building Code website at www.ontario.ca/buildingcode.

Mansoor Mahmood, Ph.D., P.Eng.
Director

[1] The Compendium is not an official copy of the Act and Code. Official copies of the legislation can be accessed from www.ontario.ca/laws.

2024 Building Code Compendium

Volume 1

November 4, 2024 Update
(Containing O. Reg. 447/24)

Issued November 4, 2024

COMMENCEMENT

Ontario Regulation 163/24 and 203/24 come into force on the 1st day of January 2025.

r1 Amending Ontario Regulation 447/24 comes into force on the 1st day of January 2025.

EDITORIAL

e1 Editorial correction issued for January 1st, 2025.

ISBN 978-1-4868-8446-9 Print – Set

Tel: 416-585-6666
E-Mail: Codeinfo@ontario.ca

Table of Contents

Volume 1

Volume 2

2024 CODE CHANGE REQUEST FOR ONTARIO-ONLY PROVISIONS	
Have you submitted this change to the Canadian Commission on Building and Fire Codes as a proposed amendment to the National Building or Plumbing Codes?	☐ YES ☐ NO
Do you consent to share all information on this form with Building Code Review Committees and the Canadian Commission on Building and Fire Codes for the purposes of code development?	
I agree:	☐ YES ☐ NO
Will your proposal increase/decrease harmonization with the National Construction Codes?	☐ Increase ☐ Decrease ☐ I do not know Same proposal submitted for NBCC
Is your code change request:	☐ Changing an existing Building Code provision, appendix note, supplementary standard ☐ Adding a new Building Code provision, appendix note, supplementary standard
Enter Code Reference of the Requested Change: Division, Part, Section, Subsection, Article, Sentence (Example: Div. B, 3.17.1.1.(2))	
REQUESTED CHANGE/ADDITION: **What is your proposed wording for the change/addition? (Write existing code provision and show changes. Strikethrough for deletion and underlining for new text. Example: "…~~indoor~~ <u>all</u> pools")**	
ISSUE/GENERAL BACKGROUND: **Why should the existing provision be revised? If requesting an addition to the Building Code, why is it needed?**	
JUSTIFICATION/EXPLANATION: **How does the requested change address the issue?**	

2024 CODE CHANGE REQUEST FOR <u>ONTARIO-ONLY</u> PROVISIONS	
OBJECTIVE(S): **Which of the Building Code's objectives does the requested change address? (See Part 2 of Division A of the Building Code for the list of objectives.)**	
COST(S): **Will the change bring any added construction costs, including labour, and any other costs? (Please provide detailed information to support your proposal)**	
BENEFIT(S): **Will it provide benefits and/or savings? (Please provide detailed information to support your proposal)**	
ENFORCEMENT: **Are there any enforcement issues regarding this change/addition? Will its enforcement require an increase in resources?**	
ADDITIONAL CONSIDERATIONS: **Who will the change impact? How will the requested change/addition impact code users? (Example: building officials, home owners, designers, builders/contractors, engineers, architects, manufacturers, building/business owners, general public.)**	
OTHER COMMENTS: **For example, identify other Building Code requirements and other Regulations/Standards that might be impacted by the requested change/addition.**	
ATTACH SUPPORTING MATERIAL: **(Example: research, test results, statistics, case studies that supports the issues, justification, costs, benefits and other information referred above.)**	
Submission Date	

Building Code History

The first Ontario Building Code was issued in 1975. The 1975 and subsequent editions of the Building Code have been issued as follows:

Building Code Edition	Date Filed	Effective Date
O. Reg. 925/75 (1975 Building Code)	November 24, 1975	December 31, 1975
O. Reg. 583/83 (1983 Building Code)	September 15, 1983	November 30, 1983
O. Reg. 419/86 (1986 Building Code)	July 18, 1986	October 20, 1986
O. Reg. 413/90 (1990 Building Code)	July 30, 1990	October 1, 1990
O. Reg. 403/97 (1997 Building Code)	November 3, 1997	April 6, 1998
O. Reg. 350/06 (2006 Building Code)	June 28, 2006	December 31, 2006
O. Reg. 332/12 (2012 Building Code)	November 2, 2012	January 1, 2014
O. Reg. 163/24 (2024 Building Code)	April 10, 2024	January 1, 2025

The following Table lists the amendments to the 2024 Building Code made since the filing of O. Reg. 163/24.

Regulatory Amendments to the 2024 Building Code – Ontario Regulation 163/24			
Amendment	Date Filed	Effective Date	Nature of Amendment
O. Reg. 203/24	May 29, 2024	January 1, 2025	Housekeeping changes
O. Reg. 447/24	November 4, 2024	January 1, 2025	18 storey encapsulated mass timber construction, housekeeping changes

Part 1
Compliance

Section 1.1 General

1.1.1. Application of this Code

1.1.1.1. Application of this Code

e1 **(1)** This Code applies to the *construction*, *demolition*, change of use and *occupancy* of *buildings*.

(2) This Code applies to both site-built and factory-constructed *buildings*. (See Note A-1.1.1.1.(2))

Section 1.2. Compliance

1.2.1. Compliance with this Code

1.2.1.1. Compliance with this Code

(1) Compliance with this Code shall be achieved by
(a) complying with the applicable *acceptable solutions* in Division B (See Note A-1.2.1.1.(1)(a)), or
(b) using *alternative solutions* that will achieve at least the minimum level of performance required by the applicable *acceptable solutions* in respect of the *objectives* and *functional statements* attributed to the applicable *acceptable solutions* in MMAH Supplementary Standard SA-1, "Objectives and Functional Statements Attributed to the Acceptable Solutions." (See Note A-1.2.1.1.(1)(b))

(2) For the purposes of Clause (1)(b), the level of performance in respect of a *functional statement* refers to the performance of the *functional statement* as it relates to the *objective* with which it is associated in MMAH Supplementary Standard SA-1, "Objectives and Functional Statements Attributed to the Acceptable Solutions."

1.2.2. Materials, Appliances, Systems and Equipment

1.2.2.1. Characteristics of Materials, Appliances, Systems and Equipment

(1) All materials, *appliances*, systems and equipment installed to meet the requirements of this Code shall possess the necessary characteristics to perform their intended functions when installed in a *building*.

1.2.2.2. Reserved

1.2.2.3. Used Materials, Appliances and Equipment

(1) Unless otherwise specified, recycled materials in *building* products may be used, and used materials, *appliances* and equipment are permitted to be reused when they meet the requirements of this Code for new materials and are satisfactory for the intended use.

Section 1.3. Divisions A, B and C of this Code

1.3.1. General

1.3.1.1. Scope of Division A

(1) Division A contains the compliance and application provisions, *objectives* and *functional statements* of this Code.

1.3.1.2. Scope of Division B

(1) Division B contains the *acceptable solutions* of this Code.

1.3.1.3. Scope of Division C

(1) Division C contains the administrative provisions of this Code.

1.3.1.4. Internal Cross-References

(1) Where the Division of a referenced provision is not specified in this Code, it shall mean that the referenced provision is in the same Division as the referencing provision.

1.3.2. Application of Division A

1.3.2.1. Application of Parts 1, 2 and 3

(1) Parts 1, 2 and 3 of Division A apply to all *buildings* covered in this Code. (See Article 1.1.1.1.)

1.3.3. Application of Division B (See Note A-1.3.3.)

1.3.3.1. Application of Parts 1, 7 and 12

(1) Part 1 of Division B applies to all *buildings* covered in this Code. (See Article 1.1.1.1.)

(2) Subject to Article 1.3.3.3B., Parts 7 and 12 of Division B apply to all *buildings* covered in this Code.

1.3.3.1A. Application of Part 2

(1) Part 2 of Division B applies to all *farm buildings* covered in this Code.

Mobility assistive device means a mobility assistive device as defined in section 2 of Ontario Regulation 191/11 (Integrated Accessibility Standards) made under the *Accessibility for Ontarians with Disabilities Act, 2005*.

Modified pool means a *public pool* that has a basin-shaped floor sloping downward and inward toward the interior from the rim.

Modified stack venting means a *stack venting* arrangement in which the *stack vent* above the connection of the highest *stack vented fixture* is reduced in diameter.

Municipal drinking water system has the same meaning as in subsection 2(1) of the *Safe Drinking Water Act, 2002*.

Nominally horizontal means at an angle of less than 45° with the horizontal.

Nominally vertical means at an angle of not more than 45° with the vertical.

Nominal pipe size (NPS) means the nominal diameter by which a pipe, fitting, *trap* or other similar item is commercially designated.

Noncombustible means that a material meets the acceptance criteria of CAN/ULC-S114, "Standard Method of Test for Determination of Non-Combustibility in Building Materials."

Noncombustible construction means that type of construction in which a degree of fire safety is attained by the use of *noncombustible* materials for structural members and other *building* assemblies.

e1 *Objective* means an objective set out in Article 2.2.1.1.

Occupancy means the use or intended use of a *building* or part thereof for the shelter or support of persons, animals or property.

Occupant load means the number of persons for which a *building* or part thereof is designed.

e1 *Offset* means the piping that connects the ends of two pipes that are parallel.

Offset relief vent means a *relief vent* that provides additional air circulation upstream and downstream of an *offset* in a *stack*.

Open air means the atmosphere outside a *building*.

Open-air storey means a *storey* in which at least 25% of the total area of its perimeter walls is open to the outdoors in a manner that will provide cross-ventilation to the entire *storey*.

Outdoor pool means a *public pool* that is not an *indoor pool*.

Pail privy means a latrine in which the receptacle for human waste consists of a removable container surmounted by a superstructure.

Partition means an interior wall 1 *storey* or part-*storey* in height that is not *loadbearing*.

Party wall means a wall

(a) that is jointly owned and jointly used by two parties under an easement agreement or by a right in law, and
(b) that is erected at or upon a line separating two parcels of land each of which is, or is capable of being, a separate real estate entity.

Perched groundwater means a free standing body of water in the ground extending to a limited depth.

Percolation time means the average time in minutes that is required for water to drop one centimetre during a percolation test or as determined by a *soil* evaluation or analysis.

Performance level means the level of performance under which all or part of an existing *building* functions with respect to its *building systems*.

Permanent solid nutrient storage facility has the same meaning as in subsection 1(1) of Ontario Regulation 267/03 (General) made under the *Nutrient Management Act, 2002.*

Pharmacy means the premises in a *building* or the part of the premises in which prescriptions are compounded and dispensed for the public or in which drugs are sold by retail.

Pile means a slender *deep foundation unit* made of materials such as wood, steel or concrete or a combination thereof, that is either premanufactured and placed by driving, jacking, jetting or screwing, or cast-in-place in a hole formed by driving, excavating or boring. (Cast-in-place bored *piles* are often referred to as *caissons* in Canada.)

Plenum means a chamber forming part of an air duct system.

Plumbing appliance means a receptacle or equipment that receives or collects water, liquids or *sewage* and discharges water, liquid or *sewage* directly or indirectly to a *plumbing system*.

Plumbing system means a system of connected piping, fittings, valves, equipment, *fixtures* and appurtenances contained in *plumbing*.

Point of entry treatment unit has the same meaning as in subsection 1(1) of Ontario Regulation 170/03 (Drinking Water Systems) made under the *Safe Drinking Water Act, 2002*.

Pool deck means the area immediately surrounding a *public pool*.

Portable privy means a portable latrine in which the receptacle for human body waste and the superstructure are combined structurally into one unit.

Post-disaster building means a *building* that is necessary for the provision of essential services to the general public in the event of a disaster and includes

- hospitals, emergency treatment facilities and blood banks,
- telephone exchanges,
- power generating stations and electrical substations,
- control centres for natural gas distribution,
- control centres for air, land and marine transportation,
- water treatment facilities,
- water storage facilities,
- water and sewage pumping stations,
- sewage treatment facilities, and
- *buildings* of the following types, unless exempted from this designation by the *principle authority*:
  - emergency response facilities,
  - fire, rescue and police stations and housing for vehicles, aircraft or boats used for such purposes, and
  - communications facilities, including radio and television stations. (See Note A-1.4.1.2.(1))

e1 *Potable* means fit for human consumption.

Potable water system means the *plumbing* that conveys *potable* water.

Pressurized distribution system means a *leaching bed* in which the *effluent* is distributed through the use of pressurized *distribution pipes*.

r1 *Private sewage disposal system* means a *sewage system* or a *sewage works* that is not owned and operated by the Crown, a municipality or an organization acceptable to the Director responsible for issuing an environmental compliance approval required under section 53 of the *Ontario Water Resources Act*.

Private sewer means a sewer other than a *building sewer* that

(a) is not owned or operated by a municipality, the Ministry of the Environment, Conservation and Parks or another public agency,
(b) receives drainage from more than one *sanitary building drain* either directly or through more than one *sanitary building sewer* or receives drainage from more than *one storm building drain* either directly or through one or more *storm building sewers*, and connects to a main sewer, or
(c) serves as a place of disposal on the property,

but does not include

(d) a sewer that carries only the sanitary waste or *storm sewage* from semi-detached houses each containing not more than two *dwelling units*,
(e) a sewer that carries only the sanitary waste or *storm sewage* from one main *building* that is of *care*, *care and treatment*, *detention*, commercial or *industrial occupancy* and one ancillary *building*, or
(f) a sewer that carries only the sanitary waste or *storm sewage* from a row housing complex having five or fewer *dwelling units*.

Private use means, when applied to plumbing *fixtures*, *fixtures* in residences and apartments, in private bathrooms of *hotels*, and in similar installations in other *buildings* for a single household or an individual.

Private water supply means piping that serves as a source of supply on the property to more than one *water service pipe*.

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	B43-15	Standard Specification for Seamless Red Brass Pipe, Standard Sizes	7.2.7.1.(2)
ASTM	B68 / B68M-19	Standard Specification for Seamless Copper Tube, Bright Annealed	7.2.7.4.(4)
ASTM	B88-16	Standard Specification for Seamless Copper Water Tube	7.2.7.4.(1) 7.2.7.4.(4) Table 7.2.11.2.
ASTM	B306-13	Standard Specification for Copper Drainage Tube (DWV)	7.2.7.4.(1)
ASTM	B813-16	Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	7.2.9.2.(3)
ASTM	B828-16	Standard Specification for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	7.3.2.4.(1)
ASTM	C4-04	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile	Table 5.9.1.1. 9.14.3.1.(1)
ASTM	C27-98	Standard Specification for Fireclay and High-Alumina Refractory Brick	9.21.3.4.(1)
ASTM	C73-17	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)	Table 5.9.1.1. 9.20.2.1.(1)
ASTM	C126-13	Standard Specification for Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	Table 5.9.1.1. 9.20.2.1.(1)
ASTM	C212-17	Standard Specification for Structural Clay Facing Tile	Table 5.9.1.1. 9.20.2.1.(1)
ASTM	C260 / C260M-10a	Standard Specification for Air-Entraining Admixtures for Concrete	9.3.1.8.(1)
ASTM	C411-19	Standard Specification for Hot-Surface Performance of High-Temperature Thermal Insulation	3.6.5.4.(4) 3.6.5.5.(1) 9.33.8.2.(2)
ASTM	C412M-15	Standard Specification for Concrete Drain Tile (Metric)	Table 5.9.1.1. 9.14.3.1.(1)
ASTM	C444M-17	Standard Specification for Perforated Concrete Pipe (Metric)	Table 5.9.1.1. 9.14.3.1.(1)
ASTM	C494 / C494M-17	Standard Specification for Chemical Admixtures for Concrete	9.3.1.8.(1)
ASTM	C553-13	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications	Table 5.9.1.1.
ASTM	C612-14	Standard Specification for Mineral Fiber Block and Board Thermal Insulation	Table 5.9.1.1.
ASTM	C700-18	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated	Table 5.9.1.1. 9.14.3.1.(1)
ASTM	C726-17	Standard Specification for Mineral Wool Roof Insulation Board	Table 5.9.1.1. 9.25.2.2.(1)
ASTM	C834-17	Standard Specification for Latex Sealants	Table 5.9.1.1. 9.27.4.2.(2)
r1 ASTM	C840-18b	Standard Specification for Application and Finishing of Gypsum Board	3.1.6.6.(6) Table 5.9.1.1. 9.29.5.1.(3)
ASTM	C920-18	Standard Specification for Elastomeric Joint Sealants	Table 5.9.1.1. 9.27.4.2.(2)
ASTM	C954-18	Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs from 0.033 in. (0.84 mm) to 0.112 in. (2.84 mm) in Thickness	9.24.1.4.(1)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	C991-16	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings	Table 5.9.1.1.
ASTM	C1002-07	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs	Table 5.9.1.1. 9.24.1.4.(1) 9.29.5.7.(1)
ASTM	C1053-00	Standard Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste and Vent (DWV) Applications	7.2.8.1.(1)
ASTM	C1177 / C1177M-17	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing	3.1.5.14.(6) 3.1.5.15.(4) Table 5.9.1.1. Table 9.23.17.2-A
ASTM	C1178 / C1178M-18	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel	3.1.5.14.(6) 3.1.5.15.(4) Table 5.9.1.1. 9.29.5.2.(1)
ASTM	C1184-18e1	Standard Specification for Structural Silicone Sealants	Table 5.9.1.1. 9.27.4.2.(2)
ASTM	C1280-13	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing	Table 5.9.1.1.
ASTM	C1311-14	Standard Specification for Solvent Release Sealants	Table 5.9.1.1. 9.27.4.2.(2)
ASTM	C1330-18	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants	Table 5.9.1.1. 9.27.4.2.(3)
r1 ASTM	C1396 / C1396M-17	Standard Specification for Gypsum Board	3.1.5.14.(6) 3.1.5.15.(4) 3.1.6.6.(2) 3.1.6.6.(3) 3.1.6.6.(4) 3.1.6.6.(5) 3.1.6.15.(1) Table 5.9.1.1. Table 9.23.17.2.-A 9.29.5.2.(1) Table 9.29.5.3.
ASTM	C1658 / C1658M-18	Standard Specification for Glass Mat Gypsum Panels	3.1.5.14.(6) Table 5.9.1.1.
ASTM	D323-15a	Standard Specification for Vapor Pressure of Petroleum Products (Reid Method)	1.4.1.2.(1) of Division A
ASTM	D374-99 / D374M-16	Standard Test Methods for Thickness of Solid Electrical Insulation	3.15.4.1.(1)
ASTM	D635-22	Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position	3.15.4.1.(1)
ASTM	D1227 / D1227M-13	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	Table 5.9.1.1. 9.13.2.2.(2) 9.13.3.2.(2)
ASTM	D2178 / D2178M-13a	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing	Table 5.9.1.1.
ASTM	D2466-17	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	7.2.5.7.(2)
ASTM	D2467-15	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	7.2.5.7.(2)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	D2898-10	Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing	3.1.4.8.(3) 3.1.5.5.(3) 3.1.5.24.(1) 3.1.6.9.(8) 3.2.3.7.(4)
ASTM	D3019 / D3019M-17	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, Asbestos-Fibered, and Non-Asbestos-Fibered	Table 5.9.1.1. 9.13.3.2.(2) Table 9.27.2.1.-B
ASTM	D3261-16	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	7.2.5.4.(3)
ASTM	D3679-17	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	9.27.12.1.(1)
ASTM	D3801-20a	Standard Test Method for Measuring the Comparative Burning Characteristics of Solid Plastics in a Vertical Position	3.15.4.1.(1)
ASTM	D4477-16	Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit	9.27.12.1.(3)
ASTM	D4479 / D4479M-07e1	Standard Specification for Asphalt Roof Coatings - Asbestos-Free	Table 5.9.1.1. 9.13.2.2.(2) 9.13.3.2.(2) Table 9.26.2.1.-B
ASTM	D4637 / D4637M-15	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane	Table 5.9.1.1. 9.13.3.2.(2) Table 9.26.2.1.-B
ASTM	D4811 / D4811M-16	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing	Table 5.9.1.1. 9.13.3.2.(2) Table 9.26.2.1.-B
ASTM	D5456-19	Standard Specification for Evaluation of Structural Composite Lumber Products	3.1.11.7.(5)
ASTM	D6878 / D6878M-11a	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing	Table 5.9.1.1. 9.13.3.2.(2) Table 9.26.2.1.-B
ASTM	D7254-17	Standard Specification for Polypropylene (PP) Siding	9.27.13.1.(1)
ASTM	D7793-17	Standard Specification for Insulated Vinyl Siding	9.27.12.1.(2)
ASTM	E90-09	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements	5.8.1.2.(1) 5.8.1.4.(1) 9.11.1.2.(1)
ASTM	E96 / E96M-16	Standard Test Methods for Water Vapor Transmission of Materials	5.5.1.2.(3) 9.13.2.2.(2) 9.25.4.2.(1) 9.25.4.2.(2) 9.25.5.1.(1)
ASTM	E283-04	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen	5.9.3.4.(2)
ASTM	E331-00	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference	5.9.3.5.(2)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)
Issued November 4, 2024

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	E336-11	Standard Test Method for Measurement of Airborne Sound Attenuation Between Rooms in Buildings	5.8.1.2.(2) 5.8.1.4.(7) 9.11.1.2.(2)
ASTM	E413-16	Classification for Rating Sound Insulation	5.8.1.2.(1) 5.8.1.2.(2) 5.8.1.4.(7) 5.8.1.5.(3) 9.11.1.2.(1) 9.11.1.2.(2)
ASTM	E547-00	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference	5.9.3.5.(2)
ASTM	E130016	Standard Practice for Determining Load Resistance of Glass in Buildings	4.3.6.1.(1)
ASTM	E2190-19	Standard Specification for Insulating Glass Unit Performance and Evaluation	Table 5.9.1.1. 9.6.1.2.(1)
ASTM	E2307-15b	Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-storey Test Apparatus	3.1.8.3.(4) 9.10.9.2.(4)
ASTM	F476-14	Standard Test Methods for Security of Swinging Door Assemblies	9.7.5.2.(2)
ASTM	F628-12e2	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe With a Cellular Core	7.2.5.9.(1) 7.2.5.11.(1) 7.2.5.11.(1.1)
ASTM	F714-13	Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter	7.2.5.5.(1)
ASTM	F1667-18a	Standard Specification for Driven Fasteners: Nails, Spikes and Staples	9.23.3.1.(1) 9.26.2.3.(1) 9.29.5.6.(1)
ASTM	F3128-19	Standard Specification for Poly(Vinyl Chloride) (PVC) Schedule 40 Drain, Waste, and Vent Pipe with a Cellular Core	7.2.5.16.(1)
AWS	ANSI/AWS A5.8M / A5.8: 2011	Specification for Filler Metals for Brazing and Braze Welding	7.2.9.2.(4)
AWWA	ANSI/AWWA C104 / A21.4-13	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings	7.2.6.4.(2) Table 7.2.11.2.
AWWA	ANSI/AWWA C110 / A21.10-12	Ductile-Iron and Gray-Iron Fittings	7.2.6.4.(3) Table 7.2.11.2.
AWWA	ANSI/AWWA C111 / A21.11-12	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	7.2.6.4.(4) Table 7.2.11.2.
AWWA	ANSI/AWWA C151 / A21.51-09	Ductile-Iron Pipe, Centrifugally Cast	7.2.6.4.(1) Table 7.2.11.2.
AWWA	ANSI/AWWA C228-08	Stainless-Steel Pipe Flanges For Water Service - Sizes 2 in. through 72 in. (50 mm through 1,800 mm)	7.2.6.12.(1)
BCMOH	Version 2, 21st Sept, 2007	Sewerage System Standard Practice Manual	8.7.8.3.(2) 8.7.8.3.(3)
BNQ	BNQ 3624-115-2016	Polyethylene (PE) Pipe and Fittings - Flexible Pipes for Drainage - Characteristics and Test Methods	Table 5.9.1.1. 9.14.3.1.(1)
BNQ	CAN/BNQ 3680-600-2023	Onsite Residential Wastewater Treatment Technologies	8.6.2.2.(5) Table 8.6.2.2.

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CGSB	CAN/CGSB-51.71-2005	Depressurization Test	9.32.3.8.(7)
CGSB	CAN/CGSB-82.6-M86	Doors, Mirrored Glass, Sliding or Folding, Wardrobe	9.6.1.2.(2)
CGSB	CAN/CGSB-93.1-M85	Sheet, Aluminum Alloy, Prefinished Residential	Table 5.9.1.1. 9.27.11.1.(3)
CGSB	CAN/CGSB-93.2-M91	Prefinished Aluminum Siding, Soffits and Facsia for Residential Use	3.2.3.6.(5) Table 5.9.1.1. 9.10.14.5.(12) 9.27.11.1.(2)
CSA	CAN/CSA-6.19-01	Residential carbon monoxide alarming devices	6.9.4.4.(1) 9.32.3.9.(2) 9.32.3.9C.(1)
CSA	A23.1:19	Concrete materials and methods of concrete construction	4.2.3.6.(1) 4.2.3.9.(1) Table 5.9.1.1. 9.3.1.1.(1) 9.3.1.1.(4) 9.3.1.3.(1) 9.3.1.4.(1) 9.40.1.4.(1)
CSA	A23.3:19	Design of concrete structures	Table 4.1.8.9. 4.1.8.18.(7) 4.3.3.1.(1)
CSA	A60.1-M1976	Vitrified Clay Pipe	7.2.5.3.(1)
CSA	A60.3-M1976	Vitrified Clay Pipe Joints	7.2.5.3.(2)
CSA	CAN/CSA-A82-14	Fire masonry brick made from clay or shale	Table 5.9.1.1. 9.20.2.1.(1)
CSA	CAN/CSA-A82.27-M91	Gypsum Board	3.1.5.14.(6) 3.1.5.15.(4) 3.1.6.6.(2) 3.1.6.6.(3) 3.1.6.6.(4) 3.1.6.6.(5) 3.1.6.15.(1) 9.29.5.2.(1)
CSA	A82.30-M1980	Interior Furring, Lathing and Gypsum Plastering	9.29.4.1.(1)
CSA	A82.31-M1980	Gypsum Board Application	3.2.3.6.(5) 9.10.9.2.(5) 9.10.12.4.(3) 9.10.14.5.(12) 9.29.5.1.(2)
CSA	CAN3-A93-M82	Natural Airflow Ventilators for Buildings	Table 5.9.1.1. 9.19.1.2.(5)
CSA	CAN/CSA-A123.2-03	Asphalt Coated Roofing Sheets	Table 5.9.1.1. 9.13.3.2.(2) Table 9.26.2.1.-B
CSA	A123.3-05	Asphalt Saturated Organic Roofing Felt	Table 5.9.1.1. Table 9.26.2.1.-B

r1

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	CAN/CSA-A123.4-04	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems	Table 5.9.1.1. 9.13.2.2.(2) 9.13.3.2.(2) Table 9.26.2.1.-B
CSA	A123.5:16	Asphalt shingles made from glass felt and surfaced with mineral granules	Table 5.9.1.1. 9.13.3.2.(2) Table 9.26.2.1.-B
CSA	CAN/CSA-A123.16:04	Asphalt-coated glass-base sheets	Table 5.9.1.1. Table 9.26.2.1.-B
CSA	A123.17-05	Asphalt Glass Felt Used in Roofing and Waterproofing	Table 5.9.1.1. 9.13.3.2.(2) Table 9.26.2.1.-B
CSA	CAN/CSA-A123.21:14	Standard test method for the dynamic wind uplift resistance of membrane-roofing systems	5.2.2.2.(4)
CSA	A123.22-08	Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection	Table 9.26.2.1-.B
CSA	A123.23-15	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced	Table 5.9.1.1. Table 9.26.2.1.-B
CSA	A123.51-14	Asphalt shingle application on roof slopes 1:6 and steeper	Table 5.9.1.1. 9.26.1.3.(1)
CSA	A165.1-14	Concrete block masonry units	Table 5.9.1.1. 9.15.2.2.(1) 9.17.5.1.(1) 9.20.2.1.(1) 9.20.2.6.(1)
CSA	A165.2-14	Concrete brick masonry units	Table 5.9.1.1. 9.20.2.1.(1)
CSA	A165.3-14	Prefaced concrete masonry units	Table 5.9.1.1. 9.20.2.1.(1)
CSA	CAN/CSA-A179-14	Mortar and Grout for Unit Masonry	Table 5.9.1.1. 9.15.2.2.(3) 9.20.3.1.(1)
CSA	CAN/CSA-A220 Series-06	Concrete Roof Tiles	Table 5.9.1.1. Table 9.26.2.1.-B 9.26.17.1.(1)
CSA	A257.1:19	Non-reinforced circular concrete culvert, storm drain, sewer pipe, and fittings	7.2.5.2.(1)
CSA	A257.2:19	Reinforced circular concrete culvert, storm drain, sewer pipe, and fittings	7.2.5.2.(1)
CSA	A257.3:19	Joints for circular concrete sewer and culvert pipe, manhole sections, and fittings using rubber gaskets	7.2.5.2.(2)
CSA	A257.4:19	Precast reinforced circular concrete manhole sections, catch basins, and fittings	7.2.5.2.(5)
CSA	A277-16	Procedure for certification of prefabricated buildings, modules, and panels	9.1.1.9.(1) 1.12.1.1.(1) of Division C 3.1.1.1.(2) of Division C 3.2.4.1.(3) of Division C
CSA	CAN/CSA-A324-M88	Clay Flue Liners	9.21.3.3.(1)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	CAN/CSA-A371-14	Masonry Construction for Buildings	Table 5.9.1.1. 9.15.2.2.(3) 9.20.3.2.(7) 9.20.15.2.(1)
CSA	CAN/CSA-A405-M87	Design and Construction of Masonry Chimneys and Fireplaces	9.21.3.5.(1) 9.22.1.4.(1) 9.22.5.2.(2)
CSA	AAMA/WDMA/CSA 101/I.S.2/A440-17	NAFS – North American Fenestration Standard/Specification for windows, doors, and skylights	5.9.2.2.(1) Table 9.7.3.3. 9.7.4.1.(1) 9.7.4.2.(1) 9.7.5.1.(1) 9.7.5.3.(1)
CSA	A440S1:19	Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-17, NAFS - North American Fenestration Standard/Specification for windows, doors, and skylights	5.9.2.2.(1) 5.9.3.5.(3) 9.7.4.2.(1) 9.7.4.3.(1)
CSA	A440.2-14	Fenestration Energy Performance	12.3.1.2.(1)
CSA	A440.2:19 / A440.3:19	Fenestration Energy Performance / user Guide to CSA A440.2-14, Fenestration energy performance	Table 9.7.3.3.
CSA	CAN/CSA-A440.4:19	Window, door, and skylight installation	9.7.6.1.(1)
CSA	A660-10	Certification of manufacturers of steel building systems	4.3.4.3.(1)
CSA	A3001-18	Cementitious Materials for Use in Concrete	Table 5.9.1.1. 9.3.1.2.(1) 9.28.2.1.(1)
CSA	B52:23	Mechanical refrigeration code	6.3.1.5.(4)
CSA	B64.0-11	Definitions, general requirements, and test methods for vacuum breakers and backflow preventers	7.2.10.10.(1)
CSA	B64.1.1-11	Atmospheric vacuum breakers (AVB)	7.2.10.10.(1)
CSA	B64.1.2-11	Pressure vacuum breakers (PVB)	7.2.10.10.(1)
CSA	B64.1.3-11	Spill-resistant pressure vacuum breakers (SRPVB)	7.2.10.10.(1)
CSA	B64.1.4-11	Vacuum breaker, air space type (ASVB)	7.2.10.10.(1)
CSA	B64.2-11	Hose connection vacuum breakers (HCVB)	7.2.10.10.(1)
CSA	B64.2.1-11	Hose connection vacuum breakers (HCVB) with manual draining feature	7.2.10.10.(1)
CSA	B64.2.1.1-11	Hose connection dual check vacuum breakers (HCDVB)	7.2.10.10.(1)
CSA	B64.2.2-11	Hose connection vacuum breakers (hcvb) with automatic draining feature	7.2.10.10.(1)
CSA	B64.3-11	Dual check valve backflow preventers with atmospheric port (DCAP)	7.2.10.10.(1) 7.6.2.5A.(4)
CSA	B64.3.1-11	Dual check valve backflow preventers with atmospheric port for carbonators (DCAPC)	7.2.10.10.(1)

r1

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	B64.4-11	Reduced Pressure Principle (RP) backflow preventers	7.2.10.10.(1) 7.6.2.4.(2)
CSA	B64.4.1-11	Reduced pressure principle backflow preventers for fire protection systems (RPF)	7.2.10.10.(1) 7.6.2.4.(2) 7.6.2.4.(4)
CSA	B64.5-11	Double check valve (DCVA) backflow preventers	7.2.10.10.(1) 7.6.2.4.(2)
CSA	B64.5.1-11	Double check valve backflow preventers for fire protection systems (DCVAF)	7.2.10.10.(1) 7.6.2.4.(2)
CSA	B64.6-11	Dual check valve (DuC) backflow preventers	7.2.10.10.(1) 7.6.2.4.(2) 7.6.2.6.(3) 7.7.1.1.(6)
CSA	B64.6.1-11	Dual check valve backflow preventers for fire protection systems (DuCF)	7.2.10.10.(1) 7.6.4.2.(2)
CSA	B64.7-11	Laboratory faucet vacuum breakers (LFVB)	7.2.10.10.(1)
CSA	B64.8-11	Dual check valve backflow preventers with intermediate vent (DuCV)	7.2.10.10.(1)
CSA	B64.9-11	Single check valve backflow preventers for fire protection systems (SCVAF)	7.2.10.10.(1) 7.6.2.4.(2)
CSA	B64.10-17	Selection and installation of backflow preventers	7.2.10.10.(1) 7.6.2.3.(1) 7.6.2.6.(1)
CSA	B66-21	Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks	8.2.2.2.(1) 8.2.2.2.(2) 8.2.2.3.(7) 8.2.2.3.(11)
CSA	B70-12	Cast iron soil pipe, fittings and means of joining	7.2.6.1.(1) 7.4.6.4.(2)
CSA	B70.1-03	Frames and Covers for Maintenance Holes and Catchbasins	7.2.6.2.(1)
CSA	B111-1974	Wire Nails, Spikes and Staples	9.23.3.1.(1) 9.26.2.3.(1) 9.29.5.6.(1)
CSA	B125.3-18	Plumbing fittings	7.2.10.6.(1) 7.2.10.7.(2) 7.2.10.7.(3) 7.2.10.7B.(2)
CSA	CAN/CSA-B126.0-13	General requirements and methods of testing for water cisterns	7.7.2.4.(6)
CSA	CAN/CSA-B126.1-13	Installation of water cisterns	7.7.2.4.(6)
CSA	CAN/CSA-B127.3-18	Fibrocement drain, waste, and vent pipe and pipe fittings	7.2.5.1.(1)
CSA	CAN/CSA-B128.1-06	Design and installation of non-potable water systems	7.7.1.2.(1) 7.7.3.1.(1)
CSA	B137.1-17	Polyethylene (PE) pipe, tubing and fittings for cold water pressure services	7.2.5.4.(1) Table 7.2.11.2.
CSA	B137.2-17	Polyvinylchloride (PVC) injection-moulded gasketed fittings for pressure applications	7.2.5.7.(3) 7.2.5.9.(1)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	C22.2 No. 0.3-09	Test methods for electrical wires and cables	3.1.4.3.(1) 3.1.4.3.(3) 3.1.5.21.(1) 3.1.5.21.(3) 3.1.5.25.(1) 3.1.5.25.(2) 9.34.1.5.(1)
CSA	C22.2 No.113-10	Fans and Ventilators	9.32.3.10.(7)
CSA	C22.2 No. 141:15	Emergency lighting equipment	3.2.7.4.(2) 3.4.5.1.(3) 9.9.11.3.(3) 9.9.12.3.(7)
CSA	C22.2 No. 211.0-03	General Requirements and Methods of Testing for Nonmetallic Conduit	3.1.5.23.(1)
CSA	CAN/CSA-C22.2 No. 262-04	Optical Fiber Cable and Communication Cable Raceway Systems	3.1.5.23.(1)
CSA	CAN/CSA-C22.3 No. 1-20	Overhead Systems	3.1.20.1.(2)
CSA	CAN/CSA-C88-M90	Power Transformers and Reactors	3.6.2.7.(10)
CSA	CAN/CSA-C260-M90	Rating for the Performance of Residential Mechanical Ventilating Equipment	9.32.3.10.(1) 9.32.3.10.(2) Table 9.32.3.10.-B
CSA	C282-15	Emergency electrical power supply for buildings	3.2.7.5.(1)
CSA	CAN/CSA-C439-09	Standard laboratory methods of test for rating the performance of heat/energy-recovery ventilators	9.32.3.10.(4) 9.32.3.10.(5)
CSA	CAN/CSA-C448.1-13	Design and Installation of Earth Energy Systems for Commercial and Institutional Buildings	6.2.1.5.(4) 9.33.5.2.(2)
CSA	CAN/CSA-C448.2-13	Design and Installation of Earth Energy Systems for Residential and Other Small Buildings	6.2.1.5.(3) 9.33.5.2.(1)
CSA	F280-12	Determining the required capacity of residential space heating and cooling appliances	9.33.4.1.(1) 9.33.5.1.(3)
CSA	CAN/CSA-F326-M91	Residential Mechanical Ventilation Systems	9.32.3.1.(1) 9.33.4.1.(1)
CSA	CAN/CSA-F379 Series-09 (excluding Supplement F379S1-11)	Packaged solar domestic hot water systems (liquid-to-liquid heat transfer)	7.2.10.13.(1)
CSA	CAN/CSA-F379.1-09	Packaged solar domestic hot water systems (liquid-to-liquid heat transfer) for All Season Use	7.6.1.8.(1) 7.6.2.5A.(3) 7.6.2.5A.(4)
r1 CSA	CAN/CSA-F383-08	Installation of packaged solar domestic hot water systems	7.6.1.8.(1)
CSA	G30.18-09	Carbon steel bars for concrete reinforcement	9.3.1.1.(4) 9.40.1.3.(1)
CSA	G40.21-13	Structural quality steel	4.2.3.8.(1) Table 5.9.1.1. 9.23.4.3.(2)
CSA	CAN/CSA-G164-M92	Hot Dip Galvanizing of Irregularly Shaped Articles	4.4.5.1.(4)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	CAN/CSA-G401-14	Corrugated steel pipe products	Table 5.9.1.1. 7.2.6.8.(1) 9.14.3.1.(1)
CSA	CAN/CSA-O80 Series-15	Wood preservation	3.1.4.5.(1) 4.2.3.2.(1) Table 5.9.1.1.
CSA	CAN/CSA-O80.0-15	General requirements for wood preservation	4.2.3.2.(2)
CSA	CAN/CSA-O80.1-15	Specification of treated wood	4.2.3.2.(1) 9.3.2.9.(5)
CSA	CAN/CSA-O80.2-15	Processing and treatment	4.2.3.2.(1)
CSA	CAN/CSA-O80.3-15	Preservative formulations	4.2.3.2.(1)
CSA	O86:19	Engineering design in wood	Table 4.1.8.9. 4.3.1.1.(1)
CSA	O118.1-08	Western Red Cedar Shakes and Shingles	Table 5.9.1.1. Table 9.26.2.1.-B 9.27.7.1.(1)
CSA	O118.2-08	Eastern White Cedar Shingles	Table 5.9.1.1. Table 9.26.2.1.-B 9.27.7.1.(1)
CSA	O121-17	Douglas fir plywood	Table 5.9.1.1. Table 9.23.12.3.-A Table 9.23.12.3.-B Table 9.23.12.3.-C Table 9.23.17.2.-A 9.23.15.2.(1) 9.23.16.2.(1) 9.27.8.1.(1) 9.30.2.2.(1)
CSA	CAN/CSA-O122-16	Structural glued-laminated timber	Table 9.23.4.2.-K Table 9.23.12.3.-D
CSA	CAN/CSA-O132.2 Series-90	Wood Flush Doors	9.7.4.3.(4)
CSA	O141:05	Softwood Lumber	Table 5.9.1.1. 9.3.2.6.(1)
CSA	O151-17	Canadian softwood plywood	Table 5.9.1.1. Table 9.23.12.3.-A Table 9.23.12.3.-B Table 9.23.12.3.-C 9.23.15.2.(1) 9.23.16.2.(1) Table 9.23.17.2.-A 9.27.8.1.(1) 9.30.2.2.(1)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	O153-13	Poplar plywood	Table 5.9.1.1. 9.23.15.2.(1) 9.23.16.2.(1) Table 9.23.17.2.-A 9.27.8.1.(1) 9.30.2.2.(1)
CSA	O177-06	Qualification Code for Manufacturers of Structural Glued-Laminated Timber	4.3.1.2.(1) Table 9.23.4.2.-K Table 9.23.12.3.-D
CSA	O325-16	Construction sheathing	Table 5.9.1.1. Table 9.23.12.3.-A Table 9.23.12.3.-B Table 9.23.12.3.-C Table 9.23.13.6. 9.23.15.2.(1) 9.23.15.4.(2) 9.23.16.2.(1) 9.23.16.3.(2) Table 9.23.16.7.-B Table 9.23.17.2.-A Table 9.23.17.2.-B 9.29.9.1.(2) 9.29.9.2.(5)
CSA	O437.0-93	OSB and Waferboard	Table 5.9.1.1. Table 9.23.12.3.-A Table 9.23.12.3.-B Table 9.23.12.3.-C 9.23.15.2.(1) 9.23.15.4.(2) 9.23.16.2.(1) 9.23.16.3.(2) Table 9.23.17.2.-A 9.27.10.1.(1) 9.29.9.1.(2) 9.30.2.2.(1)
CSA	S16-19	Design of Steel Structures	Table 4.1.8.9. 4.3.4.1.(1)
CSA	S37-18	Antennas, Towers, and Antenna-Supporting Structures	4.1.6.15.(1) 4.1.7.11.(1)
CSA	S136-16	North American specification for the design of cold formed steel structural members (using the Appendix B provisions applicable to Canada)	4.1.8.1.(5) Table 4.1.8.9. 4.3.4.2.(1)
CSA	S157-17 / S157.1-17	Strength design in aluminum / Commentary on CSA S157-17, Strength design in aluminum	4.3.5.1.(1)
CSA	S304-14	Design of masonry structures	Table 4.1.8.9. 4.3.2.1.(1)
CSA	S367-12	Air-, cable-, and frame-supported membrane structures	4.4.1.1.(1)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	S406-16	Specification of permanent wood foundations for housing and small buildings	9.13.2.7.(1) 9.15.2.4.(1) 9.16.5.1.(1)
CSA	S413-14	Parking structures	4.4.2.1.(1)
CSA	S478-19	Durability in buildings	5.1.4.2.(3) Table 5.9.1.1.
CSA	Z32-15	Electrical safety and essential electrical systems in health care facilities	3.2.7.3.(4) 3.2.7.6.(1) 3.7.5.1.(1)
CSA	Z240 MH Series-16	Manufactured homes	3.1.1.1.(2) of Division C 3.2.4.1.(3) of Division C
CSA	Z240.2.1-16	Structural requirements for manufactured homes	9.1.1.9.(1) 9.12.2.2.(6) 9.15.1.3.(1)
CSA	Z240.10.1-19	Site preparation, foundation, and installation of buildings	9.15.1.3.(1) 9.23.6.3.(1)
CSA	CAN/CSA-Z241 Series-18	Park model trailers	9.39.1.1.(1) 9.39.2.1.(1) 3.1.1.1.(2) of Division C 3.2.4.1.(3) of Division C
CSA	CSA Z271:20	Design of suspended access equipment	4.4.5.1.(2)
CSA	CAN/CSA-Z317.2-15	Special requirements for heating, ventilation and air conditioning (HVAC) systems in health care facilities	6.2.1.1.(1) 6.2.3.15.(6)
CSA	CAN/CSA-Z662-15	Oil and gas pipeline systems	3.2.3.22.(1)
CSA	Z7396.1-17	Medical gas piping systems - Part 1: Pipelines for medical gases, medical vacuum, medical support gases, and anaesthetic gas scavenging systems	3.7.5.2.(1)
CSA / IAPMO	CSA B45.5-17 / IAPMO Z124-2017	Plastic plumbing fixtures	7.2.2.2.(1)
CSA / ICC	CSA B805-18 / ICC 805-2018	Rainwater harvesting systems	7.7.2.4.(4)
CSSBI	23M-2016	Standard for Residential Steel Cladding	9.27.11.1.(1)
CWC	2014	Engineering Guide for Wood Frame Construction	9.4.1.1.(1) 9.23.13.1.(2) 9.23.13.2.(2) 9.23.13.3.(2)
DBR	Technical Paper No. 194, May 1965	Fire Endurance of Protected Steel Columns and Beams	Table 11.5.1.1.-A Table 11.5.1.1.-B Table 11.5.1.1.-C Table 11.5.1.1.-D/E Table 11.5.1.1.-F
DBR	Technical Paper No. 207, October 1965	Fire Endurance of Unit Masonry Walls	Table 11.5.1.1.-A Table 11.5.1.1.-B Table 11.5.1.1.-C Table 11.5.1.1.-D/E Table 11.5.1.1.-F

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
DBR	Technical Paper No. 222, June 1966	Fire Endurance of Light-Framed and Miscellaneous Assemblies	Table 11.5.1.1.-A Table 11.5.1.1.-B Table 11.5.1.1.-C Table 11.5.1.1.-D/E Table 11.5.1.1.-F
EPA	625/R-92/016 (1994)	Radon Prevention in the Design and Construction of Schools and Other Large Buildings	6.2.1.1.(1)
FINA	2021	Rules and Regulations - FINA Facilities Rules 2021-2025 - FR3 Diving	3.11.4.1.(17)
HC	SOR/2015-17	Hazardous Products Regulations	1.4.1.2.(1) of Division A
HI	2005	Hydronics Institute Manuals	6.2.1.1.(1) 9.32.2.3.(4) 9.32.3.2.(1) 9.33.4.1.(1) 9.33.6.7.(2)
HPVA	ANSI/HPVA HP-1-2009	American National Standard for Hardwood and Decorative Plywood	Table 5.9.1.1. 9.27.8.1.(1) 9.30.2.2.(1)
HRAI	2017 Edition	HRAI Digest	6.2.1.1.(1) 9.32.2.3.(4) 9.32.3.2.(1) 9.33.4.1.(1)
HUD	Rehabilitation Guidelines 2000	Guideline on Fire Ratings of Archaic Materials and Assemblies	Table 11.5.1.1.-A Table 11.5.1.1.-B Table 11.5.1.1.-C Table 11.5.1.1.-D/E Table 11.5.1.1.-F
HVI	HVI 915-2013	Loudness Testing and Rating Procedure	9.32.3.10.(2) Table 9.32.3.10.-B
HVI	HVI 916-2013	Airflow Test Procedure	9.32.3.10.(1)
IAPMO	PS 63-2014	Plastic Leaching Chambers	8.7.2.3.(3)
ISO	3864-1:2011	Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings	3.4.5.1.(2) 9.9.11.3.(2)
ISO	7010:2011	Graphical symbols - Safety colours and safety signs - Registered safety signs	3.4.5.1.(2) 9.9.11.3.(2)
ISO	8201:2017	Acoustics - audible emergency evacuation signal	3.2.4.18.(2)
ISO	10848-1:2017	Acoustics - Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms	5.8.1.4.(2) 5.8.1.4.(3) 5.8.1.5.(2) 5.8.1.5.(3)

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ISO	15712-1:2005	Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 1: Airborne sound insulation between rooms	5.8.1.4.(1) 5.8.1.4.(2) 5.8.1.4.(4) 5.8.1.4.(5) 5.8.1.4.(6) 5.8.1.5.(1) 5.8.1.5.(2) 5.8.1.5.(5) 5.8.1.5.(6)
ISO	23599:2019	Assistive products for blind and vision-impaired persons – Tactile walking surface indicators	3.8.3.18.(1)
MMAH	Supplementary Standard SA-1, September 9, 2024	Objectives and Functional Statements Attributed to the Acceptable Solutions	1.2.1.1.(1) of Division A 1.2.1.1.(2) of Division A
MMAH	Supplementary Standard SB-1, January 1, 2024	Climatic and Seismic Data	1.1.2.1.(1) 1.1.2.1.(2) 2.1.2.3.(4) 2.1.2.3.(5) 3.2.6.2.(2) 3.2.8.4.(1) 3.3.1.7.(1) 5.2.1.1.(1) 5.2.1.1.(2) 6.2.1.2.(1) 7.4.10.4.(1) 9.4.1.1.(3) 9.4.2.2.(1) Tables 9.6.1.3.-A to 9.6.1.3.-G Table 9.32.3.4. 9.33.3.2.(1) 9.33.4.1.(1)

r1

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
MMAH	Supplementary Standard SB-2, January 1, 2024	Fire Performance Ratings	2.2.1.10.(2) 3.1.4.8.(4) 3.1.5.5.(4) 3.1.5.6.(2) 3.1.5.29.(1) 3.1.6.9.(6) 3.1.6.10.(2) 3.1.7.1.(2) 3.1.8.16.(2) 3.1.9.5.(1) 3.1.12.1.(3) 3.2.3.12.(1) 3.2.3.13.(4) 3.6.1.5.(1) 3.13.2.1.(11) 3.13.3.5.(1) 3.13.3.6.(2) 3.13.4.2.(7) 9.10.3.1.(1) 9.10.3.2.(1) 9.10.5.1.(3) 9.10.9.11.(1)
MMAH	Supplementary Standard SB-3, January 1, 2024	Fire and Sound Resistance Tables	5.8.1.3.(1) 5.8.1.3.(2) 9.10.3.1.(1) 9.10.5.1.(3) 9.11.1.3.(1) 9.11.1.3.(2) Table 9.11.1.4. 9.29.5.9.(5)
MMAH	Supplementary Standard SB-4, January 1, 2024	Measures for Fire Safety in High Buildings	3.2.6.2.(1) 3.2.6.2.(7) 3.2.6.5.(3) 3.2.6.9.(1) 3.13.3.6.(5) Table 11.5.1.1.-C Table 11.5.1.1.-D/E Table 11.5.1.1.-F
MMAH	Supplementary Standard SB-6, January 1, 2024	Percolation Times and Soil Descriptions	8.2.1.2.(2)
MMAH	Supplementary Standard SB-7, January 1, 2024	Guards for Housing and Small Buildings	9.8.8.2.(6)
MMAH	Supplementary Standard SB-8, January 1, 2024	Design, Construction and Installation of Anchorage Systems for Fixed Access Ladders	3.6.1.6.(1)
MMAH	Supplementary Standard SB-9, January 1, 2024	Requirements for Soil Gas Control	9.13.4.1.(3) 9.13.4.2.(1)

r1

Table 1.3.1.2. (Cont'd)
Documents Referenced in the Building Code
Forming Part of Sentence 1.3.1.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
MMA	Supplementary Standard SB-10, December 22, 2016	Energy Efficiency Requirements	Table 9.7.3.3. 12.2.1.2.(2) 12.2.2.1.(1) 12.2.3.1.(1)
MMAH	Supplementary Standard SB-11, January 1, 2024	Construction of Farm Buildings	2.1.2.3.(5)
MMA	Supplementary Standard SB-12, July 7, 2016	Energy Efficiency for Housing	Table 9.7.3.3. Table 11.5.1.1.-C 12.2.1.2.(3)
MMAH	Supplementary Standard SB-13, January 1, 2024	Glass in Guards	3.1.21.1.(1)
MMAH	Supplementary Standard SC-1, January 1, 2024	Code of Conduct for Registered Code Agencies	3.7.4.1.(2) of Division C
MOE	PIBS 6879 2008	Design Guidelines for Sewage Works	7.1.2.5.(1)
MOE	PIBS 6881e 2008	Design Guidelines for Drinking-Water Systems	7.1.2.5.(2)
NFPA	2023 Publication	National Fire Codes	6.2.1.1.(1)
NFPA	13-2019	Standard for the Installation of Sprinkler Systems	3.1.9.1.(4) 3.2.4.8.(2) 3.2.4.15.(1) 3.2.5.12.(1) 3.2.5.12.(9) 3.2.8.2.(5) 3.2.8.3.(2) 3.3.2.14.(3) 3.16.1.1.(3) 3.16.1.1.(4) 3.16.1.6.(2) 3.16.1.6.(8) 3.16.1.7.(2) 3.16.2.1.(1) 3.16.2.2.(1) 3.16.3.1.(1) 9.10.9.9.(4)
NFPA	13D-2016	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	3.2.4.1.(2) 3.2.5.12.(3) 3.2.7.9.(4)
NFPA	13R-2019	Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies	3.2.5.12.(2)
NFPA	14-2013	Standard for the Installation of Standpipe and Hose Systems	3.2.5.9.(1) 3.2.5.10.(1)
NFPA	20-2016	Standard for the Installation of Stationary Pumps for Fire Protection	3.2.4.9.(4) 3.2.5.18.(1)
NFPA	24-2013	Standard for the Installation of Private Fire Service Mains and Their Appurtenances	7.2.11.1.(1)
NFPA	68-2013	Standard on Explosion Protection by Deflagration Venting	3.3.6.3.(1) 3.3.6.4.(2) 3.3.6.4.(1)

2.2.1.15. Electrical Wiring and Equipment (See Note A-2.2.1.15.)

(1) Reserved.

(2) Electrical wiring installed in a concealed space shall be enclosed in rigid conduit or otherwise protected against damage. (See Note A-2.2.1.15.(2))

2.2.1.16. Wires and Cables

(1) Wires and cables installed in *farm buildings* shall conform to Article 3.1.4.3.

2.2.1.17. Occupant Load

r1 **(1)** If a *floor area* or part of a *floor area* has been designed for an *occupant load* other than that prescribed in Sentence 2.1.2.2.(1) or elsewhere in this Part, a permanent sign indicating that *occupant load* shall be posted in a conspicuous location.

2.2.2. Building Size and Construction Relative to Major Occupancy

2.2.2.1. Farm Buildings with Multiple Agricultural Major Occupancies

(1) In a *farm building* containing more than one *agricultural major occupancy* classified in more than one Division, the *building height* and *building area* of the entire *farm building* shall be used in determining the construction requirements and the fire safety requirements for each of the *major occupancies*.

2.2.2.2. Exceptions in Determining Building Height

(1) The space above a *mezzanine* need not be considered as a *storey*, provided the conditions of Sentence 3.2.1.1.(3), (4), (5) or (7) are met.

(2) Platforms conforming to Sentence 3.2.1.1.(6) need not be considered as a *storey*.

2.2.2.3. Group G, Division 1, up to 3 Storeys, Limited Area, Sprinklered

(1) A *building* classified as Group G, Division 1 is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, provided

(a) the *building* is *sprinklered* throughout,
(b) the *building* is not more than 3 *storeys* in *building height*,
(c) the *building* has a *building area* not more than
  (i) 4 800 m^2, if 1 storey in *building height*,
  (ii) 2 400 m^2, if 2 storeys in *building height*, or
  (iii) 1 600 m^2, if 3 storeys in *building height*,
(d) floor assemblies, including the floor assembly immediately above a *basement*, are *fire separations* with a *fire-resistance rating* not less than 45 min, and
(e) *loadbearing* walls, columns and arches have a *fire-resistance rating* not less than that required for the supported assembly.

2.2.2.4. Group G, Division 1, One Storey

(1) A *building* classified as Group G, Division 1 is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, provided
(a) it is not more than 1 *storey* in *building height*, and
(b) except as provided in Sentence (2), it has a *building area* not more than 2 400 m^2.

(2) Where the *building* referred to in Sentence (1) is a *farm building* housing livestock with a below-floor storage area for *liquid manure*, the *building* is permitted to have a *building area* of any size.

2.2.2.5. Group G, Division 2, Any Height, Any Area, Sprinklered

(1) A *building* classified as Group G, Division 2 of any *building height* or *building area* is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, provided
(a) the *building* is *sprinklered* throughout,
(b) floor assemblies are *fire separations* with a *fire-resistance rating* not less than 45 min, and
(c) *loadbearing* walls, columns and arches have a *fire-resistance rating* not less than that required for the supported assembly.

2.2.2.6. Group G, Division 2, up to 3 Storeys, Any Area

(1) A *building* classified as Group G, Division 2 of any *building area* is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, provided the *building* is not more than 3 *storeys* in *building height*.

2.2.2.7. Group G, Division 3, One Storey, Any Area

(1) A *building* classified as Group G, Division 3 of any *building area* is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, provided the *building* is not more than 1 *storey* in *building height*.

2.2.2.8. Group G, Division 4, Any Height, Any Area

(1) A *building* classified as Group G, Division 4 of any *building height* or *building area* is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination.

2.2.3. Fire Alarm and Detection Systems

2.2.3.1. Determination of Requirement for a Fire Alarm System

(1) A fire alarm system complying with Sentence (2) shall be installed in a *building* that is not *sprinklered* throughout and that
(a) contains a Group G, Division 1 *major occupancy* with an *occupant load* more than 25, or
(b) contains a Group G, Division 2 or 3 *major occupancy*
  (i) with an *occupant load* more than 150,
  (ii) in a *building* more than 1 *storey* in *building height*, or
  (iii) in a *building* with a *basement* used for a purpose other than the housing of service equipment.

(2) Except as otherwise provided in this Section, the fire alarm system required by Sentence (1) shall comply with Articles 3.2.4.2., 3.2.4.4., 3.2.4.5. and 3.2.4.17. and Sentences 3.2.4.9.(1) and (4).

2.2.3.2. Types of Fire Alarm Systems

(1) The fire alarm system required by Sentence 2.2.3.1.(1) shall be
(a) a single-stage system in a Group G, Division 1 *major occupancy*, and
(b) a single- or 2-stage system in a Group G, Division 2 or 3 *major occupancy*.

2.2.3.3. Design of Fire Alarm Systems

(1) Where a fire alarm system is required by Sentence 2.2.3.1.(1),
(a) the air-handling system, where provided, shall be designed to prevent the circulation of smoke upon a signal from a duct-type *smoke detector* if the air-handling system serves more than 1 *storey*, and
(b) a manual station shall be installed in every *floor area* near every *exit*.

2.2.3.4. Fire Alarm Signals

(1) Except as provided in Sentence (3), the fire alarm system required by Sentence 2.2.3.1.(1) shall include
(a) audible signal devices conforming to Sentences 3.2.4.18.(1) to (4), (7) and (11),
(b) an audible *alarm signal* device with a sound pressure level not less than 110 dBA installed on the exterior of the *farm building*, and
(c) visible signal devices installed in any *floor area* in which
  (i) the ambient noise level is more than 87 dBA,
  (ii) the occupants use ear protection devices, or
  (iii) the occupants are located in sound-insulating enclosures.

(2) The visible signal devices required by Clause (1)(c) shall be installed so that the signal from at least one device is visible throughout the *floor area* or portion thereof in which they are installed. (See Note A-3.2.4.19.(3))

(3) The audible *alarm signal* devices referred to in Clauses (1)(a) and (b) need not be provided in areas where animals are present, provided that visible signal devices are installed in accordance with Sentence (2).

2.2.3.5. Silencing of Alarm Signals

(1) The fire alarm system required by Sentence 2.2.3.1.(1) shall
(a) be designed so that when an alarm signal is actuated, it cannot be silenced automatically before a period of time has elapsed that is not less than 20 min, and
(b) not incorporate manual silencing switches other than those installed inside the fire alarm control unit.

2.2.3.6. Electrical Supervision

(1) Where an automatic sprinkler system is provided, it shall be electrically supervised to indicate a supervisory signal on a fire alarm system annunciator or a sprinkler system annunciator for each condition described in Sentence 3.2.4.9.(3).

2.2.3.7. Fire Detectors

(1) Where a fire alarm system is required in a *farm building* in accordance with Sentence 2.2.3.1.(1), *fire detectors* shall be
(a) except as provided in Sentence (2), installed throughout the *farm building*, and
(b) connected to the fire alarm system.

(2) The *fire detectors* referred to in Sentence (1) need not be provided within *floor areas* that are *sprinklered*.

2.2.4. Provisions for Firefighting

2.2.4.1. Fire Department Access to Buildings

(1) Access for fire department equipment shall be provided to each *farm building* by means of a *street*, private roadway or yard.

(2) Where access to a *farm building* as required in Sentence (1) is provided by means of a roadway or yard, the design and location of such roadway or yard shall take into account connection with public thoroughfares, weight of firefighting equipment, width of roadway, radius of curves, overhead clearance, location of fire hydrants, location of fire department connections and vehicular parking.

2.2.4.2. Automatic Sprinkler Systems

(1) Where an automatic sprinkler system is provided, it shall conform to Article 3.2.5.12.

(2) Where a fire pump is installed as part of the automatic sprinkler system referred to in Sentence (1), it shall conform to Article 3.2.5.18.

(3) The automatic sprinkler system referred to in Sentence (1) shall be equipped with waterflow-detecting devices that are

(a) installed in accordance with Sentence 3.2.4.15.(1), and

(b) connected to

  (i) the fire alarm system, where provided, so that, upon its actuation, an *alert signal* or an *alarm signal* is initiated, or

  (ii) an audible signal device, where a fire alarm system is not provided.

2.2.4.3. Portable Fire Extinguishers

(1) Portable extinguishers shall be provided and installed in accordance with the provisions of Part 6 of Division B of the Fire Code made under the *Fire Protection and Prevention Act, 1997*.

2.2.5. Emergency Lighting

2.2.5.1. Minimum Lighting Requirements

(1) Where lighting is provided in a *farm building*, emergency lighting shall be provided to an average level of illumination not less than 10 lx at floor or tread level in

(a) *exits*, and

(b) principal routes providing *access to exit* in open *floor areas* and in *service rooms.*

(2) The minimum value of the illumination required by Sentence (1) shall be 1 lx.

e1 **(3)** An emergency power supply shall be

(a) provided to maintain the emergency lighting required by Sentence (1) from a power source such as batteries or generators that will continue to supply power in the event that the regular power supply to the *farm building* is interrupted, and

(b) designed and installed such that, upon failure of the regular power, it will assume the electrical load automatically for a period of 30 min.

Part 3

Fire Protection, Occupant Safety and Accessibility

Part 3

Fire Protection, Occupant Safety and Accessibility (See Note A-3)

Section 3.1. General

3.1.1. Scope and Definitions

3.1.1.1. Scope

(1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A.

3.1.1.2. Defined Words

(1) Words that appear in italics are defined in Article 1.4.1.2. of Division A.

3.1.1.3. Reserved

3.1.1.4. Reserved

3.1.1.5. Radon

(1) In addition to all other requirements, a *building* in the following designated areas shall be designed and constructed so that the annual average concentration of radon 222 does not exceed 200 Bq/m^3 of air and the annual average concentration of the short lived daughters of radon 222 does not exceed 0.02 working levels inside the *building*:
(a) the City of Elliot Lake in the Territorial District of Algoma,
(b) the Township of Faraday in the County of Hastings, and
(c) the geographic Township of Hyman in the Territorial District of Sudbury.

3.1.1.6. Building in Flood Plains

(1) *Buildings* constructed on flood plains shall
(a) be designed and constructed in accordance with good engineering practice to withstand anticipated vertical and horizontal hydrostatic pressures acting on the structure, and
(b) incorporate floodproofing measures that will preserve the integrity of *exits* and *means of egress* during times of flooding.

3.1.2. Classification of Buildings or Parts of Buildings by Major Occupancy (See Note A-3.1.2.)

3.1.2.1. Classification of Buildings

(1) Except as permitted by Articles 3.1.2.3. to 3.1.2.7., every *building* or part thereof shall be classified according to its *major occupancy* as belonging to one of the Groups or Divisions described in Table 3.1.2.1. (See Note A-3.1.2.1.(1))

(2) A *building* intended for use by more than one *major occupancy* shall be classified according to all *major occupancies* for which it is used or intended to be used.

Table 3.1.2.1.
Major Occupancy Classification
Forming Part of Sentences 3.1.2.1.(1), 3.1.2.2.(1) and 3.11.2.1.(3)

Group	Division	Description of *Major Occupancies*
A	1	*Assembly occupancies* intended for the production and viewing of the performing arts
A	2	*Assembly occupancies* not elsewhere classified in Group A
A	3	*Assembly occupancies* of the arena type
A	4	*Assembly occupancies* in which occupants are gathered in the open air
B	1	*Detention occupancies*
B	2	*Care and treatment occupancies*
B	3	*Care occupancies*
C	---	*Residential occupancies*
D	---	*Business and personal services occupancies*
E	---	*Mercantile occupancies*
F	1	*High-hazard industrial occupancies*
F	2	*Medium-hazard industrial occupancies*
F	3	*Low-hazard industrial occupancies*

3.1.2.2. Occupancies of the Same Classification

(1) Any *building* is deemed to be occupied by a single *major occupancy*, notwithstanding its use for more than one *major occupancy*, provided that all *occupancies* are classified as belonging to the same Group classification or, where the Group is divided into Divisions, as belonging to the same Division classification described in Table 3.1.2.1.

3.1.2.3. Arena-Type Buildings

e1 **(1)** An arena-type *building* intended for occasional use for trade shows and similar exhibition purposes shall be classified as Group A, Division 3 *occupancy*.

3.1.2.4. Police Stations

(1) A police station with detention quarters is permitted to be classified as a Group B, Division 2 *major occupancy* provided the station is not more than 1 *storey* in *building height* and 600 m^2 in *building area*.

3.1.2.5. Group B, Division 3 Occupancies

(1) Group B, Division 3 *occupancies* are permitted to be classified as Group C *major occupancies* within the application of Part 3 provided

(a) the occupants live as a single housekeeping unit in a *suite* with sleeping accommodation for not more than 10 persons, and

(b) not more than two occupants require assistance in evacuation in case of an emergency.

3.1.2.6. Storage of Combustible Fibres

(1) *Buildings* or parts of thereof used for the storage of baled *combustible fibres* shall be classified as *medium-hazard industrial occupancies*.

3.1.2.7. Restaurants

(1) A restaurant is permitted to be classified as a Group E *major occupancy* within the application of Part 3 provided the restaurant is designed to accommodate not more than 30 persons consuming food or drink.

3.1.3. Multiple Occupancy Requirements

3.1.3.1. Separation of Major Occupancies

(1) Except as permitted by Sentences (2) and (3), *major occupancies* shall be separated from adjoining *major occupancies* by *fire separations* having *fire-resistance ratings* conforming to Table 3.1.3.1.

(2) In a *building* not more than 3 *storeys* in *building height*, if not more than two *dwelling units* are contained together with a Group E *major occupancy*, the *fire-resistance rating* of the *fire separation* between the two *major occupancies* need not be more than 1 h.

(3) In a *building* conforming to the requirements of Articles 3.2.8.2. to 3.2.8.8., the requirements of Sentence (1) for *fire separations* between *major occupancies* do not apply at the vertical plane around the perimeter of an opening through the horizontal *fire separation.*

r1

Table 3.1.3.1.
Major Occupancy Fire Separations(1)
Forming Part of Sentence 3.1.3.1.(1)

Major Occupancy	Minimum *Fire-Resistance Rating* of *Fire Separation*, h												
	Adjoining *Major Occupancy*												
	A-1	A-2	A-3	A-4	B-1	B-2	B-3	C	D	E	F-1	F-2	F-3
A-1	—	1	1	1	2	2	2	1	1	2	(2)	2	1
A-2	1	—	1	1	2	2	2	1(3)	1(4)	2	(2)	2	1
A-3	1	1	—	1	2	2	2	1	1	2	(2)	2	1
A-4	1	1	1	—	2	2	2	1	1	2	(2)	2	1
B-1	2	2	2	2	—	2	2	2	2	2	(2)	2	2
B-2	2	2	2	2	2	—	1	2	2	2	(2)	2	2
B-3	2	2	2	2	2	1	—	2	2	2	(2)	2	2
C	1	1(3)	1	1	2	2	2	—	1	2(5)	(2)	2(6)	1
D	1	1(4)	1	1	2	2	2	1	—	—	3	—	—
E	2	2	2	2	2	2	2	2(5)	—	—	3	—	—
F-1	(2)	(2)	(2)	(2)	(2)	(2)	(2)	(2)	3	3	—	2	2
F-2	2	2	2	2	2	2	2	2(6)	—	—	2	—	—
F-3	1	1	1	1	2	2	2	1	—	—	2	—	—

r1 **Notes to Table 3.1.3.1.:**

(1) Section 3.3. contains requirements for the separation of *occupancies* and tenancies that are in addition to the requirements for the separation of *major occupancies*.

(2) See Sentence 3.1.3.2.(1).

(3) Where the *building* or part thereof is constructed in accordance with Article 3.2.2.51., a *fire separation* with a 2 h *fire-resistance rating* is required between the Group C and Group A, Division 2 *major occupancies*.

(4) Where the *building* or part thereof is constructed in accordance with Article 3.2.2.60., a *fire separation* with a 2 h *fire-resistance rating* is required between the Group D and Group A, Division 2 *major occupancies*.

(5) See Sentence 3.1.3.1.(2).

(6) See Sentence 3.1.3.2.(2).

3.1.3.2. Prohibition of Occupancy Combinations

(1) No *major occupancy* of Group F, Division 1 shall be contained within a *building* with any *occupancy* classified as Group A, B or C.

(2) Except as provided in Sentence (4) and Sentence 3.10.2.4.(9), not more than one *suite* of *residential occupancy* shall be contained within a *building* classified as a Group F, Division 2 *major occupancy*.

(3) A sleeping room or sleeping area shall not open directly into a room or area where food is intended to be stored, prepared, processed, distributed, served, sold or offered for sale. (See Note A-3.1.3.2.(3))

(3) Adhesives used in structural mass timber elements referred to in Sentence (1) that are constructed of cross-laminated timber shall conform to the elevated temperature performance requirements in ANSI/APA PRG 320, "Standard for Performance-Rated Cross-Laminated Timber."

(4) Concealed spaces are permitted within structural mass timber elements referred to in Sentence (2) and need not conform to Sentence 3.1.6.4.(1) provided the concealed spaces are,

(a) *sprinklered* and divided into compartments by *fire blocks* in conformance with Subsection 3.1.11.,
(b) completely filled with rock or slag fibre insulation conforming to CAN/ULC-S702.1 "Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification," and having a density not less than 32 kg/m^3,
(c) if horizontal, lined with not less than a single layer of 12.7 mm thick Type X gypsum board or *noncombustible* material providing an *encapsulation rating* of not less than 25 min, or
(d) if vertical, lined with not less than a single layer of 12.7 mm thick Type X gypsum board or *noncombustible* material providing an *encapsulation rating* of not less than 25 min and vertically divided into compartments by *fire blocks* in conformance with Subsection 3.1.11.

Table 3.1.6.3.
Minimum Dimensions of Structural Mass Timber Elements in Encapsulated Mass Timber Construction
Forming Part of Sentences 3.1.6.3.(2), 3.1.6.8.(1) and 3.1.6.17.(1)

Structural Wood Elements	Minimum Thickness, mm	Minimum Width x Depth, mm x mm
Walls that are not *fire separations* or exterior walls (1-sided fire exposure)	96	—
Walls that require a *fire-resistance rating*, but are not *fire separations* (2-sided fire exposure)	192	—
Floors(1) and roofs (1-sided fire exposure)	96	—
Beams, columns and arches (2- or 3-sided fire exposure)	—	192 x 192
Beams, columns and arches (4-sided fire exposure)	—	224 x 224

Notes to Table 3.1.6.3.:
(1) The minimum dimensions for floor assemblies are also applicable to *mezzanines* and exterior balconies.

3.1.6.4. Encapsulation of Mass Timber Elements (See Note A-3.1.6.3.)

r1 **(1)** Except as provided in Sentences (3) to (9), 3.1.6.3.(4), 3.1.6.16.(2) and 3.1.6.17.(2), and Articles 3.1.6.7. and 3.1.6.12., the exposed surfaces of structural mass timber elements conforming to Article 3.1.6.3. shall be protected from adjacent spaces in the *building*, including adjacent concealed spaces within wall, floor and roof assemblies, by a material or assembly of materials conforming to Sentence (2) that provides an *encapsulation rating* that

(a) is not less than 50 min in a *building* or part thereof constructed in conformance with Article 3.2.2.48. or 3.2.2.57., or
(b) conforms to the minimum values stated in Table 3.2.2.93. for the applicable *major occupancy* and *building height*.
(See Note A-3.1.6.4.(1))

(2) Except as provided in Sentence 3.1.6.11.(1), the material or assembly of materials referred to Sentence (1) shall consist of

(a) gypsum board,
(b) gypsum concrete,
(c) *noncombustible* materials,
(d) materials that conform to Sentences 3.1.5.1.(2) to (4), or
(e) any combination of materials listed in Clauses (a) to (d).

r1 **(3)** Except as provided in Sentences (5) and (7), the exposed surfaces of mass timber beams, columns and arches within a *suite* or *fire compartment* in a *building* or part thereof constructed in conformance with Article 3.2.2.48. or 3.2.2.57. or permitted by Article 3.2.2.93. to have a 50 min *encapsulation rating* need not be protected in accordance with Sentence (1), provided

(a) their aggregate exposed surface area does not exceed 35% of the total wall area of the perimeter of the *suite* or *fire compartment* in which they are located, and

(b) the *flame-spread rating* on any exposed surface is not more than 150.

(See Note A-3.1.6.4.(3) to (8))

r1 **(4)** Except as provided in Sentences (5) to (7), the exposed surfaces of mass timber walls within a *suite* in a *building* or part threreof constructed in conformance with Article 3.2.2.48. or 3.2.2.57. or permitted by Article 3.2.2.93. to have a 50 min *encapsulation rating* need not be protected in accordance with Sentence (1), provided

(a) all portions of the exposed surfaces,

(i) face the same direction, or

(ii) are separated by a horizonal distance of not less than 4.5 m, and

(b) the *flame-spread rating* on any exposed surface is not more than 150.

(See Notes A-3.1.6.4.(4) and A-3.1.6.4.(3) to (8))

r1 **(5)** Except as provided in Sentence (7), the aggregate exposed surface area of mass timber elements within a *suite* permitted in Sentences (3) and (4) shall not exceed 35% of the total wall area of the perimeter of the *suite*. (See Note A-3.1.6.4.(3) to (8))

r1 **(6)** Except as provided in Sentence (7), the exposed surfaces of mass timber ceilings within a *suite* or *fire compartment*, other than an *exit* and *public corridor*, in a *building* or part thereof constructed in conformance with Article 3.2.2.48. or 3.2.2.57. or permitted by Article 3.2.2.93. to have a 50 min *encapsulation rating* need not be protected in accordance with Sentence (1), provided the aggregate surface area does not exceed

(a) 10% of the total ceiling area of the *suite* or *fire compartment*, where the *flame-spread rating* on any exposed surface is not more than 150, or

(b) 25% of the total ceiling area of the *suite* or *fire compartment*, where the *flame-spread rating* on any exposed surface of a mass timber wall or ceiling is not more than 75.

(See Note A-3.1.6.4.(3) to (8))

r1 **(7)** The exposed surfaces of mass timber ceilings within a *suite* in a *building* or part thereof constructed in conformance with Article 3.2.2.48. or 3.2.2.57. or permitted by Article 3.2.2.93. to have a 50 min *encapsulation rating* need not be protected in accordance with Sentence (1) or (6), provided

(a) the aggregate surface area of any exposed mass timber beams, columns and arches does not exceed 20% of the total wall area of the perimeter of the *suite* in which they are located,

(b) all surface of the mass timber walls are,

(i) protected in accordance with Sentence (1), or

(ii) mass timber walls that are not otherwise permitted to be exposed in accordance with Sentence (5) are protected by a material or assembly of materials conforming to Sentence (2) that provides an *encapsulation rating* of not less than 80 min, and

(c) the *flame spread rating* on any exposed mass timber wall or ceiling is not more than 75.

(See Note A-3.1.6.4.(3) to (8))

r1 **(8)** Structural mass timber elements in a *building* or part thereof permitted by Article 3.2.2.93. to have a 0 min *encapsulation rating* need not be protected in accordance with Sentence (1), provided

(a) mass timber walls and ceilings within *vertical service spaces*, *public corridors*, and *exits* are protected on the interior side with a material or assembly of materials conforming to Sentence (2) that provides an *encapsulation rating* of not less than 25 min, and

(b) concealed spaces are protected in conformance with Sentence 3.1.6.3.(4).

(See Note A-3.1.6.4.(3) to (8))

(9) In a *building* or part thereof required by Clause 3.1.6.4.(1)(b) to have a minimum *encapsulation rating* of 70 min, the upper side of a mass timber floor or roof assembly is permitted to be encapsulated by a material or assembly of materials conforming to Sentence 3.1.6.4.(2) that provides an *encapsulation rating* of 50 min.

3.1.6.5. Determination of Encapsulation Ratings

(1) Except as provided in Article 3.1.6.6., the rating of a material or assembly of materials that is required to have an *encapsulation rating* shall be determined on the basis of the results of the tests conducted in conformance with CAN/ULC-S146, "Standard Method of Test for the Evaluation of Encapsulation Materials and Assemblies of Materials for the Protection of Structural Timber Elements."

3.1.6.6. Encapsulation Materials (See Note A-3.1.6.6.)

(1) Gypsum-concrete topping and concrete not less than 38 mm thick are deemed to have an *encapsulation rating* of 50 min when installed on the upper side of a mass timber floor or roof assembly.

r1 **(2)** One layer of Type X gypsum board conforming to ASTM C1396/C1396M, "Standard Specification for Gypsum Board," or CAN/CSA-A82.27-M, "Gypsum Board," not less than 12.7 mm thick, are deemed to have an *encapsulation rating* of 25 min when installed on a mass timber element in accordance with Sentence (6).

r1 **(3)** Two layers of Type X gypsum board conforming to ASTM C1396/C1396M, "Standard Specification for Gypsum Board," or CAN/CSA-A82.27-M, "Gypsum Board," each not less than 12.7 mm thick, are deemed to have an *encapsulation rating* of 50 min when installed on a mass timber element in accordance with Sentence (6).

r1 **(4)** Two layers of Type X gypsum board conforming to ASTM C1396/C1396M, "Standard Specification for Gypsum Board," or CAN/CSA-A82.27-M, "Gypsum Board," each not less than 15.9 mm thick, are deemed to have an *encapsulation rating* of 70 min when installed on a mass timber element in accordance with Sentence (6).

r1 **(5)** Three layers of Type X gypsum board conforming to ASTM C1396/C1396M, "Standard Specification for Gypsum Board," or CAN/CSA-A82.27-M, "Gypsum Board," each not less than 12.7 mm thick, are deemed to have an *encapsulation rating* of 80 min when installed on a mass timber element in accordance with Sentence (6).

r1 **(6)** The gypsum board described in Sentences (2) to (5) shall be

(a) fastened with a minimum of two rows of screws in each layer
   (i) directly to the mass timber element with screws of sufficient length to penetrate not less than 20 mm into the mass timber element that are spaced not more than 400 mm o.c. and 20 mm to 38 mm from the boards' edges, or
   (ii) to wood furring or resilient metal or steel furring channels not more than 25 mm thick spaced not more than 400 mm o.c. on the mass timber element,
(b) for multiple layer systems, installed with the joints in each layer staggered from those in the adjacent layer, and
(c) installed in conformance with ASTM C840, "Standard Specification for Application and Finishing of Gypsum Board," except that, for multiple layer systems, their joints need not be taped and finished.

(See Note A-3.1.6.6.(6))

3.1.6.7. Combustible Roofing Materials

(1) Wood roof sheathing and roof sheathing supports that do not conform to Articles 3.1.6.3. and 3.1.6.4. are permitted in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided they are installed

(a) above a concrete deck in accordance with Sentence 3.1.5.3.(2), or
(b) above a deck of *encapsulated mass timber construction*, where
   (i) said deck is permitted to be encapsulated between the roof sheathing supports by a material or assembly of materials conforming to Sentence 3.1.6.4.(2) that provides an *encapsulation rating* of not less than 50 min,
   (ii) the height of the roof space is not more than 1 m,
   (iii) the roof space is divided into compartments by *fire blocks* in conformance with Article 3.1.11.5.,
   (iv) openings through the deck other than for *noncombustible* roof drains and plumbing piping are protected by shafts constructed as *fire separations* having a *fire-resistance rating* not less than 1 h that extend from the deck to not less than 150 mm above the adjacent sheathing, and
   (v) except as permitted by Subclause (b)(iv), the roof space does not contain any *building* services.

(2) *Combustible* cant strips, roof curbs, nailing strips and similar components used in the installation of roofing are permitted on a *building* or part of a *building* permitted to be of *encapsulated mass timber construction.*

(3) Wood nailer facings to parapets that are not more than 610 mm high are permitted on a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided the facings and any roof membranes covering the facings are protected by sheet metal.

3.1.6.8. Combustible Window Sashes and Frames

(1) *Combustible* window sashes and frames are permitted in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided

(a) each window in an exterior wall face is an individual unit separated from every other opening in the wall by *noncombustible* wall construction or mass timber wall construction conforming to the dimensions stated in Table 3.1.6.3.,
(b) windows in exterior walls in contiguous *storeys* are separated by not less than 1 m of *noncombustible* wall construction or mass timber wall construction conforming to the dimensions stated in Table 3.1.6.3., and
(c) the aggregate area of openings in an exterior wall face of a *fire compartment* is not more than 40% of the area of the wall face.

r1 3.1.6.9. Exterior Cladding

(1) Except as provided in Sentences (2) to (5) and (8), cladding on an exterior wall assembly of a *building* or part thereof permitted to be of *encapsulated mass timber construction* shall be

(a) *noncombustible*,
(b) a material or combination of materials that satisfy the criteria of Sentence 3.1.5.1.(2),
(c) except as provided in Sentence (6), a wall assembly that satisfies the criteria of Clause 3.1.5.5.(1)(b), or
(d) a combination of the cladding described in Clauses (a) to (c).

(See Note A-3.1.6.9.(1), (2), (4) and (5))

(2) Except as provided in Sentences (3) to (5) and (7), cladding on an exterior wall assembly of a *building* or part thereof permitted to be of *encapsulated mass timber construction* that is not more than 12 *storeys* in *building height* is permitted to consist of

(a) *combustible* cladding that
  (i) is not contiguous over more than 4 *storeys*,
  (ii) represents not more than 10% of the cladding on each exterior wall of each *storey*,
  (iii) is not more than 1.2 m in width,
  (iv) has a *flame-spread rating* not more than 75 on any exposed surface, or any surface that would by exposed by cutting through the material in any direction,
  (v) is separated from other portions of *combustible* cladding on adjacent *storeys* by a horizontal distance of not less than 2.4 m, and
  (vi) is separated from other portions of *combustible* cladding by a horizontal distance of not less than 1.2 m,
(b) *combustible* cladding that
  (i) is not contiguous across adjacent *storeys*,
  (ii) represents not more than 10% of the cladding on each exterior wall of each *storey*,
  (iii) has a *flame-spread rating* not more than 75 on any exposed surface, or any surface that would be exposed by cutting through the material in any direction, and
  (iv) is separated from other portions of *combustible* cladding on adjacent *storeys* by a horizontal distance of not less than 2.4 m,
(c) *combustible* cladding representing up to 100% of the cladding on exterior walls of the *first storey*, provided all portions of the cladding can be directly accessed and are located not more than 15 m from a *street* or access route conforming to Article 3.2.5.6., measured horizontally from the face of the *building*, or
(d) a combination of cladding described in Sentence (1) and the cladding described in Clauses (a) to (c).

(See Note A-3.1.6.9.(1), (2), (4) and (5))

(3) The permitted area of *combustible* cladding referred to in Clause (2)(a) or (b) shall not exceed 5% of the cladding on each exterior wall of each *storey* where firefighting facilities cannot reach the *building* within 10 min of the alarm being received.

(4) Except as provided in Sentences (5) and (7), cladding on an exterior wall assembly of a *building* or part thereof permitted to be of *encapsulated mass timber construction* that is not more than 6 *storeys* in *building height* is permitted to consist of

(a) *combustible* cladding that
  (i) represents not more than 10% of the cladding on each exterior wall of each *storey*, and
  (ii) has a *flame-spread rating* not more than 75 on any exposed surface, or any surface that would be exposed by cutting through the material in any direction, or

(b) a combination of the cladding described in Clause (a) and the cladding described in Sentence (1) and Clause (2)(c).

(See Note A-3.1.6.9.(1), (2), (4) and (5))

(5) Except as provided in Sentence (7), cladding on an exterior wall assembly of a *building* or part thereof permitted to be of *encapsulated mass timber construction* and not more than 4 *storeys* in *building heig*ht is permitted to consist of *combustible* material with a *flame-spread rating* not more than 75 on any exposed surface, or any surface that would be exposed by cutting through the material in any direction. (See Note A-3.1.6.9.(1), (2), (4) and (5).)

(6) An exterior wall assembly constructed in conformance with Section 6 of MMAH Supplementary Standard SB-2, "Fire Performance Ratings" is deemed to satisfy the criteria of Clause (1)(c).

(7) Except as provided in Article 3.2.3.10., where the *limiting distance* in Table 3.2.3.1.-D or Table 3.2.3.1.-E permits an area of *unprotected openings* of not more than 10% of the *exposing building face*, the construction requirements of Table 3.2.3.7. shall be met.

(8) A wall assembly conforming to Clause (1)(c) that includes *combustible* cladding made of *fire-retardant-treated wood* shall be tested for fire exposure after the cladding has been subjected to the accelerated weathering test specified in ASTM D2898, "Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing,"

(9) Where *combustible* cladding conforming to Clauses (2)(a), (b) or (4)(a) on an exterior wall of a *fire compartment* is exposed to *combustible* cladding conforming to Clause (2)(a), (b) or (4)(b) on an exterior wall of the same *fire compartment* or of another *fire compartment*, and the planes of the two walls are parallel or at an angle less than 135° measured from the exterior of the *building*, the different portions of *combustible* cladding shall

(a) be separated by a horizontal distance of not less than 3 m, and
(b) not be contiguous over more than 2 *storeys*.

3.1.6.10. Combustible Components in Exterior Walls

r1 **(1)** Except as provided in Sentence (2), *combustible* components, other than those permitted by Article 3.1.6.9., are permitted to be used in an exterior wall assembly of a *building* or part thereof permitted to be of *encapsulated mass timber construction* provided the wall assembly satisfies the criteria described in Clause 3.1.5.5.(1)(b).

(2) An exterior wall assembly constructed in conformance with Section 6 in MMAH Supplementary Standard SB-2, "Fire Performance Ratings" is deemed to satisfy the criteria of Sentence (1).

(3) Non-*loadbearing* wood elements permitted in Article 3.1.5.6. need not conform to Article 3.1.6.3. in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*.

3.1.6.11. Nailing Elements

(1) Wood nailing elements are permitted to be used for the attachment of a material or assembly of materials to provide an *encapsulation rating* in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided the concealed space created by the wood nailing elements is not more than 25 mm deep.

(2) Except as permitted by Sentence 3.1.6.16.(2) and Article 3.1.6.6., wood nailing elements are permitted to be used for the attachment of interior finishes in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided the concealed space created by the wood nailing elements is not more than 50 mm deep and

(a) exposed surfaces in the concealed space have a *flame-spread rating* not more than 25, or

(b) the concealed space is filled with *noncombustible* insulation.

3.1.6.12. Combustible Flooring Elements

(1) Wood members that are more than 50 mm but not more than 300 mm high are permitted to be used for the construction of a raised platform in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, and they need not conform to Articles 3.1.6.3. and 3.1.6.4., provided

(a) the concealed spaces created by the wood members are divided into compartments by *fire blocks* in conformance with Sentence 3.1.11.3.(4), and

(b) the wood members are

  (i) applied directly to or set into a *noncombustible* floor slab, or

  (ii) applied directly to a mass timber floor assembly that conforms to the requirements of Article 3.1.6.3.

(2) The upper surface of the mass timber floor assembly referred to in Subclause (1)(b)(ii) is permitted to be encapsulated only between the wood members by a material or assembly of materials conforming to Sentences 3.1.6.4.(1) and (2).

(3) The floor system for the raised platform referred to in Sentence (1) is permitted to include a *combustible* subfloor and *combustible* finished flooring.

3.1.6.13. Combustible Stairs

(1) Wood stairs and landings conforming to the requirements for floor assemblies in Article 3.1.6.3. and Sentences 3.1.6.4.(1) and (2) are permitted in an *exit* stairwell in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*.

(2) Wood stairs in a *suite* in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction* need not conform to Articles 3.1.6.3. and 3.1.6.4.

3.1.6.14. Combustible Interior Finishes

(1) Except as provided in Sentences (2) and (3), *combustible* interior wall and ceiling finishes referred to in Clause 3.1.13.1.(2)(b) that are not more than 1 mm thick are permitted in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*.

r1 **(2)** Except as provided in Sentences 3.1.6.4.(3), (4), (7) and (8), *combustible* interior wall finishes, other than foamed plastics, that are not more than 25 mm thick are permitted in a *building* or part thereof permitted to be of *encapsulated mass timber construction*, provided they have a *flame-spread rating* not more than 150 on any exposed surface or any surface that would be exposed by cutting through the material in any direction.

r1 **(3)** Except as provided in Sentences (4) and 3.1.6.4.(3), (6), (7) and (8), *combustible* interior ceiling finishes, other than foamed plastics, that are not more than 25 mm thick are permitted in a *building* or part thereof permitted to be of *encapsulated mass timber construction*, provided they have a *flame-spread rating* not more than 25 on any exposed surface, or any surface that would be exposed by cutting through the material in any direction, except that not more than 10% of the ceiling area within each *fire compartment* is permitted to have a *flame-spread rating* not more than 150. (See Note A-3.1.11.3.(3))

(4) *Combustible* interior ceiling finishes made of *fire-retardant-treated wood* are permitted in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided they are not more than 25 mm thick or are exposed *fire-retardant-treated wood* battens.

3.1.6.15. Combustible Elements in Partitions

(1) Solid lumber *partitions* not less than 38 mm thick and *partitions* containing wood framing that do not conform to Article 3.1.6.3. are permitted in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, provided the *partitions* are

(a) protected on each face with not less than
  (i) a single layer of 12.7 mm thick Type X gypsum board, with all joints either backed or taped and filled, conforming to ASTM C1396 / C1396M, "Standard Specification for Gypsum Board," or CAN/CSA-A82.27-M, "Gypsum Board,"
  (ii) a single layer of 19 mm thick *fire-retardant-treated wood*, on solid lumber *partitions*, or
  (iii) a single layer of 19 mm thick *fire-retardant-treated wood*, on *partitions* containing wood framing, with wood stud cavities filled with *noncombustible* insulation, and
(b) not installed as enclosures for *exits* or *vertical service spaces*.

3.1.6.16. Exposed Construction Materials and Components in Concealed Spaces

(1) Except as provided in Sentence (2) and Article 3.1.11.7., and except as otherwise provided in this Subsection, only construction materials and components permitted in *noncombustible construction* shall be permitted to have exposed surfaces in concealed spaces within floor, roof and wall assemblies permitted in a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*.

(2) Exposed surfaces are permitted in a concealed space created by the attachment of a material or assembly of materials conforming to Sentence 3.1.6.4.(1), provided the concealed space is not more than 25 mm deep.

3.1.6.17. Penetration by Outlet Boxes

(1) The minimum dimensions stated in Table 3.1.6.3. need not apply at cutouts in vertical or horizontal structural mass timber elements where outlet boxes are installed in accordance with Article 3.1.9.3. (See also Note A-3.1.9.2.(1))

(2) The exposed surfaces of the cutouts described in Sentence (1) need not be protected in accordance with Sentence 3.1.6.4.(1).

(3) Outlet boxes on opposite sides of a structural mass timber element having a *fire-resistance rating* shall be separated by a distance of not less than 600 mm.

3.1.7. Fire-Resistance Ratings

3.1.7.1. Determination of Ratings

(1) Except as permitted by Sentence (2) and Articles 3.1.7.2. and 3.6.3.5., the rating of a material, assembly of materials or a structural member that is required to have a *fire-resistance rating*, shall be determined on the basis of the results of tests conducted in conformance with CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

(2) A material, assembly of materials or a structural member is permitted to be assigned a *fire-resistance rating* on the basis of MMAH Supplementary Standard SB-2, "Fire Performance Ratings."

3.1.7.2. Exception for Exterior Walls

(1) The limit on the rise of temperature on the unexposed surface of an assembly as required by the tests referred to in Sentence 3.1.7.1.(1) shall not apply to an exterior wall that has a *limiting distance* of 1.2 m or more, provided correction is made for radiation from the unexposed surface in accordance with Sentence 3.2.3.1.(9).

3.1.7.3. Exposure Conditions for Rating

(1) Floor, roof and ceiling assemblies shall be rated for exposure to fire on the underside.

(2) *Firewalls* and interior vertical *fire separations* shall be rated for exposure to fire on each side.

(3) Exterior walls shall be rated for exposure to fire from inside the *building*.

3.1.7.4. Minimum Fire-Resistance Rating

(1) The use of materials or assemblies having a greater *fire-resistance rating* than required shall impose no obligation to exceed in whole or in part the minimum *fire-resistance ratings* required by this Part.

3.1.7.5. Rating of Supporting Construction

r1 **(1)** Except as permitted by Sentence (2) and by Articles 3.2.2.20. to 3.2.2.93. for mixed types of construction, all *loadbearing* walls, columns and arches in the *storey* immediately below a floor or roof assembly required to have a *fire-resistance rating* shall have a *fire-resistance rating* not less than that required for the supported floor or roof assembly.

(2) *Loadbearing* walls, columns and arches supporting a *service room* or *service space* need not conform to Sentence (1).

(3) Except as provided in Sentence (4) and except for *noncombustible* roof assemblies required by Clauses 3.2.2.51.(2)(c) and 3.2.2.60.(2)(c), if an assembly is required to be of *noncombustible construction* and have a *fire-resistance rating*, it shall be supported by *noncombustible construction*.

(4) Except for portions of a *building* constructed in accordance with Article 3.2.2.7. that are required to be of *noncombustible construction*, assemblies of *noncombustible construction* in *buildings* or portions of *buildings* permitted to be of *encapsulated mass timber construction* are permitted to be supported by *encapsulated mass timber construction.*

3.1.8. Fire Separations and Closures

3.1.8.1. General Requirements

(1) Any wall, *partition* or floor assembly required to be a *fire separation* shall
(a) except as permitted by Sentence (2), be constructed as a continuous element in conformance with Article 3.1.8.3., and
(b) as required in this Part, have a *fire-resistance rating* as specified. (See Note A-3.1.8.1.(1)(b))

(2) Openings in a *fire separation* shall be protected with *closures*, shafts or other means in conformance with Articles 3.1.8.4. to 3.1.8.20. and Subsections 3.1.9. and 3.2.8. (See Note A-3.1.8.1.(2))

3.1.8.2. Combustible Construction Support

(1) *Combustible construction* that abuts on or is supported by a *noncombustible fire separation* shall be constructed so that its collapse under fire conditions will not cause the collapse of the *fire separation*.

3.1.8.3. Continuity of Fire Separations

(1) Except as permitted by Sentence 3.6.4.2.(2), a *horizontal service space* or other concealed space located above a required vertical *fire separation*, including the walls of a vertical shaft, shall be divided at the *fire separation* by an equivalent *fire separation* within the *service space*.

(2) Except as provided in Sentence (5), the continuity of a *fire separation* having a *fire-resistance rating* that abuts another *fire separation*, a floor, a ceiling, or a roof shall be maintained by a *firestop* conforming to Sentence (3). (See Note A-3.1.8.3.(2))

(3) The *firestop* required in Sentence (2) shall have an FT rating not less than the *fire-resistance rating* of the abutting *fire separation* when subjected to the fire test method in CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

(4) Except as provided in Sentence (5), joints located in a horizontal plane between a floor and an exterior wall shall be sealed by a *firestop* that, when subjected to the fire test method in ASTM E2307, "Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-storey Test Apparatus," has an F rating not less than the *fire-resistance rating* of the horizontal *fire separation*.

(5) Joints between ceilings and walls, between floors and walls, and between walls at corners need not comply with Sentences (2) and (4) where such joints consist of gypsum board that is attached to framing members and arranged so as to restrict the passage of flame and smoke through the joints. (See Note A-3.1.8.3.(5))

3.1.8.4. Determination of Ratings and Classifications

(1) Except as permitted by Sentences (2) and 3.1.8.16.(1), the *fire-protection rating* of a *closure* shall be determined in accordance with
(a) CAN/ULC-S104, "Standard Method for Fire Tests of Door Assemblies,"
(b) CAN/ULC-S106, "Standard Method for Fire Tests of Window and Glass Block Assemblies," or
(c) CAN/ULC-S112, "Standard Method for Fire Test of Fire Damper Assemblies."
(See Articles 3.1.8.17. to 3.1.8.19. for additional requirements for *closures*.)

(2) Except as permitted by Sentence 3.1.8.12.(1), the *fire-protection rating* of a *closure* shall conform to Table 3.1.8.4. for the required *fire-resistance rating* of the *fire separation*.

(3) The leakage rate of smoke dampers and combination smoke/*fire dampers* shall
(a) be determined in accordance with the applicable provisions in CAN/ULC-S112.1, "Standard for Leakage Rated Dampers for Use in Smoke Control Systems," and
(b) conform to Class I, II or III of that standard.

(4) The leakage rate of a door assembly shall be determined in accordance with ANSI/UL-1784, "Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives."

Table 3.1.8.4.
Fire-Protection Rating of Closures
Forming Part of Sentence 3.1.8.4.(2)

Fire-Resistance Rating of *Fire Separation*	Minimum *Fire-Protection Rating* of *Closure*
30 min	20 min
45 min	45 min
1 h	45 min
1.5 h	1 h
2 h	1.5 h
3 h	2 h
4 h	3 h

(b) not more than 300 m^2 in area with no dimension more than 20 m, if the exposed construction materials within the space have a *flame-spread rating* more than 25.

(See Note A-3.1.11.5.(1))

(2) A concealed space in an exterior cornice, a mansard style roof, a balcony or a *canopy* in which exposed construction materials within the space have a *flame-spread rating* more than 25, shall be separated by construction conforming to Article 3.1.11.7.

(a) at locations where the concealed space extends across the ends of required vertical *fire separations*, and

(b) so that the maximum dimension in the concealed space is not more than 20 m.

(3) Except as provided by Sentence (5), in *buildings* or parts thereof conforming to Article 3.2.2.51. or 3.2.2.60., horizontal concealed spaces within a floor assembly or roof assembly of *combustible construction* shall be separated by construction conforming to Article 3.1.11.7. into compartments that are

(a) not more than 600 m^2 in area with no dimension more than 60 m, if the exposed construction materials within the space have a *flame-spread rating* not more than 25, and

(b) not more than 300 m^2 in area with no dimension more than 20 m, if the exposed construction materials within the space have a *flame-spread rating* more than 25.

(See Note A-3.1.11.5.(3) and (4))

r1 **(4)** Except for crawl spaces conforming to Sentence 3.1.11.6.(1) and except as provided in Sentence (5), in *buildings* or parts thereof conforming to Article 3.2.2.48., 3.2.2.57. or 3.2.2.93., horizontal concealed spaces within a floor assembly or roof assembly of *encapsulated mass timber construction* shall be separated by construction conforming to Article 3.1.11.7. into compartments that are

(a) not more than 600 m^2 in area with no dimension more than 60 m, if the exposed construction materials within the space have a *flame-spread rating* not more than 25, and

(b) not more than 300 m^2 in area with no dimension more than 20 m, if the exposed construction materials within the space have a *flame-spread rating* more than 25.

(See Note A-3.1.11.5.(3) and (4))

(5) *Fire blocks* conforming to Sentences (3) and (4) are not required where the horizontal concealed space within the floor or roof assembly is entirely filled with *noncombustible* insulation such that any air gap between the top of the insulation and the floor or roof deck does not exceed 50 mm.

3.1.11.6. Fire Blocks in Crawl Spaces

(1) A crawl space that is not considered as a *basement* by Article 3.2.2.9. and in which sprinklers are not installed shall be separated by construction conforming to Article 3.1.11.7. into compartments not more than 600 m^2 in area with no dimension more than 30 m.

3.1.11.7. Fire Block Materials

(1) Except as permitted by Sentences (2) to (5) and (8), *fire blocks* shall remain in place and prevent the passage of flames for not less than 15 min when subjected to the standard fire exposure in CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

(2) Gypsum board not less than 12.7 mm thick and sheet steel not less than 0.38 mm thick need not be tested in conformance with Sentence (1) provided all joints have continuous support.

(3) In a *building* required to be of *noncombustible construction*, wood nailing elements described in Article 3.1.5.8. need not be tested in conformance with Sentence (1).

(4) In a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*, wood nailing elements referred to in Article 3.1.6.11. need not be tested in conformance with Sentence (1).

(5) In a *building* permitted to be of *combustible construction*, in a *combustible* roof system permitted by Sentences 3.1.5.3.(2) and 3.1.6.7.(1), and in a raised platform permitted by Sentence 3.1.5.10.(2) or 3.1.6.12.(1), *fire blocks* are permitted to be

(a) solid lumber or a structural composite lumber product conforming to ASTM D5456, "Standard Specification for Evaluation of Structural Composite Lumber Products," not less than 38 mm thick,
(b) phenolic bonded plywood, OSB, waferboard or oriented strandboard not less than 12.5 mm thick with joints supported, or
(c) two thicknesses of lumber or a structural composite lumber product conforming to ASTM D5456, "Standard Specification for Evaluation of Structural Composite Lumber Products," each not less than 19 mm thick with joints staggered, where the width or height of the concealed space requires more than one piece of lumber or structural composite lumber product not less than 38 mm thick to block off the space.

(6) Openings through materials referred to Sentences (1) to (5) shall be protected to maintain the integrity of the construction.

(7) Where materials referred to Sentences (1) to (5) are penetrated by construction elements or by service equipment, a *firestop* shall be used to seal the penetration. (See Note A-3.1.11.7.(7))

(8) In *buildings* permitted to be of *combustible construction*, semi-rigid fibre insulation board produced from glass, rock or slag is permitted to be used to block the vertical space in a double stud wall assembly formed at the intersection of the floor assembly and the walls, provided the width of the vertical space does not exceed 25 mm and the insulation board

(a) has a density not less than 45 kg/m^3,
(b) is securely fastened to one set of studs,
(c) extends from below the bottom of the top plates in the lower *storey* to above the top of the bottom plate in the upper *storey*, and
(d) completely fills the portion of the vertical space between the headers and between the wall plates.

(See Note A-3.1.11.7.(8))

3.1.12. Flame-Spread Rating and Smoke Developed Classification

3.1.12.1. Determination of Ratings

(1) Except as required by Sentence (2) and as permitted by Sentence (3), the *flame-spread rating* and smoke developed classification of a material, assembly, or structural member shall be determined on the basis of not less than three tests conducted in conformance with CAN/ULC-S102, "Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies."

(2) The *flame-spread rating* and smoke developed classification of a material or assembly shall be determined on the basis of not less than three tests conducted in conformance with CAN/ULC-S102.2, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies," if the material or assembly

(a) is designed for use in a relatively horizontal position with only its top surface exposed to air,
(b) cannot be tested in conformance with Sentence (1) without the use of supporting material that is not representative of the intended installation, or
(c) is thermoplastic.

(3) A material, assembly, or structural member is permitted to be assigned a *flame-spread rating* and smoke developed classification on the basis of MMAH Supplementary Standard SB-2, "Fire Performance Ratings."

3.1.13.12. Encapsulated Mass Timber Construction

(1) In a *building* or part of a *building* permitted to be of *encapsulated mass timber construction*,
(a) the *flame-spread ratings* required by Subsection 3.1.6. shall apply in addition to the requirements in this Subsection, and
(b) the *flame-spread ratings* for *exits* required by this Subsection shall also apply to any surface in the *exit* that would be exposed by cutting through the material in any direction, except that this requirement does not apply to doors, structural mass timber elements conforming to Sentence 3.1.6.4.(3), *heavy timber construction* and *fire-retardant-treated wood*.

3.1.14. Roof Assemblies

3.1.14.1. Fire-Retardant-Treated Wood Roof Systems

(1) If a *fire-retardant-treated wood* roof system is used to comply with the requirements of Subsection 3.2.2., the roof deck assembly shall meet the conditions of acceptance of CAN/ULC-S126, "Standard Method of Test for Fire Spread Under Roof-Deck Assemblies."

(2) Supports for the roof deck assembly referred to in Sentence (1) shall consist of
(a) *fire-retardant-treated wood*,
(b) *heavy timber construction*,
(c) *noncombustible construction*, or
(d) a combination thereof.

3.1.14.2. Metal Roof Deck Assemblies

(1) Except as permitted by Sentence (2), a metal roof deck assembly shall meet the conditions of acceptance of CAN/ULC-S126, "Standard Method of Test for Fire Spread Under Roof-Deck Assemblies," if
(a) it supports a *combustible* material above the deck that could propagate a fire beneath the roof deck assembly, and
(b) the deck is used to comply with the requirements of Sentences 3.2.2.25.(2), 3.2.2.32.(2), 3.2.2.62.(2), 3.2.2.68.(2), 3.2.2.78.(2) and 3.2.2.85.(2) for *noncombustible construction*.

(2) The requirements of Sentence (1) are waived provided
(a) the *combustible* material above the roof deck is protected by not less than 12.7 mm thick gypsum board, mechanically fastened to a supporting assembly if located beneath the roof deck, or by a thermal barrier conforming to one of Clauses 3.1.5.15.(2)(c) to (e) that is located
  (i) on the underside of the *combustible* material, or
  (ii) beneath the roof deck,
(b) the *building* is *sprinklered* throughout, or
(c) the roof assembly has a *fire-resistance rating* not less than 45 min.

3.1.15. Roof Covering

3.1.15.1. Roof Covering Classification

(1) A roof covering classification shall be determined in conformance with CAN/ULC-S107, "Standard Method of Fire Tests of Roof Coverings." (See Note A-3.1.15.1.(1))

3.1.15.2. Roof Coverings

(1) Except as provided by Sentences (2) to (4), every roof covering shall have a Class A, B or C classification as determined in accordance with Article 3.1.15.1.

(2) A roof covering is not required to have a Class A, B or C classification for
(a) a tent,
(b) an *air-supported structure*,
(c) a *building* of Group A, Division 2 *occupancy* not more than 2 *storeys* in *building height* and not more than 1 000 m^2 in *building area*, provided the roof covering is underlaid with *noncombustible* material, or
(d) a steel *building* system described in Article 4.3.4.3., provided the roof covering consists of brick, masonry, concrete, metal sheets or metal shingles.

(3) Except as provided in Sentence (5), roof coverings on *buildings* conforming to Article 3.2.2.51. or 3.2.2.60. shall have a Class A classification where the roof height is greater than 25 m measured from the floor of the first storey to the highest point of the roof.

(4) Except as provided in Sentence (5), roof coverings in *buildings* or parts of *buildings* permitted to be of *encapsulated mass timber construction* shall have a Class A classification if the roof height is greater than 25 m measured from the floor of the *first storey* to the highest point of the roof.

r1 **(5)** Where *buildings* or parts thereof conforming to Article 3.2.2.48., 3.2.2.51., 3.2.2.57., 3.2.2.60. or 3.2.2.93. include non-contiguous roof assemblies at different elevations, the roof coverings referred to in Sentences (3) and (4) are permitted to be evaluated separately to determine the roof covering classification required.

3.1.16. Fabrics

3.1.16.1. Fabric Awnings, Canopies and Marquees

(1) Fabrics used as part of an awning, *canopy* or *marquee* that is located within or attached to a *building* of any type of construction shall conform to CAN/ULC-S109, "Standard Method of Flame Tests of Flame-Resistant Fabrics and Films."

3.1.17. Occupant Load

3.1.17.1. Occupant Load Determination

(1) The *occupant load* of a *floor area* or part of a *floor area*, shall be based on
(a) the number of seats in an *assembly occupancy* having fixed seats,
(b) 2 persons per sleeping room in a *dwelling unit*, or
(c) the number of persons for which the area is designed, but not less than that determined from Table 3.1.17.1. for *occupancies* other than those described in Clauses (a) and (b), unless it can be shown that the area will be occupied by fewer persons.

(2) If a *floor area* or part thereof it has been designed for an *occupant load* other than that determined from Table 3.1.17.1., a permanent sign indicating that *occupant load* shall be posted in a conspicuous location.

(3) For the purposes of this Article, *mezzanines*, tiers and balconies shall be regarded as part of the *floor area*.

(4) If a room or group of rooms is intended for different *occupancies* at different times, the value to be used from Table 3.1.17.1. shall be the value that gives the greatest number of persons for the *occupancies* concerned.

3.1.21. Glass in Guards

3.1.21.1. Glass

(1) Except as provided in Sentence 3.3.4.7.(2), glass in *guards* shall conform to MMAH Supplementary Standard SB-13, "Glass in Guards."

Section 3.2. Building Fire Safety

3.2.1. General

3.2.1.1. Exceptions in Determining Building Height

(1) A rooftop enclosure provided for elevator machinery, a stairway or a *service room* used for no purpose other than for service to the *building*, shall not be considered as a *storey* in calculating the *building height*.

(2) Space under tiers of seats in a *building* of the arena type shall not be considered as adding to the *building height* provided the space is used only for dressing rooms, concession stands and similar purposes incidental to the *major occupancy* of the *building*.

(3) Except as required by Sentence (5), the space above a *mezzanine* need not be considered as a *storey* in calculating *building height* provided

(a) the aggregate area of *mezzanines* that are not superimposed does not exceed 40% of the open area of the room in which they are located, and (See Note A-3.2.1.1.(3)(a))
(b) except as permitted in Sentences (7) and 3.3.2.13.(3) the space above the *mezzanine* is used as an open area without *partitions* or subdividing walls higher than 1 070 mm above the *mezzanine* floor.

(4) Except as required by Sentence (5), the space above a *mezzanine* need not be considered as a *storey* in calculating the *building height* provided

(a) the aggregate area of *mezzanines* that are not superimposed and do not meet the conditions of Sentence (3) does not exceed 10% of the *floor area* in which they are located, and
(b) the area of a *mezzanine* in a *suite* does not exceed 10% of the area of that *suite*.

(5) Except as permitted by Sentence (6), each level of *mezzanine* that is partly or wholly superimposed above the first level of *mezzanine* shall be considered as a *storey* in calculating the *building height*.

(6) Platforms intended solely for periodic inspection and elevated maintenance catwalks need not be considered as floor assemblies or *mezzanines* for the purpose of calculating *building height*, provided

(a) they are not used for storage, and
(b) they are constructed with *noncombustible* materials unless the *building* is permitted to be of *combustible construction*.

(7) The space above a *mezzanine* conforming to Sentence (3) is permitted to include an enclosed space whose area does not exceed 10% of the open area of the room in which the *mezzanine* is located, provided the enclosed space does not obstruct visual communication between the open space above the *mezzanine* and the room in which it is located. (See Note A-3.2.1.1.(3)(a)

(8) A *service space* in which facilities are included to permit a person to enter and to undertake maintenance and other operations pertaining to *building* services from within the *service space* need not be considered a *storey* if it conforms to Articles 3.2.5.14. and 3.3.1.25., and Sentences 3.2.4.18.(11), 3.2.7.3.(2), 3.3.1.3.(7), 3.4.2.4.(3) and 3.4.4.4.(9). (See Note A-3.2.1.1.(8))

3.2.1.2. Storage Garage Considered as a Separate Building

(1) A *basement* used primarily as a *storage garage* is permitted to be considered as a separate *building* for the purposes of Subsection 3.2.2. and Sentences 3.2.5.12.(2) and (3), provided the floor and roof assemblies above the *basement* and the exterior walls of the *basement* above the adjoining ground level are constructed as *fire separations* of *noncombustible construction* having a *fire-resistance rating* not less than 2 h and protected in conformance with Clause 3.1.10.2.(4)(a), except as permitted by Sentence (2). (See Notes A-3.1.10.2.(4) and A-3.2.5.12.(2))

(2) The exterior wall of a *basement* that is required to be a *fire separation* with a *fire-resistance rating* in accordance with Sentence (1) is permitted to be penetrated by openings that are not protected by *closures* provided

(a) the *storage garage* is *sprinklered* throughout,

(b) every opening in the exterior wall is separated from *storeys* above the opening by a projection of the floor or roof assembly above the *basement*, extending not less than

  (i) 1 m beyond the exterior face of the *storage garage* if the upper *storeys* are required to be of *noncombustible construction*, or

  (ii) 2 m beyond the exterior face of the *storage garage* if the upper *storeys* are permitted to be of *combustible construction* or *encapsulated mass timber construction*, or

(c) the exterior walls of any *storeys* located above the floor or roof assembly referred to in Sentence (1) are recessed behind the outer edge of the assembly by not less than

  (i) 1 m if the upper *storeys* are required to be of *noncombustible construction*, or

  (ii) 2 m if the upper *storeys* are permitted to be of *combustible construction* or *encapsulated mass timber construction*.

(3) The floor or roof assembly projection referred to in Clause (2)(b) shall have a *fire-resistance rating* not less than 2 h and shall have no openings within the projection.

3.2.1.3. Roof Considered as a Wall

(1) For the purposes of this Section any part of a roof that is pitched at an angle of 60° or more to the horizontal and is adjacent to a space intended for *occupancy* within a *building* shall be considered as part of an exterior wall of the *building*.

3.2.1.4. Floor Assembly Over Basement

r1 **(1)** Except as permitted by Sentence 3.2.2.47.(3), 3.2.2.49.(3), 3.2.2.50.(3), 3.2.2.52.(3), 3.2.2.53.(3), 3.2.2.54.(3), 3.2.2.55.(3) or 3.2.2.93.(3), a floor assembly immediately above a *basement* shall be constructed as a *fire separation* having a *fire-resistance rating* conforming to the requirements of Articles 3.2.2.20. to 3.2.2.93. for a floor assembly, but not less than 45 min

(2) All *loadbearing* walls, columns and arches supporting a floor assembly immediately above a *basement* shall have a *fire-resistance rating* not less than that required by Sentence (1) for the floor assembly.

3.2.1.5. Fire Containment in Basements

(1) Except as permitted by Sentences (2) and 3.2.2.15.(3), in a *building* in which an automatic sprinkler system is not required to be installed by Articles 3.2.2.18., every *basement* shall

(a) be *sprinklered* throughout, or

(b) be subdivided into *fire compartments* not more than 600 m^2 in area by a *fire separation* having a *fire-resistance rating* not less than that required for the floor assembly immediately above the *basement*.

(2) An *open-air storey* need not conform to Sentence (1).

3.2.1.6. Mezzanines

r1 **(1)** The floor assembly of a *mezzanine* that is required to be considered as a *storey* in calculating the *building height* shall be constructed in conformance with the *fire separation* requirements for floor assemblies in Articles 3.2.2.20. to 3.2.2.93.

3.2.2. Building Size and Construction Relative to Occupancy

3.2.2.1. Application

(1) Except as permitted by Article 3.2.2.3., a *building* shall be constructed in conformance with this Subsection to prevent fire spread and collapse caused by the effects of fire. (See Subsection 3.1.3. for *fire separations* between *major occupancies*.)

3.2.2.2. Special and Unusual Structures

r1 **(1)** A structure that cannot be identified with the characteristics of a *building* in Articles 3.2.2.20. to 3.2.2.93. shall be protected against fire spread and collapse in conformance with good fire protection engineering practice. (See Note A-3.2.2.2.(1)) (See also Notes A-3 and A-3.2.5.12.(1))

3.2.2.3. Exceptions to Structural Fire Protection

(1) Fire protection is not required for

(a) steel lintels above openings not more than 2 m wide in *loadbearing* walls and not more than 3 m wide in non-*loadbearing* walls,

(b) steel lintels above openings more than 2 m wide in *loadbearing* walls and more than 3 m wide in non-*loadbearing* walls provided the lintels are supported at intervals of not more than 2 m by structural members with the required *fire-resistance rating*,

(c) the bottom flanges of shelf angles and plates that are not a part of the structural frame,

(d) steel members for framework around elevator hoistway doorways, steel for the support of elevator and dumbwaiter guides, counterweights and other similar equipment, that are entirely enclosed in a hoistway and are not a part of the structural frame of the *building*,

(e) steel members of stairways and escalators that are not a part of the structural frame of a *building*,

(f) steel members of porches, exterior balconies, exterior stairways, fire escapes, cornices, *marquees* and other similar appurtenances, provided they are outside an exterior wall of a *building*, and

(g) *loadbearing* steel or concrete members wholly or partly outside a *building* face in a *building* not more than 4 *storeys* in *building height* and classified as Group A, B, C, D or F, Division 3 *major occupancy* provided the members are

(i) not less than 1 m away from any *unprotected opening* in an exterior wall, or

(ii) shielded from heat radiation in the event of a fire within the *building* by construction that will provide the same degree of protection that would be necessary if the member was located inside the *building*, with the protection extending on either side of the member a distance equal to the projection of the member from the face of the wall.

(See also Article 3.2.3.9.)

3.2.2.4. Buildings with Multiple Major Occupancies

(1) The requirements restricting fire spread and collapse for a *building* of a single *major occupancy* classification are provided in this Subsection according to its *building height* and *building area*.

(2) If a *building* contains more than one *major occupancy*, classified in more than one Group or Division, the requirements of this Subsection concerning *building* size and construction relative to *major occupancy* shall apply according to Articles 3.2.2.5. to 3.2.2.8.

(3) For the purposes of Sentences (1) and (2), a *retirement home* is deemed to be a separate *major occupancy*.

3.2.2.5. Applicable Building Height and Area

(1) In determining the fire safety requirements of a *building* in relation to each of the *major occupancies* contained therein, the *building height* and *building area* of the entire *building* shall be used.

(2) For the purposes of Sentence (1), a *retirement home* is deemed to be a separate *major occupancy*.

3.2.2.6. Multiple Major Occupancies

r1 **(1)** Except as permitted by Articles 3.2.2.7. and 3.2.2.8., and Sentences 3.2.2.48.(4), 3.2.2.51.(5), 3.2.2.57.(3) and 3.2.2.60.(4) and 3.2.2.93.(5) to (7), in a *building* containing more than one *major occupancy*, the requirements of this Subsection for the most restricted *major occupancy* contained shall apply to the whole *building*.

(2) For the purposes of Sentence (1), a *retirement home* is deemed to be a separate *major occupancy*.

r1 **(3)** In a *building* or part thereof constructed in conformance with Article 3.2.2.48., 3.2.2.57. or 3.2.2.93. containing more than one *major occupancy*, the most restrictive encapsulation requirements of Article 3.1.6.4. and Table 3.2.2.93. for any *major occupancy* contained within a *storey* shall apply to the encapsulation required on the interior of a *public corridor* or *exit* within that *storey*.

3.2.2.7. Superimposed Major Occupancies

r1 **(1)** Except as permitted in Article 3.2.2.8. and Sentences 3.2.2.18.(2), 3.2.2.48.(4), 3.2.2.51.(5), 3.2.2.57.(3), 3.2.2.60.(4) and 3.2.2.93.(5) to (7), in a *building* in which one *major occupancy* is located entirely above another *major occupancy*, the requirements in this Subsection for each portion of the *building* containing a *major occupancy* shall apply to that portion as if the entire *building* were of that *major occupancy*.

(2) If one *major occupancy* is located above another *major occupancy*, the *fire-resistance rating* of the floor assembly between the *major occupancies* shall be determined on the basis of the requirements of this Subsection for the lower *major occupancy*. (See also Article 3.1.3.1.)

(3) For the purposes of Sentences (1) and (2), a *retirement home* is deemed to be a separate *major occupancy*.

r1 **(4)** In a *building* or part thereof constructed in conformance with Article 3.2.2.48., 3.2.2.57. or 3.2.2.93., if one *major occupancy* is located above another *major occupancy*,

(a) the most restrictive encapsulation requirements of Article 3.1.6.4. and Table 3.2.2.93. for any *major occupancy* contained within the *building* shall apply to the encapsulation required on the interior of *vertical service spaces* and *exit* stairs, and

(b) the encapsulation requirements of Article 3.1.6.4. and Table 3.2.2.93. for a mass timber floor assembly between the *major occupancies* shall be determined on the basis of the requirements for,

(i) the upper *major occupancy* for the encapsulation of the upper surface of the mass timber floor assembly, and

(ii) the lower *major occupancy* for the encapsulation of the underside of the mass timber floor assembly.

3.2.2.8. Exceptions for Major Occupancies

(1) In a *building* in which the aggregate area of all *major occupancies* in a particular Group or Division is not more than 10% of the *floor area* of the *storey* in which they are located, these *major occupancies* need not be considered as *major occupancies* for the purposes of this Subsection, provided they are not classified as Group F, Division 1 or 2 *occupancies*.

(2) For the purposes of Sentence (1), a *retirement home* is deemed to be a separate *major occupancy*.

(3) A helicopter landing area on the roof of a *building* need not be considered a *major occupancy* for purposes of Subsection 3.2.2. where such landing area is not more than 10% of the area of the roof.

3.2.2.9. Crawl Spaces

(1) For the purposes of Articles 3.1.11.6., 3.2.1.4. and 3.2.1.5., a crawl space shall be considered as a *basement* if it is
(a) more than 1.8 m high between the lowest part of the floor assembly and the ground or other surface below,
(b) used for any *occupancy*,
(c) used for the passage of *flue pipes*, or
(d) used as a *plenum* in *combustible construction*.

(2) A floor assembly immediately above a crawl space is not required to be constructed as a *fire separation* and is not required to have a *fire-resistance rating* provided the crawl space is not required to be considered as a *basement* by Sentence (1).

3.2.2.10. Streets

(1) Every *building* shall face a *street* located in conformance with the requirements of Articles 3.2.5.4 and 3.2.5.5 for access routes.

(2) For the purposes of Subsections 3.2.2. and 3.2.5. an access route conforming to Subsection 3.2.5. is permitted to be considered as a *street*.

(3) A *building* conforming to Article 3.2.2.51. or 3.2.2.60. is considered to face one *street*, where
(a) not less than 25% of the *building* perimeter is located within 15 m of a *street* or *streets*, or
(b) not less than 10% of the *building* perimeter is located within 15 m of a *street* or *streets*, provided the exterior cladding conforms to Sentence 3.1.4.8.(2).

(4) A *building* is considered to face 2 *streets* provided not less than 50% of the *building* perimeter is located within 15 m of the *street* or *streets*.

(5) A *building* is considered to face 3 *streets* provided not less than 75% of the *building* perimeter is located within 15 m of the *street* or *streets*.

(6) Enclosed spaces, tunnels, bridges and similar structures, even though used for vehicular or pedestrian traffic, are not considered as *streets* for the purpose of this Part.

3.2.2.11. Exterior Balconies

r1 **(1)** Except as provided in Sentence (2), an exterior balcony shall be constructed in accordance with the type of construction required by Articles 3.2.2.20. to 3.2.2.93., as applicable to the *occupancy* classification of the *building*.

r1 **(2)** The floor assembly of an exterior balcony in a *building* or part thereof conforming to Article 3.2.2.48., 3.2.2.57. or 3.2.2.93. shall
(a) be of *noncombustible construction*, or
(b) be constructed in accordance with Article 3.1.6.3., but need not comply with Sentence 3.1.6.4.(1).

3.2.2.12. Exterior Passageways

r1 **(1)** An elevated exterior passageway used as part of a *means of egress* shall conform to the requirements of Articles 3.2.2.20. to 3.2.2.93. for *mezzanines*.

3.2.2.13. Occupancy on Roof

r1 **(1)** A portion of a roof that supports an *occupancy* shall be constructed in conformance with the *fire separation* requirements of Articles 3.2.2.20. to 3.2.2.93. for floor assemblies.

3.2.2.14. Rooftop Enclosures

r1 **(1)** A rooftop enclosure for elevator machinery or for a *service room* shall be constructed in accordance with the type of construction required by Articles 3.2.2.20. to 3.2.2.93.

(2) A rooftop enclosure for elevator machinery or for a *service room*, not more than 1 *storey* high, is not required to have a *fire-resistance rating*.

r1 **(3)** A rooftop enclosure for a stairway shall be constructed in accordance with the type of construction required by Articles 3.2.2.20. to 3.2.2.93.

(4) A rooftop enclosure for a stairway need not have a *fire-resistance rating* nor be constructed as a *fire separation*.

3.2.2.15. Storeys Below Ground

(1) If a *building* is erected entirely below the adjoining finished ground level and does not extend more than one *storey* below that ground level, the minimum precautions against fire spread and collapse shall be the same as are required for *basements* under a *building* of 1 *storey* in *building height* having the same *occupancy* and *building area*.

(2) If any portion of a *building* is erected entirely below the adjoining finished ground level and extends more than 1 *storey* below that ground level, the following minimum precautions against fire spread and collapse shall be taken:

(a) except as permitted by Sentence (3), the *basements* shall be *sprinklered* throughout,

(b) a floor assembly below the ground level shall be constructed as a *fire separation* with a *fire-resistance rating* not less than

  (i) 3 h if the *basements* are used as Group E or Group F, Division 1 or 2 *occupancies*, or

  (ii) 2 h if the *basements* are not used as Group E or Group F, Division 1 or 2 *occupancies*, and

(c) all *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the construction that they support.

(3) If the *first storey* of a *building* is not required to be *sprinklered*, sprinklers are not required in the *storey* immediately below the *first storey*, provided the *storey* below

(a) contains only *residential occupancies*, and

(b) has at least one unobstructed access opening conforming to Sentence 3.2.5.1.(2) installed on that *storey* for each 15 m of wall length in at least one wall required by this Subsection to face a *street*.

3.2.2.16. Heavy Timber Roof Permitted

r1 **(1)** Unless otherwise permitted by Articles 3.2.2.20. to 3.2.2.93., a roof assembly in a *building* up to 2 *storeys* in *building height* is permitted to be of *heavy timber construction* regardless of *building area* or type of construction required, provided the *building* is *sprinklered* throughout.

(2) If Sentence (1) permits a roof assembly to be of *heavy timber construction*, structural members in the *storey* immediately below the roof assembly are permitted to be of *heavy timber construction*.

3.2.2.17. Roof Assemblies and Mezzanines in Gymnasiums, Swimming Pools, Arenas and Rinks

(1) The requirements for a roof assembly to have a *fire-resistance rating* stated in Articles 3.2.2.25., 3.2.2.30. and 3.2.2.32. are permitted to be waived for gymnasiums, swimming pools, arenas, and rinks, provided
(a) the roof carries no loads other than normal roof loads, including permanent access walks, and ventilating, sound and lighting equipment, and
(b) except as provided in Sentence (3), no part of the roof assembly is less than 6 m above the main floor or balcony.
(See Note A-3.2.2.17.(1))

(2) The requirements for a mezzanine to have a *fire-resistance rating* stated in Articles 3.2.2.25., 3.2.2.30. and 3.2.2.32. are permitted to be waived for gymnasiums, swimming pools, arenas, and rinks, provided
(a) the *mezzanine* is not required to be considered as a *storey* as per Sentences 3.2.1.1.(3) to (5),
(b) the *mezzanine* is used only for ventilating, sound and lighting equipment, and
(c) except as provided in Sentence (3), no part of the *mezzanine* is less than 6 m above the main floor or balcony.

(3) The restrictions concerning minimum distance stated in Clauses (1)(b) and (2)(c) shall not apply to
(a) an inclined and stepped floor ascending from the main floor that is used for seating purposes only, or
(b) a balcony used for seating purposes only.

3.2.2.18. Automatic Sprinkler System Required

r1 **(1)** Except as permitted by Sentence (2), an automatic sprinkler system conforming to the requirements of Articles 3.2.4.7., 3.2.4.8., 3.2.4.9. and 3.2.5.12. shall be installed throughout a *building* regulated by one or more of Articles 3.2.2.20., 3.2.2.21., 3.2.2.22., 3.2.2.23., 3.2.2.24., 3.2.2.26., 3.2.2.27., 3.2.2.29., 3.2.2.31., 3.2.2.33., 3.2.2.36., 3.2.2.37., 3.2.2.38., 3.2.2.39., 3.2.2.40., 3.2.2.41., 3.2.2.42., 3.2.2.43., 3.2.2.44., 3.2.2.45., 3.2.2.46., 3.2.2.47., 3.2.2.48., 3.2.2.49., 3.2.2.51., 3.2.2.52., 3.2.2.55., 3.2.2.55A., 3.2.2.55B., 3.2.2.55C., 3.2.2.55D., 3.2.2.55.E., 3.2.2.56., 3.2.2.57., 3.2.2.59., 3.2.2.60., 3.2.2.61., 3.2.2.63., 3.2.2.65., 3.2.2.66., 3.2.2.67., 3.2.2.69., 3.2.2.71., 3.2.2.72., 3.2.2.73., 3.2.2.74., 3.2.2.76., 3.2.2.77., 3.2.2.79., 3.2.2.81., 3.2.2.82., 3.2.2.84., 3.2.2.86., 3.2.2.88., 3.2.2.90. and 3.2.2.93.

r1 **(2)** If a *storey* in a *building* or a *floor area* is required to have an automatic sprinkler system installed throughout in accordance with one or more of Articles 3.2.2.20. to 3.2.2.93. or Section 3.3., the automatic sprinkler system shall also be installed throughout all lower *storeys* in the *building* notwithstanding permission in Articles 3.2.2.20. to 3.2.2.93. to construct one or more of those *storeys* without installing automatic sprinkler protection. (See Note A-3.2.2.18.(2))

3.2.2.19. Buildings Containing Impeded Egress Zones

r1 **(1)** A *building* containing an *impeded egress zone* and conforming to the appropriate requirements of Articles 3.2.2.20. to 3.2.2.93. is not required to conform to the requirements of Articles 3.2.2.36. and 3.2.2.37. for a Group B, Division 1 *major occupancy* provided
(a) the *building* is *sprinklered* throughout,
(b) it is not more than 1 *storey* in *building height*,
(c) it does not include
  (i) a *contained use area*,
  (ii) sleeping accommodation,
  (iii) a *high-hazard industrial occupancy*, or
  (iv) a *mercantile occupancy*,
(d) the *building area* is not more than 6 400 m^2 if the *building* includes a *medium-hazard industrial occupancy*,
(e) the *impeded egress zone* does not extend beyond the boundaries of the *fire compartment* in which it is located, and
(f) the *occupant load* of the *impeded egress zone* is not more than 100.

3.2.2.20. Group A, Division 1, Any Height, Any Area, Sprinklered

(1) Except as permitted by Articles 3.2.2.21. and 3.2.2.22., a *building* classified as Group A, Division 1 shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.21. Group A, Division 1, One Storey, Limited Area, Sprinklered

(1) A *building* classified as Group A, Division 1 is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 1 *storey* in *building height*,
(c) it has less than 40% of the area of the *building* as 2 *storeys* for the purpose of
  (i) development of productions including preparation of scenery and costumes and rehearsal of performers,
  (ii) organization of performers, scenery and sound equipment,
  (iii) preparation by performers for a performance,
  (iv) managerial functions, or
  (v) toilets, rest rooms and similar public facilities,
(d) it has no *occupancy* above or below the auditorium other than one which serves it or is dependent on it,
(e) it is not more than 600 m^2 in *building area*, and
(f) the *occupant load* is not more than 600.

(2) The *building* referred to in Sentence (1) is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations*
  (i) with a *fire-resistance rating* not less than 45 min, or
  (ii) of *heavy timber construction*, and
(b) *loadbearing* walls, columns and arches shall
  (i) have a *fire-resistance rating* not less than that required for the supported assembly, or
  (ii) be of *heavy timber construction*.

3.2.2.22. Group A, Division 1, One Storey, Sprinklered

(1) A *building* classified as Group A, Division 1 is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 1 *storey* in *building height*,
(c) no part of an auditorium floor is more than 5 m above or below *grade*,
(d) no *occupancy* is above or below the auditorium other than one which serves it or is dependent on it, and
(e) the *occupant load* of the auditorium floor is not more than 300.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min,
(c) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*, and
(d) *loadbearing* walls, columns and arches supporting a *fire separation* shall have a *fire-resistance rating* not less than that required for the *fire separation*.

3.2.2.23. Group A, Division 2, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.24. to 3.2.2.28. and 3.2.2.93., a *building* classified as Group A, Division 2 shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.24. Group A, Division 2, up to 6 Storeys, Any Area, Sprinklered

(1) A *building* classified as Group A, Division 2, that is not limited by *building area*, is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), *the building* is *sprinklered* throughout, and
(b) it is not more than 6 *storeys* in *building height*.

(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.37. Group B, Division 1, up to 3 Storeys, Sprinklered

(1) A *building* classified as Group B, Division 1 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area*
  (i) that is not limited if the *building* is not more than 1 *storey* in *building height*,
  (ii) not more than 12 000 m^2 if 2 *storeys* in *building height*, or
  (iii) not more than 8 000 m^2 if 3 *storeys* in *building height*.

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.38. Group B, Division 2, Any Height, Any Area, Sprinklered

(1) Except as permitted by Articles 3.2.2.39. to 3.2.2.41., a *building* classified as Group B, Division 2 shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.39. Group B, Division 2, up to 3 Storeys, Sprinklered

(1) A *building* classified as Group B, Division 2 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area*,
  (i) that is not limited if the *building* is not more than 1 *storey* in *building height*,
  (ii) not more than 12 000 m^2 if 2 *storeys* in *building height*, or
  (iii) not more than 8 000 m^2 if 3 *storeys* in *building height*.

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.40. Group B, Division 2, up to 2 Storeys, Sprinklered

(1) A *building* classified as Group B, Division 2 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 2 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 2 400 m^2 if 1 *storey* in *building height*, or
  (ii) 1 600 m^2 if 2 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.41. Group B, Division 2, One Storey, Sprinklered

(1) A *building* classified as Group B, Division 2 is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 1 *storey* in *building height*, and
(c) it has a *building area* not more than 500 m^2.

3.2.2.42. Group B, Division 3, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.43. to 3.2.2.46. and 3.2.2.93., a *building* classified as Group B, Division 3 shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.43. Group B, Division 3, Up to 3 Storeys, (Noncombustible), Sprinklered

(1) A *building* classified as Group B, Division 3 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area*
  (i) that is not limited if the *building* is not more than 1 *storey* in *building height*,
  (ii) not more than 12 000 m^2 if 2 *storeys* in *building height*, or
  (iii) not more than 8 000 m^2 if 3 *storeys* in *building height*.

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.44. Group B, Division 3, Up to 3 Storeys, Sprinklered

(1) A *building* classified as Group B, Division 3 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 5 400 m^2 if 1 *storey* in *building height*,
  (ii) 2 700 m^2 if 2 *storeys* in *building height*, or
  (iii) 1 800 m^2 if 3 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.45. Group B, Division 3, Up to 2 Storeys, Sprinklered

(1) A *building* classified as Group B, Division 3 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 2 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 2 400 m^2 if 1 *storey* in *building height*, or
  (ii) 1 600 m^2 if 2 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.46. Group B, Division 3, One Storey, Sprinklered

(1) A *building* classified as Group B, Division 3 is permitted to be of *combustible construction* or *noncombustible construction*, used singly or in combination, provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 1 *storey* in *building height*, and
(c) it has a *building area* not more than 600 m^2.

3.2.2.47. Group C, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.48. to 3.2.2.55. and 3.2.2.93., a *building* classified as Group C other than a *retirement home* shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) except as permitted by Sentence (3), floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

(3) In a *building* that contains *dwelling units* that have more than one *storey*, subject to the requirements of Sentence 3.3.4.2.(3), the floor assemblies, including floors over *basements*, which are entirely contained within these *dwelling units*, shall have a *fire-resistance rating* not less than 1 h but need not be constructed as *fire separations*.

r1

3.2.2.48. Group C, up to 12 Storeys, Sprinklered, Encapsulated Mass Timber Construction

(1) A *building* classified as Group C, other than a *retirement home*, is permitted to conform to Sentence (2), provided
(a) it is *sprinklered* throughout,
(b) it is not more than 12 *storeys* in *building height*,
(c) it has a height of not more than 42 m measured between the floor of the *first storey* and the uppermost floor level that does not serve as a rooftop enclosure for elevator machinery, a stairway or a *service room* used only for service to the *building*, and
(d) it has a *building area* not more than 6 000 m^2.

(2) Except as provided in Article 3.2.2.16., the *building* referred to in Sentence (1) is permitted to be of *encapsulated mass timber construction* or *noncombustible construction* used singly or in combination, and,
(a) except as provided in Sentence (3), floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

(3) In a *building* that contains *dwelling units* that have more than one *storey*, subject to the requirements of Sentence 3.3.4.2.(3), the floor assemblies, including floors over *basements*, that are entirely contained within these *dwelling units* shall have a *fire-resistance rating* not less than 1 h but need not be constructed as *fire separations*.

(4) Group A, Division 2 *major occupancies*, Group E *major occupancies* and *storage garages* located in a *building* or part of a *building* within the scope of this Article are permitted to be constructed in accordance with this Article, provided
(a) the Group A, Division 2 *major occupancy* is located below the fourth *storey*,
(b) the Group E *major occupancy* is located below the third *storey*, and
(c) the *storage garage* is located below the fifth *storey*. (See also Article 4.4.2.1.)

e1 (See Note A-3.2.2.48.(4), 3.2.2.57.(3) and 3.2.2.93.(5) to (7))

3.2.2.49. Group C, up to 6 Storeys, Sprinklered, Noncombustible Construction

(1) A *building* classified as Group C, other than a *retirement home*, is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 6 *storeys* in *building height*, and
(c) it has a *building area*
  (i) that is not limited if the *building* is not more than 2 *storeys* in *building height*,
  (ii) not more than 12 000 m^2 if 3 *storeys* in *building height*,
  (iii) not more than 9 000 m^2 if 4 *storeys* in *building height*,
  (iv) not more than 7 200 m^2 if 5 *storeys* in *building height*, or
  (v) not more than 6 000 m^2 if 6 *storeys* in *building height*.

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) except as permitted by Sentence (3), floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.55B. Group C, Retirement Home, up to 4 Storeys, Sprinklered, Increased Area

(1) A *retirement home* is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 4 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 12 000 m^2 if 1 *storey* in *building height*,
  (ii) 6 000 m^2 if 2 *storeys* in *building height*,
  (iii) 4 000 m^2 if 3 *storeys* in *building height*, or
  (iv) 3 000 m^2 if 4 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and,
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.55C. Group C, Retirement Home, up to 4 Storeys, Sprinklered

(1) A *retirement home* is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 4 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 6 600 m^2 if 1 *storey* in *building height*,
  (ii) 3 300 m^2 if 2 *storeys* in *building height*,
  (iii) 2 200 m^2 if 3 *storeys* in *building height*, or
  (iv) 1 650 m^2 if 4 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.55D. Group C, Retirement Home, up to 3 Storeys, Sprinklered, Noncombustible Construction

(1) A *retirement home* is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area* that is
  (i) not limited if the *building* is not more than 1 *storey* in *building height*,
  (ii) not more than 12 000 m^2 if 2 *storeys* in *building height*, or
  (iii) not more than 8 000 m^2 if 3 *storeys* in *building height*.

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) is required to be of *noncombustible construction*, and,
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.55E. Group C, Retirement Home, up to 3 Storeys, Sprinklered, Combustible Construction

(1) A *retirement home* is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 4 800 m^2 if 1 *storey* in *building height*,
  (ii) 2 400 m^2 if 2 *storeys* in *building height*, or
  (iii) 1 600 m^2 if 3 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.56. Group D, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.57. to 3.2.2.65. and 3.2.2.93., a *building* classified as Group D shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

r1 3.2.2.57. Group D, up to 12 Storeys, Sprinklered, Encapsulated Mass Timber Construction

(1) A *building* classified as Group D is permitted to conform to Sentence (2), provided
(a) it is *sprinklered* throughout,
(b) it is not more than 12 *storeys* in *building height*,
(c) it has a height of not more than 42 m measured between the floor of the *first storey* and the uppermost floor level that does not serve as a rooftop enclosure for elevator machinery, a stairway or a *service room* used only for service to the *building*, and
(d) it has a *building area* not more than 7 200 m^2.

(2) Except as provided in Article 3.2.2.16., the *building* referred to in Sentence (1) is permitted to be of *encapsulated mass timber construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

(3) Group A, Division 2 *major occupancies*, Group E *major occupancies*, Group F, Division 2 and 3 *major occupancies* and *storage garages* located in a *building* or part thereof within the scope of this Article are permitted to be constructed in accordance with this Article, provided
(a) the Group A, Division 2 *major occupancy* is located below the fourth *storey*,
(b) the Group E *major occupancy* and Group F, Division 2 or 3 *major occupancy* are located below the third *storey*, and
(c) the *storage garage* is located below the fifth *storey*. (See also Article 4.4.2.1.)
e1 (See Note A-3.2.2.48.(4), 3.2.2.57.(3), and 3.2.2.93.(5) to (7))

Table 3.2.2.62.
Maximum Building Area, Group D, up to 3 Storeys
Forming Part of Sentence 3.2.2.62.(1)

No. of *Storeys*	Maximum Area, m^2		
	Facing 1 *Street*	Facing 2 *Streets*	Facing 3 *Streets*
1	4 800	6 000	7 200
2	2 400	3 000	3 600
3	1 600	2 000	2 400

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min,
(c) roof assemblies shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, except that in a *building* not more than 1 *storey* in *building height*, the *fire-resistance rating* is permitted to be waived provided the roof assembly is constructed as a *fire-retardant-treated wood* roof system conforming to Article 3.1.14.1., and the *building area* is not more than
    (i) 2 400 m^2 if facing one *street*,
    (ii) 3 000 m^2 if facing 2 *streets*, or
    (iii) 3 600 m^2 if facing 3 *streets*, and
(d) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
    (i) have a *fire-resistance rating* not less than 45 min, or
    (ii) be of *noncombustible construction*.

3.2.2.63. Group D, up to 3 Storeys, Sprinklered

(1) A *building* classified as Group D is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area* not more than
    (i) 14 400 m^2 if 1 *storey* in *building height*,
    (ii) 7 200 m^2 if 2 *storeys* in *building height*, or
    (iii) 4 800 m^2 if 3 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, and
(c) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
    (i) have a *fire-resistance rating* not less than 45 min, or
    (ii) be of *noncombustible construction*.

3.2.2.64. Group D, up to 2 Storeys

(1) A *building* classified as Group D is permitted to conform to Sentence (2) provided

(a) it is not more than 2 *storeys* in *building height*, and
(b) it has a *building area* not more than the value in Table 3.2.2.64.

Table 3.2.2.64.
Maximum Building Area, Group D, up to 2 Storeys
Forming Part of Sentence 3.2.2.64.(1)

No. of *Storeys*	Maximum Area, m^2		
	Facing 1 *Street*	Facing 2 *Streets*	Facing 3 *Streets*
1	1 000	1 250	1 500
2	800	1 000	1 200

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min, and

(b) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall

(i) have a *fire-resistance rating* not less than 45 min, or

(ii) be of *noncombustible construction*.

3.2.2.65. Group D, up to 2 Storeys, Sprinklered

(1) A *building* classified as Group D is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,

(b) it is not more than 2 *storeys* in *building height*, and

(c) it has a *building area* not more than

(i) 3 000 m^2 if 1 *storey* in *building height*, or

(ii) 2 400 m^2 if 2 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min, and

(b) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall

(i) have a *fire-resistance rating* not less than 45 min, or

(ii) be of *noncombustible construction*.

3.2.2.66. Group E, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.67. to 3.2.2.71. and 3.2.2.93., a *building* classified as Group E shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,

(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,

(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h, and

(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.67. Group E, up to 4 Storeys, Sprinklered

(1) A *building* classified as Group E is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,

(b) it is not more than 4 *storeys* in *building height*, and

(c) it has a *building area* not more than 1 800 m^2.

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.73. Group F, Division 1, up to 3 Storeys, Sprinklered

(1) A *building* classified as Group F, Division 1 is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 3 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 3 600 m^2 if 1 *storey* in *building height*,
  (ii) 1 800 m^2 if 2 *storeys* in *building height*, or
  (iii) 1 200 m^2 if 3 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.74. Group F, Division 1, up to 2 Storeys, Sprinklered

(1) A *building* classified as Group F, Division 1 is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 2 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 2 400 m^2 if 1 *storey* in *building height*, or
  (ii) 1 200 m^2 if 2 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min,
(b) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*.

3.2.2.75. Group F, Division 1, One Storey

(1) A *building* classified as Group F, Division 1 is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination provided

(a) it is not more than 1 *storey* in *building height*, and
(b) it has a *building area* not more than 800 m^2.

3.2.2.76. Group F, Division 2, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.77. to 3.2.2.81. and 3.2.2.93., a *building* classified as Group F, Division 2 shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h, and
(d) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.77. Group F, Division 2, up to 4 Storeys, Increased Area, Sprinklered

(1) A *building* classified as Group F, Division 2 is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 4 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 18 000 m^2 if 1 *storey* in *building height*,
  (ii) 9 000 m^2 if 2 *storeys* in *building height*,
  (iii) 6 000 m^2 if 3 *storeys* in *building height*, or
  (iv) 4 500 m^2 if 4 *storeys* in *building height.*

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and

(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 1 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.78. Group F, Division 2, up to 3 Storeys

(1) A *building* classified as Group F, Division 2 is permitted to conform to Sentence (2) provided

(a) it is not more than 3 *storeys* in *building height*, and
(b) it has a *building area* not more than the value in Table 3.2.2.78.

Table 3.2.2.78.
Maximum Building Area, Group F, Division 2, up to 3 Storeys
Forming Part of Sentence 3.2.2.78.(1)

No. of *Storeys*	Maximum Area, m^2		
	Facing 1 *Street*	Facing 2 *Streets*	Facing 3 *Streets*
1	1 500	1 500	1 500
2	1 500	1 500	1 500
3	1 070	1 340	1 500

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and

(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min,
(c) roof assemblies shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min, except that in a *building* not more than 1 *storey* in *building height*, the *fire-resistance rating* is permitted to be waived provided the roof assembly is constructed as a *fire-retardant-treated wood* roof system conforming to Article 3.1.14.1.,
(d) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*, and

(e) *loadbearing* walls, columns and arches supporting a *fire separation* shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.79. Group F, Division 2, up to 4 Storeys, Sprinklered

(1) A *building* classified as Group F, Division 2 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 4 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 9 600 m^2 if 1 *storey* in *building height*,
  (ii) 4 800 m^2 if 2 *storeys* in *building height*,
  (iii) 3 200 m^2 if 3 storeys in *building height*, or
  (iv) 2 400 m^2 if 4 storeys in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 45 min,
(b) *mezzanines* shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min,
(c) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*, and
(d) *loadbearing* walls, columns and arches supporting a *fire separation* shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.80. Group F, Division 2, up to 2 Storeys

(1) A *building* classified as Group F, Division 2 is permitted to conform to Sentence (2) provided
(a) it is not more than 2 *storeys* in *building height*, and
(b) it has a *building area* not more than the value in Table 3.2.2.80.

Table 3.2.2.80.
Maximum Building Area, Group F, Division 2, up to 2 Storeys
Forming Part of Sentence 3.2.2.80.(1)

No. of *Storeys*	Maximum Area, m^2		
	Facing 1 *Street*	Facing 2 *Streets*	Facing 3 *Streets*
1	1 000	1 250	1 500
2	600	750	900

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min, and
(b) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*.

3.2.2.81. Group F, Division 2, up to 2 Storeys, Sprinklered

(1) A *building* classified as Group F, Division 2 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.28.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 2 *storeys* in *building height*, and

(c) it has a *building area* not more than
  (i) 4 500 m^2 if 1 *storey* in *building height*, or
  (ii) 1 800 m^2 if 2 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min, and
(b) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*.

3.2.2.82. Group F, Division 3, Any Height, Any Area, Sprinklered

r1 **(1)** Except as permitted by Articles 3.2.2.83. to 3.2.2.93., a *building* classified as Group F, Division 3 shall conform to Sentence (2).

(2) Except as permitted by Article 3.2.2.16., the *building* referred to in Sentence (1) shall be of *noncombustible construction*, and
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* shall be *sprinklered* throughout,
(b) floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h, except that floor assemblies are permitted to be *fire separations* with a *fire-resistance rating* not less than 1 h in a *storage garage* with all *storeys* constructed as *open-air storeys*,
(c) *mezzanines* shall have a *fire-resistance rating* not less 1 h,
(d) if the *building* is not *sprinklered*, roof assemblies shall have a *fire-resistance rating* not less than 1 h, and
(e) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

3.2.2.83. Group F, Division 3, up to 6 Storeys

(1) A *building* classified as Group F, Division 3 is permitted to conform to Sentence (2) provided
(a) it is not more than 6 *storeys* in *building height*, and
(b) it has a *building area* not more than the value in Table 3.2.2.83.

Table 3.2.2.83.
Maximum Building Area, Group F, Division 3, up to 6 Storeys
Forming Part of Sentence 3.2.2.83.(1)

No. of *Storeys*	Maximum Area, m^2		
	Facing 1 *Street*	Facing 2 *Streets*	Facing 3 *Streets*
1	not limited	not limited	not limited
2	7 200	9 000	10 800
3	4 800	6 000	7 200
4	3 600	4 500	5 400
5	2 880	3 600	4 320
6	2 400	3 000	3 600

3.2.2.88. Group F, Division 3, up to 2 Storeys, Sprinklered

(1) A *building* classified as Group F, Division 3 is permitted to conform to Sentence (2) provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 2 *storeys* in *building height*, and
(c) it has a *building area* not more than
  (i) 7 200 m^2 if 1 *storey* in *building height*, or
  (ii) 2 400 m^2 if 2 *storeys* in *building height*.

(2) The *building* referred to in Sentence (1) is permitted to be of *combustible construction* or *noncombustible construction* used singly or in combination, and
(a) floor assemblies shall be *fire separations* and, if of *combustible construction*, shall have a *fire-resistance rating* not less than 45 min, and
(b) *loadbearing* walls, columns and arches supporting an assembly required to have a *fire-resistance rating* shall
  (i) have a *fire-resistance rating* not less than 45 min, or
  (ii) be of *noncombustible construction*.

3.2.2.89. Group F, Division 3, One Storey

(1) A *building* classified as Group F, Division 3 is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination provided
(a) it is not more than 1 *storey* in *building height*, and
(b) it has a *building area* not more than
  (i) 5 600 m^2 if facing one *street*,
  (ii) 7 000 m^2 if facing 2 *streets*, or
  (iii) 8 400 m^2 if facing 3 *streets*.

3.2.2.90. Group F, Division 3, One Storey, Sprinklered

(1) A *building* classified as Group F, Division 3 is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination provided
(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) it is not more than 1 *storey* in *building height*, and
(c) it has a *building area* not more than 16 800 m^2.

3.2.2.91. Group F, Division 3, One Storey, Any Area, Low Fire Load Occupancy

(1) A *building* classified as Group F, Division 3 is permitted to conform to Sentence (2) provided it is
(a) not more than 1 *storey* in *building height*,
(b) used solely for low *fire load occupancies* such as
  (i) power generating plants, or
  (ii) plants for the manufacture or storage of *noncombustible* materials, and
(c) not limited in *building area*.

(2) The *building* referred to in Sentence (1) shall be of *noncombustible construction*.

3.2.2.92. Group F, Division 3, Storage Garages up to 22 m High

(1) A *building* used as a *storage garage* with all *storeys* constructed as *open-air storeys* and having no other *occupancy* above it is permitted to have its floor, wall, ceiling and roof assemblies constructed without a *fire-resistance rating* provided it is

(a) of *noncombustible construction*,
(b) not more than 22 m high, measured between *grade* and the ceiling level of the top *storey*,
(c) not more than 10 000 m^2 in *building area*, and
(d) designed so that every portion of each *floor area* is within 60 m of an exterior wall opening.

r1 3.2.2.93. Encapsulated Mass Timber Construction, Various Occupancies, Heights and Areas, Sprinklered

(1) A *building* that is classified as Group A, Division 2, Group B, Division 3, Group C other than a *retirement home*, Group D, Group E, or Group F, Division 2 or 3, is permitted to conform to Sentence (2) provided

(a) except as permitted by Sentences 3.2.2.7.(1) and 3.2.2.18.(2), the *building* is *sprinklered* throughout,
(b) the *building* has a *building height* not exceeding the number of *storeys* shown in Table 3.2.2.93. for the applicable *major occupancy* and minimum *encapsulation rating*,
(c) the *building* has a maximum height that conforms to the value shown in Table 3.2.2.93. for the applicable *major occupancy* and minimum *encapsulation rating* that is measured between the floor of the *first storey* and the uppermost floor level that does not serve a rooftop enclosure for elevator machinery, a stairway or a *service room* used only for service to the *building*,
(d) the *building* has a maximum *building area* that conforms to the value shown in Table 3.2.2.93. for the applicable *major occupancy*, and
(e) except as provided in Sentences 3.1.6.3.(4) and 3.1.6.7.(1) and Article 3.1.6.4., the *encapsulation rating* conforms to the value shown in Table 3.2.2.93. for the applicable *major occupancy* and maximum *building height*.

(See Note A-3.2.2.93.(1) and Table 3.2.2.93. See also Articles 3.2.2.48. and 3.2.2.57.)

(2) Except as provided in Article 3.2.2.16., the *building* referred to in Sentence (1) is permitted to be of *encapsulated mass timber construction* or *noncombustible construction* used singly or in combination, and,

(a) except as provided in Sentence (3), floor assemblies shall be *fire separations* with a *fire-resistance rating* not less than 2 h,
(b) *mezzanines* shall have a *fire-resistance rating* not less than 1 h, and
(c) *loadbearing* walls, columns and arches shall have a *fire-resistance rating* not less than that required for the supported assembly.

(3) In a *building* classified as a Group C *major occupancy* that contains *dwelling units* that have more than one *storey*, subject to the requirements of Sentence 3.3.4.2.(3), the floor assemblies, including floors over *basements*, that are entirely contained within these *dwelling units* shall have a *fire-resistance rating* not less than 1 h but need not be constructed as *fire separations*.

(4) In *buildings* referred to in Sentence (1) where the roof assembly of an *exit* stairway or *vertical service space* used as an elevator hoistway has a height greater than 55 m measured from *grade* to the highest point of the roof assembly, the enclosure for the stairway or hoistway shall be of *encapsulated mass timber construction* or constructed of concrete.

(5) Group E *major occupancies* and *storage garages* located in a *building* or part thereof within the scope of this Article are permitted to be constructed in accordance with this Article and the corresponding Group A, Division 2, Group C, or Group D *major occupancy* requirements contained in Table 3.2.2.93., provided

(a) the Group E *major occupancy* is located below the third *storey*, and
(b) the *storage garage* is located below the fifth *storey*. (See also Article 4.4.2.1.)

(See Note A-3.2.2.48.(4), 3.2.2.57.(3) and 3.2.2.93.(5) to (7))

(6) Group A, Division 2 *major occupancies* located in a *building* or part of a *building* within the scope of this Article are permitted to be constructed in accordance with this Article and the corresponding Group C, or Group D *major occupancy* requirements contained in Table 3.2.2.93., provided they are located below the fourth *storey*.
(See Note A-3.2.2.48.(4), 3.2.2.57.(3) and 3.2.2.93.(5) to (7))

(7) Group F, Division 2 and 3 *major occupancies* located in a *building* or part thereof within the scope of this Article are permitted to be constructed in accordance with this Article and the corresponding Group D *major occupancy* requirements contained in Table 3.2.2.93., provided they are located below the third *storey*.
(See Note A-3.2.2.48.(4), 3.2.2.57.(3) and 3.2.2.93.(5) to (7))

Table 3.2.2.93.
Encapsulated Mass Timber Construction, Various Occupancies, Heights and Areas, Sprinklered(1)(2)
Forming Part of Sentences 3.2.2.93.(1), (5), (6) and (7)

Major Occupancy	Maximum *Building Height*, *Storeys*	Maximum Height, m	Maximum *Building Area*, m^2	Minimum *Encapsulation Rating*, min
Group A, Division 2	18	76	7200	70
	12	51		50
	6	26		0
Group B, Division 3	10	42	8000	70
	6	26		50
	4	17		0
Group C	18	76	6000	70
	8	34		0
Group D	18	76	7200	70
	9	38		0
Group E	12	51	6000	70
	8	34		50
	6	26		0
Group F, Division 2	10	42	4500	70
	7	30		50
	5	21		0
Group F, Division 3	12	51	7200	70
	8	34		50
	5	21		0

Notes to Table 3.2.2.93.:

(1) See Sentences (5) to (7) and Articles 3.2.2.4. to 3.2.2.8. for information pertaining to multiple *major occupancies*.

(2) Linear interpolation is not permitted in using Table 3.2.2.93.

3.2.3. Spatial Separation and Exposure Protection (See Note A-3.2.3.)

3.2.3.1. Limiting Distance and Area of Unprotected Openings

(1) Except as permitted by Articles 3.2.3.10. to 3.2.3.12., the area of *unprotected openings* in an *exposing building face* for the applicable *limiting distance* shall be not more than the value determined in accordance with

(a) Table 3.2.3.1.-B or Table 3.2.3.1.-C for an *exposing building face* conforming to Article 3.2.3.2. of a *building* or *fire compartment* which is not *sprinklered*, or

(b) Table 3.2.3.1.-D or Table 3.2.3.1.-E for an *exposing building face* conforming to Article 3.2.3.2. of a *sprinklered fire compartment* that is part of a *building* which is *sprinklered* in conformance with Section 3.2.

(See Note A-3)
(See also Article 3.1.18.3.)

(2) The area of the *unprotected openings* in an *exposing building face* shall be the aggregate area of *unprotected openings* expressed as a percentage of the area of the *exposing building face* in Table 3.2.3.1.-B, 3.2.3.1.-C, 3.2.3.1.-D or 3.2.3.1.-E. (See Sentence 3.2.3.2.(1))

(3) For the purpose of determining the type of construction and cladding and the *fire-resistance rating* of an exterior wall,

(a) the *exposing building face* shall be taken as the projection of the exterior wall onto a vertical plane located so that no portion of the exterior wall of the *building* or of a *fire compartment*, if the *fire compartment* complies with the requirements of Article 3.2.3.2., is between the vertical plane and the line to which the *limiting distance* is measured, and

(b) the area of *unprotected openings* shall be determined from Table 3.2.3.1.-B, 3.2.3.1.-C, 3.2.3.1.-D or 3.2.3.1.-E.

(4) For the purpose of determining the actual percentage of *unprotected openings* permitted in an exterior wall, the location of the *exposing building face* is permitted to be taken at a vertical plane located so that there are no *unprotected openings* between the vertical plane and the line to which the *limiting distance* is measured. (See Note A-3.2.3.1.(4))

(5) Except for *buildings* that are *sprinklered*, where the *limiting distance* is 2 m or less, individual *unprotected openings* in an *exposing building face* shall be no greater than

(a) the area stated in Table 3.2.3.1.-A, or

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

$$\text{Area} = 0.24\,[(2 \times \text{LD}) - 1.2]^2$$

where

Area = area of the *unprotected opening*, and

LD = *limiting distance*.

3.2.3.7. Construction of Exposing Building Face

(1) Except as provided by Sentences (3) and (4) and Articles 3.2.3.10. and 3.2.3.11., the *fire-resistance rating*, construction and cladding for *exposing building faces* of *buildings* or *fire compartments* of Group A, B, C, D or Group F, Division 3 *occupancy* classification shall comply with Table 3.2.3.7.

Table 3.2.3.7.
Minimum Construction Requirements for Exposing Building Faces
Forming Part of Sentences 3.1.6.9.(5) and 3.2.3.7.(1) to (4)

Occupancy Classification of *Building* or *Fire Compartment*	Maximum Area of *Unprotected Openings* Permitted, % of *Exposing Building Face* Area	Minimum Required *Fire-Resistance Rating*	Type of Construction Required	Type of Cladding Required
Group A, B, C, D, or Group F, Division 3	0 to 10	1 h	*Noncombustible*	*Noncombustible*
	> 10 to 25	1 h	*Combustible, Encapsulated Mass Timber Construction, or Noncombustible*	*Noncombustible*
	> 25 to 50	45 min	*Combustible, Encapsulated Mass Timber Construction, or Noncombustible*	*Noncombustible*
	> 50 to < 100	45 min	*Combustible, Encapsulated Mass Timber Construction, or Noncombustible*	*Combustible* or *Noncombustible*(1)(2)
Group E, or Group F, Division 1 or 2	0 to 10	2 h	*Noncombustible*	*Noncombustible*
	> 10 to 25	2 h	*Combustible, Encapsulated Mass Timber Construction, or Noncombustible*	*Noncombustible*
	> 25 to 50	1 h	*Combustible, Encapsulated Mass Timber Construction, or Noncombustible*	*Noncombustible*
	> 50 to < 100	1 h	*Combustible, Encapsulated Mass Timber Construction, or Noncombustible*	*Combustible* or *Noncombustible*

Notes to Table 3.2.3.7.:

(1) The cladding on Group C *buildings* within the scope of Article 3.2.2.51. and on Group D *buildings* within the scope of Article 3.2.2.60. shall be *noncombustible* or consist of a wall that satisfies the requirements of Article 3.1.4.8.

r1 (2) The cladding on *buildings* or parts thereof conforming to Article 3.2.2.48., 3.2.2.57. or 3.2.2.93. shall conform to Article 3.1.6.9. or be *noncombustible*.

(2) Except as provided in Sentences (3) and (4) and Article 3.2.3.10., the *fire-resistance rating*, construction and cladding for *exposing building faces* of *buildings* or *fire compartments* of Group E or Group F, Division 1 or 2 *occupancy* classification shall comply with Table 3.2.3.7.

(3) Except as provided in Articles 3.1.4.8. and 3.1.6.9., the requirement in Table 3.2.3.7. for *noncombustible* cladding for *buildings* or *fire compartments* where the maximum permitted area of *unprotected openings* is more than 10% of the *exposing building face* is permitted to be waived for exterior wall assemblies that comply with Article 3.1.5.5. or 3.1.5.6.

(4) Except as provided by Articles 3.1.4.8. and 3.1.6.9., the requirement in Table 3.2.3.7. for *noncombustible* cladding for *buildings* or *fire compartments* where the maximum permitted area of *unprotected openings* is more than 25% but not more than 50% of the *exposing building face* is permitted to be waived where

(a) the *limiting distance* is greater than 5 m,
(b) the *building* or *fire compartment* and all *combustible attic or roof spaces* are *sprinklered* throughout,
(c) the cladding
  (i) conforms to Subsection 9.27.6., 9.27.7., 9.27.8., 9.27.9. or 9.27.10.,
  (ii) is installed without furring members, or on furring not more than 25 mm thick, over gypsum sheathing at least 12.7 mm thick or over masonry, and
  (iii) after conditioning in conformance with ASTM D2898, "Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing," has a *flame-spread rating* not greater than 25 on the exterior face when tested in accordance with Sentence 3.1.12.1.(1),

(d) the cladding
  (i) conforms to Subsection 9.27.12.,
  (ii) is installed with or without furring members over gypsum sheathing at least 12.7 mm thick or over masonry,
  (iii) has a *flame-spread rating* not greater than 25 when tested in accordance with Sentence 3.1.12.1.(2), and
  (iv) does not exceed 2 mm in thickness exclusive of fasteners, joints and local reinforcements, or (See Note A-3.2.3.7.(4)(d)(iv))
(e) the exterior wall assembly complies with Article 3.1.5.5. or 3.1.5.6.

(5) The construction requirements for the *exposing building face* stated in Sentences (1) and (2) shall be satisfied before increasing the *unprotected opening* area as permitted by Sentence 3.2.3.12.(1).

3.2.3.8. Protection of Exterior Building Face

(1) Except as permitted by Sentence (3) and in addition to the requirements of Sentences 3.2.3.7.(1) and (2) and where the maximum permitted area of *unprotected openings* is greater than 10% of the *exposing building face*, foamed plastic insulation used in an exterior wall of a *building* more than 3 *storeys* in *building height* shall be protected on its exterior surface by
(a) concrete or masonry not less than 25 mm thick, or
(b) *noncombustible* material that complies with the criteria for testing and conditions of acceptance stated in Sentence (2) when tested in conformance with CAN/ULC-S101, "Standard Method of Fire Endurance Tests of Building Construction and Materials."

(2) The criteria for testing and the conditions of acceptance for a wall assembly to satisfy the requirements of Clause (1)(b) are that
(a) the fire exposed area of the wall assembly shall be not less than 9.3 m^2 and have no dimension less than 2.75 m,
(b) the exposed surface shall include typical vertical and horizontal joints,
(c) the test shall be continued for not less than 15 min and the standard time/temperature curve of the referenced standard shall be followed,
(d) the *noncombustible* protective material will remain in place and no through openings should develop that are visible when viewed normal to the face of the material, and
(e) the *noncombustible* protective material will not disintegrate in a manner that would permit fire to propagate along the surface of the test assembly.

(3) The requirements of Sentence (1) are waived for wall assemblies that comply with the requirements of Article 3.1.5.5. (See Note A-3.1.4.1.(1))

3.2.3.9. Protection of Structural Members

r1 **(1)** Structural members, including beams, columns and arches, placed wholly or partly outside the exterior face of a *building* and are less than 3 m from the property line or the centre line of a public thoroughfare shall be protected from exterior fire exposure by fire protection having a *fire-resistance rating* not less than that required for their protection from interior fire exposure, as stated in Articles 3.2.2.20. to 3.2.2.93., but not less than 1 h.

(2) Structural members of *heavy timber construction*, including beams, columns and arches, that are placed wholly or partly outside an exterior face of a *building* and are 3 m or more from the property line or the centre line of a public thoroughfare need not be covered with *noncombustible* cladding.

3.2.3.10. Unlimited Unprotected Openings

(1) An *exposing building face* in a *storage garage* with all *storeys* constructed as *open-air storeys* is permitted to have unlimited *unprotected openings* provided it has a *limiting distance* not less than 3 m.

(2) The *exposing building face* of a *storey* that faces a *street* and is at the same level as the *street* is permitted to have unlimited *unprotected openings* if the *limiting distance* is not less than 9 m.

3.2.4.17. Alert and Alarm Signals

(1) In a 2-stage fire alarm system described in Sentence 3.2.4.4.(2), the same audible signal devices are permitted to be used to sound the *alert signals* and the *alarm signals.*

(2) If audible signal devices with voice reproduction capabilities are intended for paging and similar voice message use, other than during a fire emergency, they shall be installed so that *alert signals* and *alarm signals* take priority over all other signals.

(3) Audible signal devices forming part of a fire alarm or voice communication system shall not be used for playing music or background noise.

3.2.4.18. Audibility of Alarm Systems (See Note A-3.2.4.18.)

(1) Except as permitted by Sentence 3.2.4.19.(2) and except as required by Clause 3.2.4.4.(2)(d), audible signal devices forming part of a fire alarm system shall be installed in a *building* so that
(a) *alarm signals* are clearly audible throughout the *floor area*, and
(b) *alert signals* are clearly audible in continuously staffed locations, and where there are no continuously staffed locations, throughout the *floor area*.
(See Note A-3.2.4.18.(1))

(2) The sound pattern of an *alarm signal* shall conform to the temporal pattern defined in Clause 4.2 of ISO 8201, "Acoustics — Audible emergency evacuation signal." (See Note A-3.2.4.18.(2))

(3) The sound patterns of *alert signals* shall be significantly different from the temporal patterns of *alarm signals*. (See Note A-3.2.4.18.(3))

(4) In all normally occupied spaces, the fire *alarm signal* sound pressure level
(a) shall be not more than 110 dBA when measured at a distance of 3 m from the device, or
(b) is permitted to be more than 100 dBA provided the sound pressure level measured 2 000 mm above floor level is not more than 100 dBA.
(See Note A-3.2.4.18.(4))

(5) The sound pressure level in a sleeping room from a fire alarm audible signal device shall be not less than 75 dBA in a *building* of *residential occupancy* when any intervening doors between the device and the sleeping room are closed. (See Note A-3.2.4.18.(5))

(6) Audible signal devices in sleeping rooms in a *building* of *residential* or *care occupancy* shall emit a low frequency signal. (See Note A-3.2.4.18.(6))

(7) Except as required by Sentence (5), the sound pressure level from a fire alarm system's audible signal device within a *floor area* shall be not less than 10 dBA above the ambient noise level and not less than 65 dBA, when any intervening doors between the device and the rest of the *floor area* are closed.

(8) Except as permitted by Sentence (12), audible signal devices located within a *dwelling unit* shall include a means for them to be manually silenced for a period of not more than 10 min, after which time the devices shall restore themselves to normal operation. (See Note A-3.2.4.18.(8))

(9) Audible signal devices within a *dwelling unit* or a *suite* of *residential occupancy* shall be connected to the fire alarm system
(a) in a manner such that a single open circuit at one device will not impair the operation of other audible signal devices on that same circuit that serve the other *dwelling units* or *suites* of *residential occupancy*, or
(b) on separate signal circuits that are not connected to the devices in any other *dwelling unit*, *public corridor* or *suite* of *residential occupancy*.
(See Note A-3.2.4.18.(9) and (10))

e1 **(10)** In a *building* or part thereof classified as a *residential occupancy*,
(a) separate circuits shall be provided for audible signal devices on each *floor area*, and
(b) audible signal devices within *dwelling units* or *suites* of *residential occupancy* shall be wired on separate signal circuits from those not within *suites* of *residential occupancy* or *dwelling units*.
(See Note A-3.2.4.18.(9) and (10))

(11) Audible signal devices shall be installed in a *service space* referred to in Sentence 3.2.1.1.(8) and shall be connected to the fire alarm system.

(12) Audible signal devices within *dwelling units* that are wired on separate signal circuits in accordance with Clause (10)(b) need not include a means for manual signal silencing as required by Sentence (8), provided the fire alarm system includes a provision for the automatic signal silence within *dwelling units*, where
(a) the automatic signal silence cannot occur within the first 60 s of operation or within the zone of initiation,
(b) a subsequent alarm elsewhere in the *building* will reactuate the silenced audible signal devices within *dwelling units*,
(c) after a period of not more than 10 min, the silenced audible signal devices will be restored to continuous audible signal if the alarm is not acknowledged, and
(d) the voice communication systems referred to in Article 3.2.4.22. and 3.2.4.23. has a provision to override the automatic signal silence to allow the transmission of voice messages through silenced audible signal device circuits that serve the *dwelling units*.
(See Note A-3.2.4.18.(12))

(13) If a 2-stage fire alarm system has been installed with an automatic signal silence as described in Sentence (12), the system shall be designed so that any silenced audible signal devices serving *dwelling units* are reactuated whenever an *alarm signal* is required to be transmitted as part of the second stage. (See Note A-3.2.4.18.(8))

3.2.4.19. Visible Signals

(1) Except as permitted by Sentence (4), where a fire alarm system is installed, visible signal devices shall be installed in addition to alarm signal devices
(a) in a *building* or portions thereof intended for use primarily by persons with a hearing impairment,
(b) in *assembly occupancies* in which music and other sounds associated with performances could exceed 100 dBA,
(c) in any *floor area* in which the ambient noise level is more than 87 dBA,
(d) in any *floor area* in which the occupants
  (i) use ear protection devices,
  (ii) are located in an audiometric booth, or
  (iii) are located in sound-insulating enclosures,
(e) in *public corridors* serving a Group A, B, C, D or E *major occupancy*,
(f) in a corridor used by the public and in a *floor area* or part of a *floor area* where the public may congregate in a Group A *occupancy*,
(g) in not less than 10% of the *suites* of a *hotel* or motel, (See Note A-3.2.4.19.(1)(g))
(h) in washrooms for *public use* described in Sentence 3.8.2.3.(2), (3), (4) or (6), and
(i) in living spaces in a *suite* of *residential occupancy* in a Group C *major occupancy* apartment *building*.

(2) Visible signal devices are permitted to be installed in lieu of audible signal devices in the compartments referred to in Article 3.3.3.6. (See Note A-3.2.4.19.(2))

(3) Visible signal devices required by Sentence (1) shall be installed so that the signal from at least one device is visible throughout the *floor area* or portion thereof in which they are installed. (See Note A-3.2.4.19.(3))

(4) Visible signal devices required by Clauses (1)(e) and (f) are not required in
(a) a classroom, and
(b) a Group B, Division 3 *occupancy* that contains sleeping accommodation for not more than 10 persons and not more than six occupants require assistance in evacuation in case of an emergency.

(6) Where a *building* or part thereof is used as a *distillery* and the *building* is *sprinklered* in conformance with Article 3.2.5.12., small hose (38 mm) stations are permitted to be supplied from interior sprinkler piping.

(7) Where a hose station is provided in grain handling and storage facilities in which *combustible dusts* are produced in quantities or concentrations that create an explosion or fire hazard, fog and fine spray nozzles shall be used instead of nozzles that discharge a solid stream of water to prevent *combustible dusts* from being raised into suspension.

3.2.5.12. Automatic Sprinkler Systems

(1) Except as provided by Sentences (2) to (4) and (9), an automatic sprinkler system shall be designed, constructed, installed and tested in conformance with NFPA 13, "Standard for the Installation of Sprinkler Systems." (See Note A-3.2.5.12.(1))

(2) Instead of the requirements of Sentence (1), NFPA 13R, "Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies," is permitted to be used for the design, construction, installation and testing of an automatic sprinkler system installed

(a) in a *building* of *residential occupancy* throughout that is not more than 4 *storeys* in *building height* and conforms to Article 3.2.2.47., 3.2.2.49., 3.2.2.51., 3.2.2.52. or 3.2.2.55.,
(b) in a *building* of Group B, Division 3 *occupancy* that contains sleeping accommodation for not more than 10 persons and not more than six occupants require assistance in evacuation in case of an emergency,
(c) in a *building* that contains a *retirement home* constructed in accordance with Article 3.2.2.55D., or
(d) in a *building* that contains a *retirement home* constructed in accordance with Article 3.2.2.55E., where the *fire separation* required by Sentence 3.3.4.11.(2) on the *storey* immediately below the roof assembly is continuous to the underside of the roof deck.

(See Note A-3.2.5.12.(2))

(3) Instead of the requirements of Sentence (1), NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," is permitted to be used for the design, construction and installation of an automatic sprinkler system installed

(a) in a *building* of *residential occupancy* throughout that contains not more than two *dwelling units*,
(b) reserved,
(c) in a *building* of *residential occupancy* throughout that contains more than two *dwelling units*, provided
    (i) except for a *secondary suite*, no *dwelling unit* is located above another *dwelling unit*,
    (ii) all *suites* are separated by a vertical *fire separation* having a *fire-resistance rating* of not less than 1 h that provides continuous protection from the top of the footing to the underside of the roof deck, with any space between the top of the wall and the roof deck tightly filled with mineral wool or *noncombustible* material,
    (iii) each *dwelling unit* has its own sprinkler water supply provided in accordance with NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes,"
    (iv) a passive purge sprinkler system design is used as described in NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes," and
    (v) where the sprinkler system is taken into consideration for the reduction of *limiting distance*, all rooms, including closets, bathrooms and attached garages, that adjoin an *exposing building face* are *sprinklered*, notwithstanding any exemption stated in NFPA 13D, "Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes."

(See Note A-3.2.5.12.(2))

(4) If a *building* contains fewer than 9 sprinklers, the water supply for these sprinklers is permitted to be supplied from the domestic water system for the *building* provided the required flow for the sprinklers can be met by the domestic system.

(5) If a water supply serves both an automatic sprinkler system and a system serving other equipment, control valves shall be provided so that either system can be shut off independently.

(6) Notwithstanding the requirements of the standards referenced in Sentences (1) and (2) for the installation of automatic sprinkler systems, sprinklers shall not be omitted in any room or closet in the *storey* immediately below a roof assembly. (See Note A-3.2.5.12.(6))

r1 **(7)** Notwithstanding the requirements of the standards referenced in Sentences (1) and (2) regarding the installation of automatic sprinkler systems, in *buildings* conforming to Article 3.2.2.48., 3.2.2.51., 3.2.2.57., 3.2.2.60. or 3.2.2.93., sprinklers shall be provided for all balconies and decks, other than,

(a) balconies or decks that are not more than 610 mm in depth measured perpendicular to the exterior wall of the *building*, or

(b) decks on the uppermost roof of the *building*.

(See Note A-3.2.5.12.(7))

(8) Sprinklers in elevator machine rooms shall have a temperature rating not less than that required for an intermediate temperature classification and shall be protected against physical damage. (See Note A-3.2.5.12.(8))

(9) Except as provided in Subsection 3.2.8., closely spaced sprinklers and associated draft stops need not be installed around floor openings in conformance with NFPA 13, "Standard for the Installation of Sprinkler Systems."

(10) The sprinkler system described in Sentence (3) shall be provided with a minimum 20 min water supply when installed in a *retirement home*.

3.2.5.13. Combustible Sprinkler Piping

(1) *Combustible* sprinkler piping shall be used only for sprinkler systems in *residential occupancies* and other light-hazard *occupancies*. (See Note A-3.2.5.13.(1))

(2) *Combustible* sprinkler piping shall meet the requirements of ULC/ORD-C199P, "Combustible Piping for Sprinkler Systems."

(3) Except as permitted by Sentence (5), *combustible* sprinkler piping shall be separated from the area served by the sprinkler system, and from any other *fire compartment*, by ceilings, walls, or soffits consisting of, as a minimum,

(a) lath and plaster,

(b) gypsum board not less than 9.5 mm thick,

(c) plywood not less than 13 mm thick, or

(d) a suspended membrane ceiling with

  (i) steel suspension grids, and

  (ii) lay-in panels or tiles having a mass not less than 1.7 kg/m^2.

(4) Except as permitted by Sentence (5), *combustible* sprinkler piping may be located above a ceiling, provided that the distance between the edge of any ceiling opening that is not protected in conformance with Sentence (3) and the nearest sprinkler is not more than 300 mm.

(5) Where *combustible* sprinkler piping has been tested in conformance with ULC/ORD-C199P, "Combustible Piping for Sprinkler Systems," and has been shown to meet the requirements therein without additional protection, conformance to Sentences (3) and (4) is not required.

3.2.5.14. Sprinklered Service Space

(1) An automatic sprinkler system shall be installed in a *service space* referred to in Sentence 3.2.1.1.(8) if flooring for access within the *service space* is other than catwalks.

(2) The sprinkler system required by Sentence (1) shall be equipped with waterflow detecting devices, with each device serving not more than 1 *storey*.

(3) The waterflow detecting devices required by Sentence (2) shall be connected to the fire alarm system, to
(a) initiate an *alert signal* in a 2-stage system or an *alarm signal* in a single-stage system, and
(b) indicate separately on the fire alarm system annunciator the actuation of each device.

(4) If a *building* is *sprinklered*, sprinkler protection need not be provided in the space below a raised floor in a *computer room*
(a) if the optical fibre cables and electrical wires and cables in this space conform to the test requirements in Article 3.1.5.25.,
(b) if the *building* is of *noncombustible construction* and other *combustible* components are limited to those permitted in Subsection 3.1.5.,
(c) if this space is used to circulate conditioned air and the air handling system is designed to prevent the circulation of smoke upon a signal from a *smoke detector*,
(d) if all of this space is easily accessible by providing access sections or panels in the raised floor, and
(e) if the *computer room* is more than 2 000 m^2 and the annunciator has separate zone indicators of the actuation of *smoke detectors* located in this space so that the coverage for each zone is not more than 2 000 m^2.

3.2.5.15. Fire Department Connections

(1) The fire department connection for a standpipe system shall be located so that the distance from the fire department connection to a hydrant is not more than 45 m and is unobstructed.

(2) The fire department connection for an automatic sprinkler system shall be located so that the distance from the fire department connection to a hydrant is not more than 45 m and is unobstructed.

3.2.5.16. Portable Fire Extinguishers

(1) Portable extinguishers shall be provided and installed in all *buildings*, except within *dwelling units*, in conformance with the provisions of Division B of the Fire Code made under the *Fire Protection and Prevention Act, 1997*.

(2) In a Group B, Division 1 *major occupancy*, portable fire extinguishers are permitted to be located in secure areas, or in lockable cabinets provided
(a) identical keys for all cabinets are located at all supervisory or security stations, or
(b) electrical remote release devices are provided and are connected to an emergency power supply.

3.2.5.17. Protection from Freezing

(1) Equipment forming part of a fire protection system shall be protected from freezing if
(a) it could be adversely affected by freezing temperatures, and
(b) it is located in an unheated area.

3.2.5.18. Fire Pumps

(1) If a fire pump is installed, it shall be installed in accordance with the requirements of NFPA 20, "Standard for the Installation of Stationary Pumps for Fire Protection." (See Note A-3.2.5.18.(1))

3.2.6. Additional Requirements for High Buildings (See Note A-3.2.6.)

3.2.6.1. Application

(1) Except as provided in Sentence (2), this Subsection applies to a *building*
(a) of Group A, D, E or F *major occupancy* classification that is more than
  (i) 36 m high, measured between *grade* and the floor level of the top *storey*, or

(ii) 18 m high, measured between *grade* and the floor level of the top *storey*, and in which the cumulative or total *occupant load* on or above any *storey* above *grade*, other than the *first storey*, divided by 1.8 times the width in metres of all *exit* stairs at that *storey*, exceeds 300,

(b) containing a Group B *major occupancy* in which the floor level of the highest *storey* of that *major occupancy* is more than 18 m above *grade*,

(c) containing a *floor area* or part of a *floor area* located above the third *storey* designed or intended as a Group B, Division 2 or 3 *occupancy*,

(d) containing a Group C *major occupancy* in which the floor level of the highest *storey* of that *major occupancy* is more than 18 m above *grade*, or

(e) containing a *retirement home*, where the floor level of the highest *storey* of the *retirement home* is more than 18 m above *grade*.

r1 **(2)** Except as required by Clause 3.2.6.1.(1)(c), this Subsection applies to a *building* or part thereof constructed in conformance with Article 3.2.2.57. or 3.2.2.93. in which the floor level of the highest *storey* is more than 18 m above *grade*.

3.2.6.2. Limits to Smoke Movement

(1) A *sprinklered building* shall be designed in accordance with Sentences (2) to (6) and MMAH Supplementary Standard SB-4, "Measures for Fire Safety in High Buildings," to limit the danger to occupants and firefighters from exposure to smoke in a *building* fire.

(2) A *building* referred to in Sentence (1), shall be designed so that, during a period of 2 h after the start of a fire, each *exit* stair serving *storeys* below the lowest *exit level* will not contain more than 1% by volume of contaminated air from the fire floor, assuming an outdoor temperature equal to the January design temperature on a 2.5% basis determined in conformance with MMAH Supplementary Standard SB-1, "Climatic and Seismic Data."

(3) Each stairway that serves *storeys* above the lowest *exit level* shall have a vent to the outdoors, at or near the bottom of the stair shaft, that

(a) has an openable area of 0.05 m^2 for every door between the stair shaft and a *floor area*, but not less than 1.8 m^2,

(b) opens directly to the outdoors or into a vestibule that has a similar opening to the outdoors, and

(c) has a door or *closure* that

(i) is openable manually, and

(ii) can remain in the open position during a fire emergency.

(4) Measures shall be taken to limit movement of smoke from a fire in a *floor area* below the lowest *exit storey* into upper *storeys*.

(5) Except for exhaust fans in kitchens, washrooms and bathrooms in *dwelling units*, and except for fans used for smoke venting as required by Article 3.2.6.6., air moving fans in a system that serves more than 2 *storeys* shall be designed and installed so that in the event of a fire these fans can be stopped by means of a manually operated switch at the central alarm and control facility.

(6) Except as provided in Article 3.2.4.12. or where there is a conflict with other smoke control measures in the *building*, air-handling systems used to provide make-up air to *public corridors* serving *suites* in a Group C *major occupancy* shall not shut down automatically upon activation of the fire alarm so as to maintain corridor pressurization.

(7) A *building* that is not *sprinklered* shall be designed in accordance with MMAH Supplementary Standard SB-4, "Measures for Fire Safety in High Buildings," to limit the danger to occupants and firefighters from exposure to smoke in a *building* fire.

3.2.6.3. Connected Buildings

(1) If a *building* described in Article 3.2.6.1. is connected to any other *building*, measures shall be taken to limit movement of contaminated air from one *building* into another during a fire. (See Note A-3.2.6.3.(1))

(10) A dead-end corridor is permitted in a *mercantile occupancy* where
(a) the dead-end corridor
  (i) serves an *occupant load* of not more than 30 persons,
  (ii) is not more than 9 m long, and
  (iii) is provided with doors having self-closing devices, or
(b) there is a second and separate egress doorway from each room or *suite* not leading into a dead-end corridor.

(11) A dead-end corridor is permitted in a *low-* or *medium-hazard industrial occupancy* where
(a) the dead-end corridor
  (i) serves an *occupant load* of not more than 30 persons,
  (ii) is not more than 9 m long, and
  (iii) is provided with doors having self-closing devices, or
(b) there is a second and separate egress doorway from each room or *suite* not leading into a dead-end corridor.

(12) A dead-end corridor is permitted in a *high-hazard industrial occupancy* where there is a second and separate egress doorway from each room or *suite* not leading into a dead-end corridor.

3.3.1.10. Aisles

(1) Except as otherwise required by this Section, aisles shall be provided in conformance with the Fire Code made under the *Fire Protection and Prevention Act, 1997.*

3.3.1.11. Door Swing

(1) Except as permitted by Sentence (5) and Article 3.3.1.12., a door that opens into a corridor or other facility providing *access to exit* from a *suite* or room not located within a *suite*, shall swing on a vertical axis.

(2) Except as permitted by Article 3.3.1.12., a door that opens into a corridor or other facility providing *access to exit* from a room or *suite* shall swing in the direction of travel to the *exit* if the room or *suite* is used or intended for
(a) an *occupant load* more than 60,
(b) a *high-hazard industrial occupancy*, or
(c) a *hazardous classroom* in an elementary or secondary school.

(3) Every door that divides a corridor that is not wholly contained within a *suite* shall swing on a vertical axis in the direction of travel to the *exit* where the corridor provides *access to exit* for
(a) an *occupant load* more than 60,
(b) a *high-hazard industrial occupancy*,
(c) a *hazardous classroom* in an elementary or secondary school,
(d) a Group B, Division 2 or 3 *occupancy*, or
(e) a *retirement home*.

(4) If a pair of doors is installed in a corridor that provides *access to exit* in both directions, the doors shall swing in opposite directions, with the door on the right hand side swinging in the direction of travel to the *exit*.

(5) Doors that serve individual storage spaces not more than 28 m^2 in area in *self-service storage buildings* need not conform to Sentence (1).

3.3.1.12. Sliding Doors

(1) Except as permitted by Sentences (2) and 3.3.1.11.(5), a sliding door provided in the locations described in Article 3.3.1.11. shall
(a) be designed and installed to swing on the vertical axis in the direction of travel to the *exit* when pressure is applied, and
(b) be identified as a swinging door by means of a label or decal affixed to it.

(2) In a Group B, Division 1 *occupancy*, or in an *impeded egress zone* in other *occupancies*, sliding doors used in an *access to exit* need not conform to Sentence (1) and Article 3.3.1.11.

(3) Movable *partitions* used to separate a *public corridor* from an adjacent *business and personal services occupancy* or a *mercantile occupancy* need not conform to Sentence (1) and Sentences 3.3.1.11.(1) and (2) provided the *partitions* are not located in the only *means of egress.* (See Note A-3.3.1.12.(3))

3.3.1.13. Doors and Door Hardware (See also Sentence 3.8.3.6.(17))

(1) Except as required by Article 3.3.3.4. and Sentences 3.3.4.11.(11), 3.8.3.3.(1) and (2), a door that opens into or is located within a *public corridor* or other facility that provides *access to exit* from a *suite* shall
(a) provide a clear opening of not less than 850 mm, if there is only one door leaf,
(b) in a doorway with multiple leaves, have the active leaf providing a clear opening of not less than 850 mm,
(c) not open onto a step, and
e1 (d) have a threshold not more than 13 mm higher than the floor surface, except where
  (i) the threshold is used to contain spillage, or
  (ii) the doorway provides access to an exterior balcony, other than a balcony required by Sentence 3.3.1.7.(2).

(2) Except as provided in Sentences (6) and (7), a door in an *access to exit* shall be readily openable in travelling to an *exit* without requiring keys, special devices or specialized knowledge of the door opening mechanism.

(3) Except as permitted by Sentence (4), door release hardware shall be operable by one hand and the door shall be openable with not more than one releasing operation. (See also Sentence 3.8.3.6.(4))

(4) Except in a *retirement home*, an egress door from an individual *dwelling unit* or from a *suite* of *residential occupancy* is permitted to be provided with additional devices that require a releasing operation additional to the main door release hardware, provided the devices are readily operable from the inside without the use of keys, special devices or specialized knowledge. (See Note A-3.3.1.13.(4))

(5) Door release hardware shall be installed not more than 900 mm and 1 100 mm above the finished floor.

(6) An egress door in an *access to exit* serving a *contained use area* or an *impeded egress zone* is permitted to be equipped with locking devices, provided they can be released either locally or remotely in conformance with Sentence (8) or (9). (See Note A-3.3.1.13.(6))

(7) A door in an *access to exit* is permitted to be equipped with an electromagnetic locking device conforming to Sentence 3.4.6.16.(5), except that this permission does not apply to a door
(a) in an elementary or secondary school,
(b) a door leading from a Group F, Division 1 *occupancy*, or
(c) except as provided in Sentence (11), requiring a latch release device by Article 3.3.2.6.

(8) Local locking devices permitted by Sentence (6) shall be operable by a key from both sides of the door.

(9) Controls for the remote release of door locking devices permitted by Sentence (6) shall be located in an area readily available to security personnel.

(10) Locking devices permitted by Sentence (6) that are electrically operated shall be
(a) designed to operate on emergency power, and
(b) capable of manual release by security personnel.

(11) A door in an *access to exit* in a *gaming premise* is permitted to be equipped with an electromagnetic locking device conforming to Sentences 3.4.6.16.(5) and (8).

(2) Except as permitted by Sentence (4), in a Group B, Division 3 *occupancy*, walls between sleeping rooms and adjacent rooms shall be constructed as *fire separations* having a *fire-resistance rating* not less than 1 h, except that the *fire-resistance rating* need not be more than 45 min where the floor assembly is not required to be more than 45 min.

(3) Except as permitted by Sentence (4), in a Group B, Division 3 *occupancy*, walls separating corridors serving sleeping rooms from adjacent rooms shall be constructed as *fire separations* having a *fire-resistance rating* not less than 1 h, except that the *fire-resistance rating* need not be more than 45 min where the floor assembly is not required to be more than 45 min.

(4) The walls separating sleeping rooms from adjacent rooms and corridors in those parts of a *floor area* classified as a Group B, Division 3 *occupancy* shall be constructed as *fire separations* but are not required to have a *fire-resistance rating* if
(a) those parts of the *floor area* contain sleeping accommodation for not more than 10 persons, and
(b) not more than 6 occupants require assistance in evacuation in case of an emergency.

(5) The door in the *fire-separation* required in Sentence (4) is permitted to be equipped with a roller latch and need not be provided with a self-closing device.

3.3.3.3. Corridors

(1) A corridor used by the public or serving patients or residents shall have no dead-end portion unless the area served by the dead-end portion has a second and separate *means of egress*.

(2) A corridor serving patients in a hospital shall be not less than 2 400 mm wide.

(3) Except as permitted in Sentence (5), a corridor serving residents who are not ambulatory in a Group B, Division 2 or 3 *occupancy* shall be not less than 1 650 mm wide.

(4) Paired doors in a corridor serving patients or residents shall
(a) swing in opposite directions, the right hand door swinging in the direction of travel, and
(b) be not less than 1 100 mm wide.

(5) A corridor in a Group B, Division 3 *occupancy* that contains sleeping accommodation for not more than 10 persons and not more than 6 occupants require assistance in evacuation in case of an emergency need not comply with Sentence (3).

3.3.3.4. Doorway Width

(1) In a Group B, Division 2 or 3 *occupancy*, the minimum clear width of doorways through which it is necessary to move a patient or resident in a bed shall be 1 050 mm. (See Note A-3.3.3.4.(1))

3.3.3.5. Hospitals and Long-Term Care Homes

(1) *Floor areas* containing patients' or residents' sleeping rooms in a hospital or long-term care home shall conform to Sentences (2) to (12). (See Note 3.3.3.5.(1))

(2) Except as permitted by Sentence (3), a *floor area* containing patients' or residents' sleeping rooms in a hospital or long-term care home shall be divided into no fewer than two *fire compartments*, each not more than 1 000 m^2 in area.

(3) The *floor area* on either side of a *horizontal exit* conforming to Article 3.4.6.10. is permitted to be considered as a *fire compartment* in applying the requirements of this Article.

(4) Except as permitted by Sentence (5), *fire separations* separating *fire compartments* required by Sentence (2) shall have a *fire-resistance rating* not less than 1 h.

(5) The *fire-resistance rating* of a *fire separation* referred to in Sentence (4) is permitted to be less than 1 h but not less than 45 min provided the *fire-resistance rating* required by Subsection 3.2.2. is permitted to be less than 1 h for
(a) the floor assembly above the *floor area*, or
(b) the floor assembly below the *floor area*, if there is no floor assembly above.

(6) Reserved.

(7) The travel distance from any point within each *fire compartment* referred to in Sentence (2) to a door to an adjoining *fire compartment* shall be not more than 45 m.

(8) Each *fire compartment* referred to in Sentence (2) shall be capable of accommodating, in addition to its own occupants, the occupants of the largest adjacent *fire compartment* based on a clear floor space of 2.5 m^2 per patient or resident in the adjacent *fire compartment*.

(9) Except as permitted by Sentences (10) and (11), walls between patients' or residents' sleeping rooms and the remainder of the *floor area* shall be constructed as *fire separations* but are not required to have a *fire-resistance rating* unless a *fire-resistance rating* is required by other provisions in this Part.

(10) The *fire separation* requirements of Sentence (9) do not apply to walls within a group of intercommunicating patients' or residents' rooms, provided the group of rooms does not
(a) contain more than 5 patients or residents, or
(b) include storage, bathing or toilet facilities serving persons not occupying the group of rooms.
(See Note A-3.3.3.5.(10))

(11) A door in a *fire separation* required by Sentence (9) is permitted to be equipped with a roller latch.

(12) A *fire separation* required by Sentence (9) shall not contain any grilles, louvres or other openings.

3.3.3.6. Protection for Special Care and Treatment Facilities

(1) Compartments containing rooms such as operating rooms, recovery rooms, delivery rooms, intensive care units and critical care units, from which it is impracticable to move patients in an emergency, shall be
(a) separated from adjacent spaces by *fire separations* having a *fire-resistance rating* not less than 1 h, and
(b) provided with a mechanical air supply so that during a period of 2 h after the start of a fire in another space, the compartments will not contain more than 1% by volume of contaminated air from the fire area.

3.3.3.7. Contained Use Areas

(1) A *contained use area* shall conform to Sentences (2) to (5).

(2) A *contained use area* shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* not less than 1 h.

(3) Except as permitted by Sentence (4), a *building* that includes a *contained use area* shall be *sprinklered* throughout.

r1 **(4)** A *contained use area*, in a *building* for which Articles 3.2.2.20. to 3.2.2.93. do not require the installation of an automatic sprinkler system, is not required to be *sprinklered* as required by Sentence (3) provided
(a) the *building* is designed so that during a period of 2 h after the start of a fire in the *contained use area*, other *fire compartments* will not contain more than 1% by volume of contaminated air from the *contained use area*,
(b) the *building* is designed so that during a period of 2 h after the start of a fire in another part of the *building*, the *contained use area* will not contain more than 1% by volume of contaminated air from the other part of the *building*,
(c) all doors are designed to be remotely released in conformance with Sentence 3.3.1.13.(6), and
(d) the *contained use area* does not contain any rooms lined with *combustible* padding.

(4) Every *barrier-free* path of travel less than 1 600 mm in width shall be provided with an unobstructed space not less than 1 800 mm in width and 1 800 mm in length located not more than 30 m apart. (See Note A-3.8.1.3.(4))

(5) Where the headroom of an area in a *barrier-free* path of travel is reduced to less than 1 980 mm, a guardrail or other barrier with its leading edge at or below 680 mm from the finished floor shall be provided. (See Note A-3.8.1.3.(5) and (6)(b))

(6) A normally occupied *floor area* that is not required by Article 3.8.2.1. to have a *barrier-free* path of travel shall meet the following requirements:

(a) interior walking surfaces throughout the normally occupied *floor area* shall comply with Clauses (2)(a) to (e), and
(b) where the headroom of an area in a corridor or aisle in the normally occupied *floor area* is reduced to less than 1 980 mm, a guardrail or other barrier with its leading edge at or below 680 mm from the finished floor shall be provided. (See Note A-3.8.1.3.(5) and (6)(b))

3.8.1.4. Escalators and Moving Walks

(1) In a *building* in which an escalator or inclined moving walk provides access to any floor level above or below the entrance floor level, an interior *barrier-free* path of travel shall be provided to that floor level. (See Note A-3.8.1.4.(1))

(2) The route from the escalator or inclined moving walk to the *barrier-free* path of travel required by Sentence (1) shall be clearly indicated by appropriate signs.

(3) In a *building* in which a moving walk provides access between areas on the same floor level, a *barrier-free* path of travel shall be provided between the areas served by the moving walk.

3.8.1.5. Controls

(1) Except as required by Sentences 3.5.2.2.(1) and 3.8.3.5.(1) for elevators and Sentence 3.8.3.3.(17) for power door operator controls, controls for the operation of *building* services or safety devices, including electrical switches, thermostats and intercom switches, intended to be operated by the occupant and located in a *barrier-free* path of travel shall

(a) be mounted
  (i) 1 200 mm above the finished floor, in the case of a thermostat or a manual station, and
  (ii) not less than 900 mm and not more than 1 100 mm above the finished floor, in the case of all other controls, and
(b) be located so as to be adjacent to and centred on either the length or the width of a clear floor space of 810 mm by 1 370 mm, and
(c) be operable
  (i) using one hand, without requiring tight grasping, pinching with fingers or twisting of the wrist, and with a force of not more than 22.2 N, in the case of a manual station, and
  (ii) using a closed fist and with a force of not more than 22.2 N, in the case of all other controls.

(See Note A-3.8.1.5.(1))

(2) A signal intended for the public to indicate the operation of a *building* security system that controls access to a *building* shall consist of an audible and visual signal.

3.8.1.6. Illumination

(1) All portions of a *barrier-free* path of travel shall be equipped to provide a level of illumination in accordance with Sentence 3.2.7.1.(1).

3.8.2. Occupancy Requirements

3.8.2.1. Areas Requiring Barrier-Free Path of Travel

(1) Except as permitted by Sentence (3), a *barrier-free* path of travel from the entrances required by Sentences 3.8.1.2.(1) and (2) to be *barrier-free* shall be provided

e1 (a) throughout the entrance *storey*, and

(b) within all normally occupied *floor areas* and rooftop amenity spaces, unless as permitted by Sentence (2). (See Note A-3.8.2.1.(b)) (See Article 3.3.1.7. for additional requirements regarding *floor areas* above or below the *first sto*rey to which a *barrier-free* path of travel is required).

(See Note A.3.8.2.1.(1))

(2) A *barrier-free* path of travel described in Clause (1)(b) is not required to extend

(a) to *floor areas* or portions of *floor areas* containing a Group B, Division 2 or 3 *occupancy* that are not required by Article 3.5.2.1. to be connected by a *ramp* or served by an elevator,

(b) to *floor areas* containing Group C or Group D *occupancies* that are located in a *building* that

(i) is three or fewer *storeys* in *building height*, and

(ii) has a *building area* not exceeding 600 m^2,

(See Note A.3.8.2.1.(2)(b))

(c) to portions of restaurants and licensed beverage establishments where the same amenities and uses are provided on other *floor areas* that have a *barrier-free* path of travel, or

(d) to portions of child care facilities that have all entrance doors at floor levels that do not have a *barrier-free* path of travel.

(See Note A-3.8.2.1.(2))

(3) A *barrier-free* path of travel described in Sentence (1) is not required

(a) into *service rooms*,

(b) into elevator machine rooms,

(c) into janitors' rooms,

(d) into *service spaces*,

(e) into crawl spaces,

(f) into *attic or roof spaces*,

(g) into *high-hazard industrial occupancies*,

(h) within portions of a *floor area* with fixed seats in an *assembly occupancy* where these portions are not part of the *barrier-free* path of travel to

(i) spaces designated for wheelchair use,

(ii) seats designated for *adaptable seating*, or

(iii) spaces for the storage of wheelchairs and *mobility assistive devices*,

(i) to *suites* of *residential occupancy* that are in *storeys* other than the entrance *storey* and that have all entrance doors at floor levels that are not required to have a *barrier-free* path of travel,

(j) except as required by Sentence (5), on the inside of a *suite* of *residential occupancy*,

(k) to portions of a *floor area* that are not at the same level as the entry level, provided amenities and uses provided on any raised or sunken level are accessible on the entry level by means of a *barrier-free* path of travel,

(l) within a parking level with no *barrier-free* parking spaces, or

(m) to the floor level above or below the entrance level in *buildings* no more than 2 *storeys* in *building height* or in 2-*storey suites*, unless the floor level above or below

(i) is served by a passenger elevator, a platform-equipped passenger-elevating device, an escalator or an inclined moving walk,

(ii) is 600 m^2 or more in *floor area*,

(iii) contains facilities that are not contained on the entrance level, but that are integral to the principal function of the entrance level, or

(iv) contains an *assembly occupancy* more than 100 m^2 in *floor area.*

(See Note A-3.8.2.1.(3)(m))

(See Note A-3.8.2.1.(3))

3.8.3.16. Drinking Fountains (See Note A-3.8.3.16.)

(1) Where more than one drinking fountain is provided, at least one shall be a *barrier-free* fountain that conforms to Sentences (2) and (3).

(2) A *barrier-free* drinking fountain shall
(a) have a spout located near the front of the unit not more than 915 mm above the finished floor,
(b) be equipped with controls that are easily operated from a wheelchair using one hand with a force of not more than 22 N or operates automatically,
(c) project the water at least 100 mm high,
(d) provide the water stream at a vertical angle of up to
  (i) 30º, where the spout is located less than 75 mm from the front of the fountain, or
  (ii) 15º, where the spout is located not less than 75 mm and not more than 125 mm from the front of the fountain,
(e) be detectable by a cane at a level at or below 680 mm from the finished floor, and
(f) where the drinking fountain is cantilevered, meet the following requirements:
  (i) be mounted not more than 915 mm above the finished floor,
  (ii) provide a clearance height under the fountain of not less than 735 mm above the finished floor,
  (iii) have a clear depth under the fountain of not less than 450 mm,
  (iv) have a clear width under the fountain of not less than 760 mm,
  (v) have a toe clearance height under the fountain of at least 350 mm above the finished floor from a point 300 mm back from the front edge to the wall, and
  (vi) have a depth at the base of the fountain of at least 700 mm.

(3) A *barrier-free* drinking fountain required by Sentence (1) shall have a clear floor space in front of, or adjacent to, the fountain that is a minimum of 810 mm deep and 1 370 mm wide.

(4) Where more than one drinking fountain is provided in a normally occupied *floor area* that is not required by Article 3.8.2.1. to have a *barrier-free* path of travel, at least one shall be a *barrier-free* fountain that conforms to Sentences (2) and (3).

3.8.3.16A. Water-Bottle Filling Stations

(1) Where one or more water-bottle filling stations are provided at each location, at least one shall be equipped with controls that
(a) activate automatically, or
(b) comply with Clause 3.8.1.5.(1)(c).

(2) Water-bottle filling stations required by Sentence (1) that are located in a *storey* where a *barrier-free* path of travel is required shall
(a) be located along the *barrier-free* path of travel,
(b) have a clear floor space of 800 mm by 1 350 mm in front of them, (See Note A-3.8.3.16A.(2)(b))
(c) where they have frontal access, provide a knee clearance in accordance with Clause 3.8.3.11.(1)(c),
(d) be operable at a height of not more than 1 200 mm above the floor, and (See Note A-3.8.3.16A.(2)(d))
(e) be equipped with controls that
  (i) activate automatically, or
  (ii) comply with Sentence 3.8.1.5.(1).

(See Sentences 3.3.1.8.(2) and (3) on horizontal projections.)

3.8.3.17. Platforms

(1) A tactile attention indicator conforming to Article 3.8.3.18. shall be installed along any edge of a platform that is
(a) not protected by a *guard*, and
(b) higher than 250 mm above the finished floor or ground or sloped steeper than 1 in 3.

(2) Sentence (1) does not apply to the front edges of *stages*.

3.8.3.18. Tactile Attention Indicators

r1 **(1)** Where a tactile attention indicator is required, it shall conform to Sentence (2) and Clauses 5.1.1. and 5.1.2. of ISO 23599, "Assistive Products for Blind and Vision-Impaired Persons – Tactile Walking Surface Indicators."

(2) The depth of the tactile attention indicator shall be not less than 300 mm and not more than 610 mm.

Section 3.9. Portable Classrooms

3.9.1. Scope

3.9.1.1. Application

(1) Except as provided in this Section, the requirements in this Division apply to portable classrooms.

3.9.1.2. Heating Systems

(1) Heating systems and equipment in a portable classroom shall be designed and installed in accordance with Section 6.2.

3.9.2. Interior Finish

3.9.2.1. Flame-Spread Ratings

(1) Interior finish material used on a wall or ceiling of a portable classroom shall have a *flame-spread rating* of 150 or less.

3.9.3. Application (See Note A-3.9.3.)

3.9.3.1. Building Areas

(1) A single portable classroom shall be not more than 100 m^2 in *building area*, and not more than 1 *storey* in *building height*.

(2) For the purposes of Subsection 3.2.2., where the horizontal distance between portable classrooms is less than 6 m, a group of portable classrooms may be considered as a single *building* with a *building area* equal to the aggregate area of the portable classrooms.

3.9.3.2. Spatial Separations

(1) The requirements in Subsection 3.2.3. need not be provided between individual portable classrooms where the distance between the classrooms is 6 m or more.

(2) The requirements in Subsection 3.2.3. need not be provided between individual portable classrooms within a group where

(a) the portable classrooms are in groups where
  (i) the distance between the classrooms is less than 6 m,
  (ii) the number of classrooms in a group is not more than six, and
  (iii) the distance between groups of classrooms is 12 m or more, or

3.11.11. Service Rooms and Storage for All Public Pools

3.11.11.1. Service Rooms and Storage Facilities

(1) In addition to the requirements of this Subsection, *service rooms* shall comply with the requirements of Sentences 3.6.2.1.(5), 3.6.2.1.(7) and 3.6.2.1.(8) and Articles 3.5.3.3. and 3.6.2.2.

(2) Where compressed chlorine gas is used as a pool water disinfectant, the cylinders or containers of gas shall be located in a *service room* that

(a) except as provided in Sentences 3.1.9.4.(4), (5) and (7) to (9), is separated from the remainder of the *building* by a 1 h *fire separation* that is substantially gas tight,
(b) is designed for the sole purpose of containing all installed pressurized chlorine gas apparatus and piping and storing all chlorine gas containers or chlorine gas cylinders that are individually secured against toppling,
(c) is located at or above ground level,
(d) is provided with an *exit* door opening to the outdoors,
(e) has screened openings to the outdoors with at least one opening located within 150 mm from the floor and at least one opening located within 150 mm from the ceiling, each opening being 2% of the area of the floor,
(f) is equipped with emergency mechanical ventilation capable of producing at least 30 air changes per hour, taking suction at a maximum of 900 mm above the floor level and discharging at least 2 500 mm above ground level directly to the outdoors, and
(g) contains a platform weigh scale of at least 135 kg capacity for each chlorine cylinder in use.

(3) Storage facilities shall be provided for the safe storage of all chemicals required in pool operations.

(4) The storage facilities shall be ventilated and shall be equipped with a water hose connection and a floor drain.

(5) *Service rooms* and storage facilities, including rooms and facilities that contain electrical or mechanical equipment or chemicals or chemical feeders, shall be equipped with a secure locking device.

Section 3.12. Public Spas

3.12.1. General

3.12.1.1. Application

(1) This Section applies to the design and *construction* of site-assembled *public spas* and factory-built *public spas*.

(2) If material alterations to a *public spa* or the equipment installed in a *public spa* affect the bottom slope, the water volume or the capacity of the water circulation system, the adversely affected portions shall comply with the requirements of this Division.

(3) Except as provided in Sentence (4), if material alterations or repairs concern any pool fitting that passes water or air, or both, in or out of the pool tank, the affected fitting shall comply with Sentences 3.11.8.1.(20) and 3.12.4.1.(4) to (10).

(4) If the material alterations or repairs concern a fitting cover or grille, the affected fitting cover or grille shall comply with Sentences 3.12.4.1.(7) to (10).

(5) For the purposes of this Section, every reference to a *public pool* or a *recirculation system* in a definition in Article 1.4.1.2. of Division A, or a Sentence or Clause in Section 3.11. that is made applicable to *public spas* by this Section, is deemed to be a reference to a *public spa* or water circulation system, respectively.

3.12.2. Public Spa and Deck Design and Construction Requirements

3.12.2.1. Construction Requirements

(1) In addition to the requirements of this Subsection, *public spas* shall comply with the requirements of Sentences 3.11.3.1.(13) to (18), (20), (21) and (23) and Clause 3.11.3.1.(25)(a).

(2) A *public spa* shall be constructed to have a water depth of not more than 1 200 mm.

(3) The slope of the bottom of any portion of a *public spa* shall not exceed 8%.

(4) A *public spa* shall be surrounded by a hard-surfaced *pool deck* that
(a) shall have a minimum clear deck space of not less than 1.8 m at the main entrance point,
(b) shall have a clear deck space of 900 mm on all sides, except as required by Clause (a) and permitted by Sentence (5),
(c) shall be sloped away from the pool to waste drains or to adjacent lower ground at a slope of between 2% and 4%, in the case of an outdoor *public spa*, and
(d) shall be impervious and sloped away from the pool to waste drains at a slope of between 1% and 4%, in the case of an indoor *public spa*.

(5) One section of the hard-surfaced *pool deck* that does not exceed 25% of the perimeter of the *public spa* may have a minimum clear deck space of not more than 300 mm if
(a) the *public spa* has an area less than 6 m^2, and
(b) the *public spa* has no interior dimension more than 2.5 m.

e1 **(6)** The maximum depth of water to a seat or bench in a *public spa* shall be 600 mm.

(7) If a set of steps is provided for entry into and egress from the *public spa* water, the steps
(a) shall be equipped with a handrail,
(b) shall have a non-slip surface, and
(c) shall have a band of contrasting colour along the entire juncture of the side and top of the edges.

(8) Every *public spa* shall be provided with dressing rooms, water closets and shower facilities that are conveniently available on the premises.

(9) Except where no space is provided between ladder treads and the spa wall, the space between the spa wall and submerged portions of any treads of a ladder for entry into and egress from the water shall be not more than 150 mm and not less than 75 mm.

3.12.3. Ramps and Access into Public Spas

3.12.3.1. Ramps into Public Spas

(1) Not more than 50% of the total perimeter of a *public spa* may be replaced by one or more *ramps* that permit a bather seated in a wheelchair to enter the water with or without the wheelchair.

(2) If a *public spa* has one or more *ramps* described in Sentence (1), the *public spa* shall comply with Article 3.11.5.1. and Sentences 3.11.5.2.(3) and (4).

(3) Sanitary privies, chemical closets or other means for the disposal of human waste may be provided in lieu of toilet fixtures.

3.14.1.9. Provision for Firefighting

(1) Access shall be provided to all tents for the purpose of firefighting.

3.14.1.10. Electrical Systems

(1) The electrical system and equipment in a tent, including electrical fuses and switches, shall be inaccessible to the public.

(2) Cables on the ground in areas used by the public in a tent shall be placed in trenches or protected by covers to prevent damage from traffic.

3.14.2. Air-Supported Structures

3.14.2.1. Application

(1) Except as provided in this Subsection, the requirements of this Division apply to *air-supported structures*.

3.14.2.2. General

(1) *Air-supported structures* shall not be used for Groups B, C or Group F, Division 1 *major occupancies* or for classrooms.

(2) Except where no *fire separation* is required between *major occupancies*, *air-supported structures* shall contain not more than one *major occupancy*.

r1 **(3)** Except as provided in Sentence (5), *air-supported structures* are exempt from complying with Articles 3.2.2.20. to 3.2.2.93., except for maximum *building* size.

(4) *Air-supported structures* may be designed with interior walls, *mezzanines*, or similar *construction*.

r1 **(5)** Interior construction contained within *air-supported structures* must meet the construction requirements of Articles 3.2.2.20. to 3.2.2.93.

3.14.2.3. Spatial Separation

(1) Except as provided in Sentences (2) to (5), *air-supported structures* shall not be erected closer than 3 m to other structures on the same property or to the property line.

(2) *Air-supported structures* not occupied by the public need not be separated from one another, and are permitted to be erected closer than 3 m from other structures on the same property where such closer spacing does not create a hazard to the *building* occupants or the public.

(3) Except as provided in Sentence (4), an *air-supported structure* is permitted to be attached to another *building* provided the *building* to which it is attached

(a) conforms to the requirements of other Parts of this Division based on the total *building areas* of the *air-supported structure* and the attached *building*,
(b) is *sprinklered* throughout, and
(c) is separated from the *air-supported structure* by a *fire separation* having a *fire-resistance rating* of not less than 1 h.

(4) An *air-supported structure* is permitted to be attached to another *building* provided the *building* to which it is attached
(a) has a *building area* not more than 200 m^2,
(b) conforms to the requirements of other Parts of the Code based on the *building area* of the attached *building*, and
(c) is *sprinklered* or separated from the *air-supported structure* by a *fire separation* having a *fire-resistance rating* of not less than 1 h.

(5) Where an *air-supported structure* is to be constructed in proximity to existing above ground electrical conductors, the *air-supported structure* shall be constructed in accordance with Article 3.1.20.1.

3.14.2.4. Clearances to Flammable Material

(1) The ground enclosed by an *air-supported structure* and for not less than 3 m outside of such structure shall be clear of all flammable or *combustible* material or vegetation that will carry fire.

3.14.2.5. Flame Resistance

(1) *Air-supported structures* shall be constructed of material conforming to CAN/ULC-S109, "Standard Method for Flame Tests of Flame-Resistant Fabrics and Films," or NFPA 701, "Standard Methods of Fire Tests for Flame Propagation of Textiles and Films."

(2) Materials for fabrics used in connection with *air-supported structures* are exempt from compliance with the requirements for *flame-spread ratings* for interior finishes in Subsection 3.1.13.

3.14.2.6. Emergency Air Supply

(1) An *air-supported structure* designed for an *assembly occupancy* with an *occupant load* of more than 200 persons shall have either an automatic emergency engine-generator set capable of powering one blower continuously for 4 h, or a supplementary blower powered by an automatic internal combustion engine.

3.14.2.7. Electrical Systems

(1) The electrical system and equipment in an *air-supported structure*, including electrical fuses and switches, shall be inaccessible to the public.

(2) Cables on the ground in areas used by the public in an *air-supported structure* shall be placed in trenches or protected by covers to prevent damage from traffic.

Section 3.15. Signs

3.15.1. Scope

3.15.1.1. Application

(1) Except as provided otherwise in Article 3.15.1.2. this Section shall apply to the erection of all signs.

3.15.1.2. Exceptions

(1) The following signs shall not be subject to the provisions of this Section
(a) signs for regulating traffic or similar devices, legal notices or warnings at railroad crossings,

(a) forces determined in Article 4.1.8.11. or 4.1.8.12. applied to the diaphragm are increased to reflect the lateral load capacity of the SFRS, plus forces in the diaphragm due to the transfer of forces between elements of the SFRS associated with the lateral load capacity of such elements and accounting for discontinuities and changes in stiffness in these elements, or
(b) a minimum force corresponding to the design-based shear divided by N for the diaphragm at level x.
(See Note A-4.1.8.15.(1))

(2) Steel deck roof diaphragms in *buildings* of less than 4 *storeys* or wood diaphragms that are designed and detailed according to the applicable referenced design standards to exhibit ductile behaviour shall meet the requirements of Sentence (1), except that they may yield and the forces shall be
(a) for wood diaphragms acting in combination with vertical wood shear walls, equal to the lateral earthquake design force,
(b) for wood diaphragms acting in combination with other SFRSs, not less than the force corresponding to $R_dR_o = 2.0$, and
(c) for steel deck roof diaphragms, not less than the force corresponding to $R_dR_o = 2.0$.

(3) Where diaphragms are designed in accordance with Sentence (2), the struts shall be designed in accordance with Clause (1)(a), and the collectors, chords and connections between the diaphragms and the vertical elements of the SFRS shall be designed for forces corresponding to the capacity of the diaphragms in accordance with the applicable CSA standards. (See Note A-4.1.8.15.(3))

(4) For single-*storey buildings* with steel deck or wood roof diaphragms designed with a value of R_d greater than 1.5 and where the calculated maximum relative deflection, Δ_D, of the diaphragm under lateral loads exceeds 50% of the average *storey* drift, Δ_B, of the adjoining vertical elements of the SFRS, dynamic magnification of the inelastic response due to the in-plane diaphragm deformations shall be accounted for in the design as follows:
(a) the vertical elements of the SFRS shall be designed and detailed to any one of the following:
    (i) to accommodate the anticipated magnified lateral deformations taken as $R_oR_d(\Delta_B + \Delta_D) - R_o\Delta_D$,
    (ii) to resist the forces magnified by $R_d(1 + \Delta_D/\Delta_B)/(R_d + \Delta_D/\Delta_B)$, or
    (iii) by a special study, and
(b) the roof diaphragm and chords shall be designed for in-plane shears and moments determined while taking into consideration the inelastic higher mode response of the structure.
(See Note A-4.1.8.15.(4))

(5) Where the Seismic Category is SC3 or SC4, the elements supporting any discontinuous wall, column or braced frame shall be designed for the lateral load capacity of the components of the SFRS they support. (See Note A-4.1.8.15.(5).)

(6) Where structures have vertical variations of R_dR_o satisfying Sentence 4.1.8.9.(4), the elements of the SFRS below the level where the change in R_dR_o occurs shall be designed for the forces associated with the lateral load capacity of the SFRS above that level. (See Note A-4.1.8.15.(6))

(7) Where earthquake effects can produce forces in a column or wall due to lateral loading along both orthogonal axes, account shall be taken of the effects of potential concurrent yielding of other elements framing into the column or wall from all directions at the level under consideration and as appropriate at other levels. (See Note A-4.1.8.15.(7))

(8) The design forces associated with the lateral capacity of the SFRS need not exceed the forces determined in accordance with Sentence 4.1.8.7.(1) with R_dR_o taken as 1.0, unless otherwise provided by the applicable referenced design standards for elements, in which case the design forces associated with the lateral capacity of the SFRS need not exceed the forces determined in accordance with Sentence 4.1.8.7.(1) with R_dR_o taken as less than or equal to 1.3. (See Note A-4.1.8.15.(8))

(9) *Foundations* need not be designed to resist the lateral load overturning capacity of the SFRS, provided the design and the R_d and R_o for the type of SFRS used conform to Table 4.1.8.9. and that the *foundation* is designed in accordance with Sentence 4.1.8.16.(4).

(10) *Foundation* displacements and rotations shall be considered as required by Sentence 4.1.8.16.(1).

4.1.8.16. Foundation Provisions

(1) The increased displacements of the structure resulting from *foundation* movement shall be shown to be within acceptable limits for both the SFRS and the structural framing elements not considered to be part of the SFRS. (See Note A-4.1.8.16.(1).)

(2) Except as provided in Sentences (3) and (4), *foundations* shall be designed to have factored shear and overturning resistances greater than the lateral load capacity of the SFRS. (See Note A-4.1.8.16.(2))

(3) The shear and overturning resistances of the *foundation* determined using a bearing stress equal to 1.5 times the factored bearing strength of the *soil* or *rock* and all other resistances equal to 1.3 times the factored resistances need not exceed the design forces determined in Sentence 4.1.8.7.(1) using $R_dR_o = 1.0$, except that the factor of 1.3 shall not apply to the portion of the resistance to uplift or overturning resulting from gravity loads.

(4) A *foundation* is permitted to have a factored overturning resistance less than the lateral load overturning capacity of the supported SFRS, provided the following requirements are met:
(a) neither the *foundation* nor the supported SFRS are constrained against rotation, and
(b) the design overturning moment of the *foundation* is
  (i) not less than 75% of the overturning capacity of the supported SFRS, and
  (ii) not less than that determined in Sentence 4.1.8.7.(1) using $R_dR_o = 2.0$. (See Note A-4.1.8.16.(4))

(5) The design of *foundations* shall be such that they are capable of transferring earthquake loads and effects between the *building* and the ground without exceeding the capacities of the *soil* and *rock*.

(6) Where the Seismic Category is SC3 or SC4, the following requirements shall be satisfied:
(a) *piles* or *pile* caps, drilled piers, and *caissons* shall be interconnected by continuous ties in not less than two directions (See Note A-4.1.8.16.(6)(a)),
(b) *piles*, drilled piers, and *caissons* shall be embedded a minimum of 100 mm into the *pile* cap or structure, and
(c) *piles*, drilled piers, and *caissons*, other than wood *piles*, shall be connected to the *pile* cap or structure for a minimum tension force equal to 0.15 times the factored compression load on the *pile*.

(7) Where the Seismic Category is SC3 or SC4, *basement* walls shall be designed to resist earthquake lateral pressures from backfill or natural ground. (See Note A-4.1.8.16.(7).)

(8) Where the Seismic Category is SC4, the following requirements shall be satisfied:
(a) *piles*, drilled piers, or *caissons* shall be designed and detailed to accommodate cyclic inelastic behaviour when the design moment in the element due to earthquake effects is greater than 75% of its moment capacity, and (See Note A-4.1.8.16.(8)(a))
(b) spread footings founded on *soil* designated as X_V, where V_{s30} is less than or equal to 180 m/s, X_E or X_F shall be interconnected by continuous ties in not less than two directions.

e1 **(9)** Each segment of a tie between elements that is required by Clause (6)(a) or (8)(b) shall be designed to carry by tension or compression a horizontal force at least equal to the greatest factored *pile* cap or column vertical load in the elements it connects, multiplied by a factor of $0.1I_ES(0.2)$, unless it can be demonstrated that equivalent restraints can be provided by other means. (See Note A-4.1.8.16.(9))

(10) The potential for liquefaction of the *soil* and its consequences, such as significant ground displacement and loss of *soil* strength and stiffness, shall be evaluated based on the ground motion parameters referenced in Subsection 1.1.3., as modified by Article 4.1.8.4., and shall be taken into account in the design of the structure and its *foundations*. (See Note A-4.1.8.16.(10))

4.4.4. Guards Over Retaining Walls

4.4.4.1. Guards Over Retaining Walls

(1) Every retaining wall that is designated in Sentence 1.3.1.1.(1) of Division A shall be protected by *guards* on all open sides where the public has access to open space at the top of the retaining wall.

4.4.5. Anchor Systems on Building Exterior

4.4.5.1. Anchor Systems on Building Exterior

(1) Where suspended maintenance and window cleaning operations are intended to be carried out on the exterior of a *building* described in Article 1.1.2.2. of Division A, anchor systems shall be provided where any portion of the roof is more than 8 m above adjacent ground level.

r1 **(2)** Except as provided in Sentence (3), the anchor systems in Sentence (1) shall be designed, installed and tested in conformance with CSA Z271, “Design of suspended access equipment.”

(3) Other anchor systems may be used where such systems provide an equal level of safety.

(4) The anchor system material shall be made of stainless steel, or other corrosion resistant base material, or from steel that is hot dipped galvanized, in accordance with CSA G164, “Hot dip galvanizing of irregularly shaped articles.

(6) The design and installation of hydronic heating systems shall conform to
(a) CSA B214, "Installation code for hydronic heating systems," or
(b) good engineering practice appropriate to the circumstances such as described in Article 6.2.1.1.

(7) Solid fuel-burning *stoves*, *furnaces* and hydronic heating systems designed to burn solid fuels, other than coal, shall conform to the particulate emission limits of,
(a) CSA B415.1, "Performance Testing of Solid-Fuel-Burning Heating Appliances," or
(b) the "Standards of Performance for New Residential Wood Heaters," set out in Subpart AAA of Part 60 of Title 40 of the Code of Federal Regulations, published by the United States Environmental Protection Agency, as it read on March 16, 2015.

6.2.1.6. Installation – General

(1) Equipment requiring periodic maintenance and forming part of a heating, ventilating or *air-conditioning* system shall be installed with provision for access for inspection, maintenance, repair and cleaning. (See Note A-6.2.1.6.(1)

(2) Mechanical equipment shall be provided with *guards* so as to prevent injury.

(3) Heating, ventilating or *air-conditioning* systems shall be protected from freezing if they may be adversely affected by freezing temperatures.

6.2.1.7. Asbestos

(1) Asbestos shall not be used in heating, ventilating or *air-conditioning* systems or equipment.

6.2.1.8. Combustible Tubing

(1) *Combustible* tubing for pneumatic controls may be used in *buildings* required to be of *noncombustible construction* provided it has an outside diameter not exceeding 10 mm.

6.2.2. Incinerators

6.2.2.1. Applicable Standard

(1) The design, construction, installation and material alteration of every indoor incinerator shall conform to NFPA 82, "Standard on Incinerators and Waste and Linen Handling Systems and Equipment."

6.2.3. Solid Fuel Storage

6.2.3.1. Solid Fuel Storage Bins

(1) A storage bin for solid fuel shall not be located above a sewer opening or drain opening.

(2) Storage bins for solid fuel shall be designed and constructed so that the air temperature in the bin or the surface temperature of any part of the floor or walls is below 50°C.

Section 6.3. Ventilation Systems

6.3.1. Ventilation

6.3.1.1. Required Ventilation

(1) Except as provided in Sentence (4), all *buildings* shall be ventilated in accordance with this Section.

e1 **(2)** Except in *storage garages* and *repair garages* covered by Article 6.3.1.3., outdoor air shall be supplied to *buildings* for ventilation purposes in accordance with one of the following Sections of ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality,"

(a) Section 6.2, Ventilation Rate Procedure, excluding the exception stated in Section 6.2.7.1.2 and note H of Table 6.2.2.1,
(b) Section 6.3, Indoor Air Quality Procedure, or
(c) Section 6.4, Natural Ventilation Procedure, excluding *residential occupancies.*

(3) Except in *storage garages* and *repair garages* covered by Article 6.3.1.3., exhaust ventilation shall be provided in accordance with Section 6.5, Exhaust Ventilation, of ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality," as a minimum.

(4) Self-contained heating-season mechanical ventilation systems serving only one *dwelling unit* shall comply with Subsection 9.32.3.

(5) *Live/work units* shall be mechanically ventilated in accordance with the requirements of Sentence (1).

6.3.1.1A. Natural Ventilation

(1) Except as permitted by Sentence (2), the ventilation required by Article 6.3.1.1. shall be provided by mechanical ventilation except that it can be provided by natural ventilation or a combination of natural and mechanical ventilation in

(a) *buildings* of other than *residential occupancy* having an *occupant load* of not more than one person per 40 m² during normal use,
(b) *buildings* of *industrial occupancy* where the nature of the process contained in them permits or requires the use of large openings in the building envelope even during the winter, or
(c) seasonal *buildings* not intended to be occupied during the winter.

(2) Where climatic conditions permit, *buildings* containing *occupancies* other than *residential occupancies*, may be ventilated by natural ventilation methods in lieu of mechanical ventilation where engineering data demonstrates that such a method will provide the required ventilation for the type of *occupancy*.

6.3.1.2. Crawl Spaces and Attic or Roof Spaces

(1) Unconditioned and unoccupied crawl spaces and *attic or roof spaces* shall be ventilated by natural or mechanical means as required by Part 5. (See Note A-6.3.1.2.(1))

6.3.1.3. Ventilation of Storage and Repair Garages

(1) Except as provided in Sentences (4) and (6), an enclosed *storage garage* for five or more motor vehicles shall have a mechanical ventilation system designed to

(a) limit the concentration of carbon monoxide to not more than 100 parts per million parts of air,
(b) limit the concentration of nitrogen dioxide to not more than 3 parts per million parts of air, where the majority of the vehicles stored are powered by diesel-fuelled engines, or

6.3.2.10. Exhaust Ducts and Outlets

(1) Except as provided in Sentence (2), *exhaust ducts* of non-mechanical ventilating systems serving separate rooms or spaces shall not be combined.

(2) *Exhaust ducts* of non-mechanical ventilating systems serving similar *occupancies* may be combined immediately below the point of final delivery to the outdoors, such as at the base of a roof ventilator.

(3) *Exhaust ducts* of ventilating systems shall have provision for the removal of condensation where this may be a problem.

(4) Exhaust outlets shall be designed to prevent back draft under wind conditions.

(5) Except as permitted in Sentence (6), exhaust systems shall discharge directly to the outdoors. (See Note A-6.3.2.10.(5) and (6))

(6) Exhaust systems are permitted to exhaust into a *storage garage*, provided
(a) they serve rooms that are accessible only from that *storage garage*,
(b) the exhaust contains no contaminants that would adversely affect the air quality in the *storage garage*, and (See Note A-6.3.2.10.(6)(b))
(c) they are designed in accordance with Sentence 6.3.2.7.(3).
(See Note A-6.3.2.10.(5) and (6))

(7) *Exhaust ducts* connected to laundry drying equipment shall be,
(a) independent of other *exhaust ducts*,
(b) designed and installed so that the entire duct can be cleaned, and
(c) constructed of smooth corrosion-resistant material.
(See Note A-6.3.2.10.(7) and (8))

(8) Where collective venting of multiple installations of laundry-drying equipment is used, the ventilation system shall
(a) be connected to a common *exhaust duct* that is vented by one central exhaust fan,
(b) include an interlock to activate the central exhaust fan when laundry-drying equipment is in use, and
(c) be provided with make-up air. (See Note A-6.3.2.10.(7) and (8))

(9) *Exhaust ducts* or vents connected to laundry-drying equipment shall discharge directly to the outdoors.

(10) Except as provided in Sentence (12) and except for self-contained systems serving individual *dwelling units*, *exhaust ducts* serving rooms containing water closets, urinals, basins, showers or slop sinks shall be independent of other *exhaust ducts*.

(11) Except as provided in Sentence (12) and except for self-contained systems serving individual *dwelling units*, *exhaust ducts* serving rooms containing residential cooking equipment shall be independent of other *exhaust ducts*.

(12) Two or more exhaust systems described in Sentences (10) and (11) may be interconnected or connected with *exhaust ducts* serving other areas of the *building*, provided
(a) the connections are made at the inlet of an exhaust fan, and all interconnected systems are equipped with suitable back pressure devices to prevent the passage of odours from one system to another when the fan is not in operation, or
(b) the *exhaust ducts* discharge to a shaft that is served by an exhaust fan having a capacity that is equal to or greater than the combined capacity of the exhaust fans discharging to the *plenum* multiplied by the operation diversity factor, provided that the exhaust fan serving the shaft operates continuously. (See Note A-6.3.2.10.(12)(b))

(13) Where *exhaust ducts* containing air from *conditioned spaces* pass through or are adjacent to unconditioned spaces, the ducts shall be constructed to prevent condensation from forming on the inside or outside of the ducts.

(14) Except as provided in Sentence (15), exhaust air shall be provided at a rate not less than 24 L/s for each water closet, urinal, shower or slop sink.

(15) Except as provided in Sentence 6.3.1.1.(4), exhaust air shall be provided for *fixtures* in *dwelling units* in accordance with ANSI/ASHRAE 62.1, "Ventilation for Acceptable Indoor Air Quality."

(16) Except for wash basins (lavatories), sanitary facilities in a *food premises* shall be mechanically ventilated and shall be capable of exhausting air at the rate of not less than 24 L/s for each sanitary fixture listed in Sentence (17).

(17) The mechanical ventilation described in Sentence (16) applies to rooms containing water closets, urinals, basins, showers or slop sinks.

6.3.2.11. Return-Air System

(1) Return-air systems shall comply with Article 3.6.5.8.

(2) Where a ceiling space is used as a return-air *plenum*, the requirements of Article 3.6.4.3. shall apply.

(3) A *public corridor* or *exit* shall not be used as a return-air *plenum*.

(4) The return-air system shall be designed to handle the entire air supply.

(5) The return-air system shall be designed so that the negative pressure from the circulating fan cannot affect the *furnace* combustion air supply nor draw combustion products from joints or openings in the *furnace* or *flue pipe*.

(6) Return-air inlets shall not be installed in an enclosed room or crawl space that provides combustion air to a fuel-fired *appliance*.

6.3.2.12. Underground Ducts

(1) Underground ducts shall
(a) be constructed and installed to provide interior drainage from and access to all low points,
(b) not be connected directly to a sewer, and
(c) be installed and constructed of materials recommended by ASHRAE and SMACNA Standards and HRAI Manuals.

(2) A clean-out or pump-out connection shall be provided in an underground duct system at every low point of the duct system.

6.3.2.13. Filters

(1) Air filters for air duct systems shall conform to the requirements for Class 2 air filter units as described in CAN/ULC-S111, "Standard Method of Fire Tests for Air Filter Units."

(2) When electrostatic-type filters are used, they shall be installed so as to ensure that the electric circuit is automatically de-energized when filter access doors are opened or, in *dwelling units*, when the *furnace* circulation fan is not operating.

6.3.2.14. Cleaning Devices

r1 **(1)** Reserved.

Part 7

Plumbing

Section 7.1. General

7.0.1. Scope

7.0.1.1. Scope

(1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A.

7.1.1. Application

7.1.1.1. Application

(1) Except as provided in Sentence (2), this Part applies to the design and *construction* of *plumbing*.

(2) This Part does not apply to industrial process systems unless the industrial process system is interconnected with the *plumbing system*, in which case the interconnection shall be so designed and installed so that the *plumbing system* is protected against contamination or malfunction that may be caused by the industrial system.

7.1.1A. Definitions

7.1.1A.1. Definitions

(1) Except as provided in Sentence (2), words that appear in italics are defined in Article 1.4.1.2. of Division A and in the *Building Code Act, 1992*.

(2) In this Part,

Storey means the interval between two successive floor levels including *mezzanine* floors that contain *plumbing fixtures* or between a floor level and roof.

7.1.1B. Plumbing Facilities

7.1.1B.1. Facilities Required

(1) *Plumbing* facilities shall be provided in accordance with Subsection 3.7.4. and Section 9.31.

7.1.1B.2. Floor Drains

(1) Where gravity drainage to a *sanitary drainage system* is possible, a floor drain shall be installed in a *basement* forming part of a *dwelling unit*.

(2) Where gravity drainage to a *sanitary drainage system* is not possible, the floor drain required by Sentence (1) may be connected to a *storm drainage system*, dry well or drainage ditch provided it is located where it can receive only *clear water waste* or *storm sewage*.

(3) A floor drain shall be provided in a public laundry room, garbage room, incinerator room, *boiler* or heating room that is not located within a *dwelling unit*.

7.1.2. Service Connections

7.1.2.1. Sanitary Drainage Systems

r1 **(1)** Except as provided in Section 7.7., *sanitary drainage systems* shall be connected to a public *sanitary sewer*, a public *combined sewer* or a *private sewage disposal system*.

(2) A combined *building drain* or a combined *building sewer* shall not be installed. (See Note A-7.1.2.1.(2))

7.1.2.2. Storm Drainage Systems

r1 **(1)** Except as provided in Section 7.7., *storm drainage systems* and *private sewers* conveying *storm sewage* shall be connected to a public *storm sewer*, a public *combined sewer* or a designated *storm water* disposal location.

7.1.2.3. Water Distribution Systems

r1 **(1)** Except as provided in Section 7.7. and Sentences (2) and (3), *water distribution systems* shall be connected to a public water main, *drinking water system* or a *potable private water supply system*.

(2) *Storm sewage* or *greywater* that is free of solids and treated to conform to Article 7.7.4.1. is permitted to be used as a water supply for
(a) water closets,
(b) urinals,
(c) sub-surface irrigation, or
(d) the priming of *traps*.

(3) *Rainwater* that is free of solids and treated to conform to Article 7.7.4.1. is permitted to be used as a water supply for
(a) clothes washers,
(b) laundry trays,
(c) mop sinks,
(d) bedpan washers,
(e) water closets,
(f) urinals,
(g) hose bibbs,
(h) sub-surface irrigation, or
(i) the priming of *traps*.

(4) Piping conveying the non-*potable* water described in Sentence (2) shall be installed in conformance with Section 7.7.

7.2.5. Non-Metallic Pipe and Fittings

7.2.5.1. Fibrocement Pipe and Fittings

(1) Fibrocement pipe and fittings for use in a drain, waste or vent system shall conform to CAN/CSA-B127.3, "Fibrocement drain, waste, and vent pipe and pipe fittings."

7.2.5.2. Concrete Pipe and Fittings

(1) Concrete pipe shall conform to
(a) CSA A257.1, "Non-reinforced circular concrete culvert, storm drain, sewer pipe, and fittings," or
(b) CSA A257.2, "Reinforced circular concrete culvert, storm drain, sewer pipe, and fittings."

(2) Joints with internal elastomeric gaskets shall conform to CSA A257.3, "Joints for circular concrete sewer and culvert pipe, manhole sections, and fittings using rubber gaskets."

(3) Concrete fittings fabricated on the site from lengths of pipe shall not be used. (See Note A-7.2.5.2.(3))

(4) Concrete pipe shall not be used above ground inside a *building*.

(5) Precast reinforced circular concrete manhole sections, catch basins and fittings shall conform to CSA A257.4, "Precast reinforced circular concrete manhole sections, catch basins, and fittings."

7.2.5.3. Vitrified Clay Pipe and Fittings

(1) Vitrified clay pipe and fittings shall be certified to CSA A60.1-M, "Vitrified Clay Pipe."

(2) Couplings and joints for vitrified clay pipe shall be certified to CSA A60.3-M, "Vitrified Clay Pipe Joints."

(3) Vitrified clay pipe and fittings shall not be used except for an underground part of a *drainage system*.

7.2.5.4. Polyethylene Pipe and Fittings

(1) Polyethylene water pipe, tubing and fittings shall conform to, and have a pressure rating meeting the requirements of, Series 160 or a higher series of CSA B137.1, "Polyethylene (pe) pipe, tubing and fittings for cold water pressure services."

(2) Except as permitted in Sentence 7.2.5.6.(1), polyethylene water pipe shall not be used except for a *water service pipe*.

(3) Butt fusion fittings for polyethylene pipe shall conform to ASTM D3261, "Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing."

7.2.5.5. Polyethylene Pipe Used Underground

(1) Polyethylene pipe used underground in a *drainage system* for rehabilitation of existing systems using trenchless technology shall conform to ASTM F714, "Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter" and shall be HDPE 3408, SDR 17 or heavier. (See Note A-7.2.5.5.(1))

7.2.5.6. Crosslinked Polyethylene Pipe and Fittings

(1) Crosslinked polyethylene pipe and manufacturer-approved fittings used in hot and cold *potable water systems* shall conform to CSA B137.5, "Crosslinked polyethylene (PEX) tubing systems for pressure applications." (See Note A-7.2.5.6.(1))

7.2.5.7. PVC Pipe and Fittings

(1) PVC water pipe, fittings and solvent cement shall
(a) conform to CSA B137.3, "Rigid Polyvinylchloride (PVC) pipe and fittings for pressure applications" or CSA B137.2, "Polyvinylchloride (PVC) injection-moulded gasketed fittings for pressure applications," and
(b) a pressure rating of not less than 1 100 kPa.

(2) PVC water pipe fittings shall conform to
(a) ASTM D2466, "Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40," or
(b) ASTM D2467, "Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80."

r1 **(3)** PVC water pipe and fittings in Sentences (1) and (2) shall not be used in a hot *water system*.

7.2.5.8. CPVC Pipe, Fittings and Solvent Cements

(1) CPVC hot and cold water pipe, fittings and solvent cements shall be conform to CSA B137.6, "Chlorinated polyvinylchloride (CPVC) pipe, tubing and fittings for hot and cold water distribution systems."

(2) The design temperature and design pressure of a CPVC piping system shall conform to Table 7.2.5.8.

Table 7.2.5.8.
Maximum Permitted Pressure for CPVC Piping at Various Temperatures
Forming Part of Sentence 7.2.5.8.(2)

Maximum Temperature of Water, °C	Maximum Permitted Pressures, kPa
10	3150
20	2900
30	2500
40	2100
50	1700
60	1300
70	1000
82	690

7.2.5.9. Plastic Pipe, Fittings and Solvent Cement Used Underground

(See Note A-7.2.5.9. to 7.2.5.11.)

(1) Plastic pipe, fittings and solvent cement used underground outside a *building* or under a *building* in a *drainage system* shall conform to
(a) ASTM F628, "Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe With a Cellular Core,"
(b) CSA B181.1, "Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings,"
(c) CSA B181.2, "Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings,"
(d) CSA B182.1, "Plastic drain and sewer pipe and pipe fittings,"
(e) CSA B182.2, "PSM type polyvinylchloride (PVC) sewer pipe and fittings,"
(f) CSA B182.4, "Profile polyvinylchloride (PVC) sewer pipe and fittings,"
(g) CSA B182.6, "Profile polyethylene (PE) sewer pipe and fittings for leak-proof sewer applications," or

7.2.10.4. Mechanical Couplings

(1) Groove- and shoulder-type mechanical pipe couplings shall conform to CSA B242, "Groove- and Shoulder-Type Mechanical Pipe Couplings."

(2) Mechanical couplings for DWV and Sewer Pipe shall conform to CSA B602, "Mechanical Couplings for Drain, Waste, and Vent Pipe and Sewer Pipe."

7.2.10.5. Saddle Hubs

(1) Except as provided in Sentence (2), a saddle hub or fitting shall not be installed in *drainage*, *venting* or *water systems*. (See Note A-7.2.10.5.(1))

(2) A saddle hub or saddle clamp may be installed in a *building drain* or *building sewer* of nominal diameter not less than 8 in. and that is in service provided that the connecting *branch* is at least two pipe *sizes* smaller than the run of the *building drain* or *building sewer* to which it is connected.

7.2.10.6. Valves, Supply and Waste Fittings

(1) Supply fittings shall conform to
(a) ASME A112.18.1 / CSA B125.1, "Plumbing Supply Fittings," or
(b) CSA B125.3, "Plumbing Fittings."

(2) Except for lavatories in healthcare facilities, emergency eye washes, and emergency showers, supply fittings and individual shower heads shall have an integral means of limiting the maximum water flow rate to that specified in Table 7 .2.10.6. (See Note A-7.2.10.6.(2))

Table 7.2.10.6.
Water Flow Rates from Supply Fittings
Forming Part of Sentence 2.2.10.6.(2)

Supply Fittings	Maximum Water Flow Rate, LPM
Lavatory supply fittings	
private	5.7
public	1.9
Kitchen supply fittings (except those in industrial, commercial or institutional kitchens)	8.3
Shower heads	7.6

(2.1) Sentence (2) does not apply to a *fixture* located in a *heritage building*.

(3) Reserved.

(4) Reserved.

(5) Reserved.

(6) Waste fittings shall conform to ASME A112.18.2 / CSA B125.2, "Plumbing Waste Fittings."

(7) Manually operated valves of *NPS* 4 or less for use in *plumbing systems* shall conform to ASME A112.4.14 / CSA B125.14, "Manually Operated Valves for Use in Plumbing Systems." (See Note A-7.2.10.6.(7))

7.2.10.7. Water Temperature Control (See Note A-7.2.10.7.)

(1) Except as provided in Sentences (2) and (3), water supplied to shower heads or bathtubs shall be controlled by an automatic compensating valve conforming to

(a) ASME A112.18.1 / CSA B125.1, "Plumbing Supply Fittings," or

(b) ASSE 1016 / ASME A112.1016 / CSA B125.16, "Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations."

(2) The requirement in Sentence (1) is permitted to be waived where hot water supplied only to bathtubs is controlled by

(a) an automatic compensating valve conforming to CSA B125.3, "Plumbing fittings," or

(b) a temperature-limiting device conforming to ASSE 1070 / ASME A112.1070 / CSA B125.70, "Performance requirements for water temperature limiting devices."

(3) The requirement in Sentence (1) is permitted to be waived where the water is supplied by a single tempered water line controlled by an automatic compensating valve conforming to CSA B125.3, "Plumbing fittings."

r1 **(4)** Except as provided in Sentences (5) and (6) and 7.2.10.7A.(1), the temperature of water discharging from a shower head or into a bathtub shall not exceed 49°C.

(5) In healthcare facilities and *retirement homes*, the temperature of water discharging from a shower head or into a bathtub shall

(a) not exceed 43°C, and

(b) be adjusted at the shower or bathtub controls.

(6) Sentence (4) does not apply to hot water supplied to installed dishwashers or clothes washers.

7.2.10.7A. Temperature Control Devices

r1 **(1)** A *water distribution system* supplying hot water to any bathtub, shower or hand basin that is accessible to a patient or resident in a Group B, Division 2 or 3 *occupancy* or a resident of a group home, *home for special care* or residence for adults with developmental disabilities, or children within child care facilities shall have one or more temperature gauges and control devices that are

(a) accessible only to supervisory staff, and

(b) capable of being adjusted to ensure that the temperature of the water supplied to the *fixtures* does not exceed 43°C.

7.2.10.7B. Showers

(1) Except as provided for in Sentences (2) and (3), all valves supplying fixed location shower heads, shall be individually pressure-balanced or thermostatic-mixing valves, conforming to ASME A112.18.1 / CSA B125.1, "Plumbing Supply Fittings."

(2) An individually pressure-balanced or thermostatic-mixing valve is not required for shower heads having a single tempered water supply that is controlled by an automatic compensating valve conforming to CSA B125.3, "Plumbing fittings."

(3) Deck-mounted, hand-held, flexible-hose spray attachments are exempt from the thermal shock requirements of Sentences (1) and (4).

(6) The temperature-relief valve required in Clause (4)(b) shall
(a) have a temperature-sensing element located within the top 150 mm of the tank, and
(b) be designed to open and discharge sufficient water to keep the temperature of the water in the tank from exceeding 99°C under all operating conditions.

(7) No shut-off valve shall be installed on the pipe between any tank and the relief valves or on the discharge lines from such relief valves.

7.6.1.8. Solar Domestic Hot Water Systems

r1 **(1)** Systems for solar heating of *potable water* shall be installed in conformance with CAN/CSA-F383, "Installation of packaged solar domestic hot water systems."

7.6.1.9. Water Hammer

(1) Provision shall be made to protect the *water distribution system* from the adverse effects of water hammer. (See Note A-7.6.1.9.(1))

7.6.1.10. Mobile Home Water Service

(1) A *water service pipe* intended to serve a mobile home shall
(a) be not less than *NPS* ¾,
(b) terminate above ground, and
(c) be provided with
(i) a tamperproof terminal connection that is capable of being repeatedly connected, disconnected and sealed,
(ii) a protective concrete pad,
(iii) a means to protect it from frost heave, and
(iv) a curb stop and a means of draining that part of the pipe located above the frost line when not in use.

7.6.1.11. Thermal Expansion

(1) Where thermal expansion can occur, protection shall be provided for
(a) *check valves* required by Article 7.6.1.5.,
(b) *backflow preventers* required by Sentence 7.6.2.1.(3), and
(c) pressure-reducing valves required by Article 2.6.3.3.
(See Note A-7.6.1.11.(1))

7.6.2. Protection from Contamination

7.6.2.1. Connection of Systems

(1) Connections to *potable water systems* shall be designed and installed so that non-*potable* water or substances that may render the water non-*potable* cannot enter the system.

(2) Reserved.

(3) *Backflow preventers* shall be selected and installed in conformance with CSA B64.10, "Selection and installation of backflow preventers."

(3.1) No connection shall be made between a *potable water system* supplied with water from a *drinking water system* and any other *potable water system* without the consent of the *water purveyor*.

7.6.2.2. Back-Siphonage

(1) Every *potable water system* that supplies a *fixture* or tank that is not subject to pressures above atmospheric shall be protected against *back-siphonage* by a *backflow preventer*.

(2) Where a *potable* water supply is connected to a boiler, tank, cooling jacket, lawn sprinkler system or other device where a non-*potable* fluid may be under pressure that is above atmospheric or the water outlet may be submerged in the non-*potable* fluid, the water supply shall be protected against *backflow* by a *backflow preventer*.

7.6.2.3. Backflow Caused by Back Pressure

(1) Except as provided in Sentence (3) and Articles 7.6.2.4. to 7.6.2.6., where a *backflow preventer* is required by this Subsection, the *backflow preventer* shall be selected, installed and tested in conformance with CSA B64.10, "Selection and installation of backflow preventers."

(2) *Backflow preventers* shall be provided in conformance with Sentence 7.2.10.10.(1).

(3) Tank-type water closet valves shall be provided with a *back-siphonage preventer* in conformance with Sentence 7.2.10.10.(2).

7.6.2.4. Backflow from Fire Protection Systems

(1) A *backflow preventer* shall not be required in *residential full flow-through fire sprinkler/standpipe systems* in which the pipes and fittings are constructed of *potable water system* materials.

(2) Except as required by Sentence (4), *potable water system* connections to fire sprinkler and standpipe systems shall be protected against *backflow* caused by *back-siphonage* or *back pressure* in conformance with Clauses (a) to (g), as applicable:

(a) *residential partial flow-through fire sprinkler/standpipe systems* in which the pipes and fittings are constructed of *potable water system* materials shall be protected by a dual *check valve backflow preventer* conforming to
   (i) CSA B64.6, "Dual check valve (DuC) backflow preventers," or
   (ii) CSA B64.6.1, "Dual check valve backflow preventers for fire protection systems (DuCF),"

(b) provided that the systems do not use antifreeze or other additives of any kind and that all pipes and fittings are constructed of *potable water system* materials, *Class 1 fire sprinkler/standpipe systems* shall be protected by a single or dual *check valve backflow preventer* conforming to
   (i) CSA B64.6, "Dual check valve (DuC) backflow preventers," or
   (ii) CSA B64.9, "Single check valve backflow preventers for fire protection systems (SCVAF),"

(c) provided that the systems do not use antifreeze or other additives of any kind, *Class 1 fire sprinkler/standpipe systems* not covered by Clause (b) as well as *Class 2* and *Class 3 fire sprinkler/standpipe systems* shall be protected by a double *check valve backflow preventer* conforming to
   (i) CSA B64.5, "Double check valve (DCVA) backflow preventers," or
   (ii) CSA B64.5.1, "Double check valve backflow preventers for fire protection systems (DCVAF),"

(d) *Class 1, Class 2* or *Class 3 Class 3 fire sprinkler/standpipe systems* in which antifreeze or other additives are used shall be protected by a reduced pressure principle *backflow preventer* conforming to
   (i) CSA B64.4, "Reduced pressure principle (RP) backflow preventers," or
   (ii) CSA B64.4.1, "Reduced pressure principle backflow preventers for fire protection systems (RPF),"

   installed on the portion of the system that uses the additives and the balance of the system shall be protected as required by Clause (b) or (c),

(e) *Class 4* and *Class 5 fire sprinkler/standpipe systems* shall be protected by a reduced pressure principle *backflow preventer* conforming to
   (i) CSA B64.4, "Reduced pressure principle (RP) backflow preventers," or
   (ii) CSA B64.4.1, "Reduced pressure principle backflow preventers for fire protection systems (RPF),"

e1 # Part 8

Sewage Systems

Section 8.1. General

8.1.1. Scope

8.1.1.1. Scope

(1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A.

8.1.1.2. Definitions

(1) Except as provided in Sentence (2), words that appear in italics are defined in Article 1.4.1.2. of Division A and in the *Building Code Act, 1992*.

(2) In this Part,

Soil means in-situ, naturally occurring, unconsolidated mineral or organic material, at the earth's surface that is at least 100 mm thick and capable of supporting plant growth, and includes material compacted or cemented by soil forming processes, but does not include displaced materials such as gravel dumps, mine spoils, or like deposits.

8.1.2. Application

8.1.2.1. Classification of Systems

(1) All *sewage systems* shall be classed as one of the following:
(a) Class 1 — a chemical toilet, an incinerating toilet, a recirculating toilet, a self-contained portable toilet and all forms of privy including a *portable privy*, an *earth pit privy*, a *pail privy*, a *privy vault* and a composting toilet system,
(b) Class 2 — a *greywater* system,
(c) Class 3 — a cesspool,
(d) Class 4 — a *leaching bed* system, or
(e) Class 5 — a system that requires or uses a *holding tank* for the retention of *hauled sewage* at the site where it is produced prior to its collection by a *hauled sewage system*.

8.1.2.2. Operation and Maintenance

(1) Operation and maintenance of *sewage systems* shall comply with Section 8.9.

8.1.3. Limitations

8.1.3.1. Discharge

(1) Except as provided in Sentences (2) to (6), the *sewage system* shall be designed and *constructed* to receive only *sanitary sewage* of domestic origin. (See Note A-8.1.3.1.(1))

(2) Where laundry waste is not more than 20% of the total daily design *sanitary sewage* flow, it may discharge to a *sewage system*.

(3) Where industrial process waste water is treated to the contaminant levels found in domestic *sanitary sewage*, it may discharge to a *leaching bed* provided the *treatment unit* and *sewage system* are designed in accordance with good engineering practice. (See Note A-8.1.3.1.(3))

(4) Where kitchen waste water from a restaurant has passed through an operating grease *interceptor*, it may discharge to a *leaching bed* provided the *sewage system* has been designed in accordance with good engineering practice.

(5) Waste water from a kitchen equipped with a garbage grinder may be directed to the *sewage system* provided the system has been designed to accept such waste water.

(6) Water softener and iron filter discharge may be directed to the *sewage system* provided the system has been designed to accept such discharges.

(7) *Storm sewage* shall not be discharged into a *sewage system*.

(8) The *interceptor* required in Sentence (4) shall
(a) have a minimum flow rate as required by Sentence 7.4.4.3.(8) using a 60 second drain down time, and
(b) conform to,
  (i) CSA B481.1, "Testing and rating of grease interceptors using lard," or
  (ii) CSA B481.2, "Testing and rating of grease interceptors using oil."

Section 8.2. Design Standards

8.2.1. General Requirements

8.2.1.1. Scope

(1) This Subsection applies to the design of *sewage systems*.

8.2.1.2. Site Evaluation

(1) A site evaluation shall be conducted on every site where a new or replacement *sewage system* is to be installed. (See Note A-8.2.1.2.(1))

(2) The *percolation time* shall be determined by
(a) conducting percolation tests, or
(b) classifying the *soil* according to one of the following methods,
  (i) the Unified Soil Classification System as described in MMAH Supplementary Standard SB-6, "Percolation Time and Soil Descriptions," or
  (ii) the Soil Texture Classification as described in Chapter 3 of USDA, "Soil Survey Manual."
(See Note A-8.2.1.2.(2))

(3) Where the *percolation time* is determined by a percolation test, there shall be a minimum of 3 locations selected, suitably spaced to accurately evaluate the *leaching bed* area, with the highest *percolation time* of the tests being used. (See Note A-8.2.1.2.(3))

8.2.1.3. Sewage System Design Flows

(1) For *residential occupancies*, the total daily design *sanitary sewage* flow shall be at least the value determined in accordance with Table 8.2.1.3.-A. (See Note A-8.2.1.3.(1) and (2))

(2) For all other *occupancies*, the total daily design *sanitary sewage* flow shall be at least the value determined in accordance with Table 8.2.1.3.-B. (See Note A-8.2.1.3.(1) and (2))

(3) Where a *building* contains more than one establishment, the total daily design *sanitary sewage* flow shall be the sum of the total daily design *sanitary sewage* flow for each establishment.

(4) Where an *occupancy* is not listed in Table 8.2.1.3.-B, the highest of metered flow data from at least 3 similar establishments shall be acceptable for determining the total daily design *sanitary sewage* flow.

Table 8.2.1.3.-A
Residential Occupancy
Forming Part of Sentence 8.2.1.3.(1)

Residential Occupancy	Volume, litres
Apartments, Condominiums, Other Multi-family Dwellings - per person(1)	275
Boarding Houses	
(a) Per person,	
(i) with meals and laundry facilities, or,	200
(ii) without meal or laundry facilities, and	150
(b) Per non-resident staff per 8 hour shift	40
Boarding School - per person	300
Dwellings	
(a) 1 bedroom dwelling	750
(b) 2 bedroom dwelling	1 100
(c) 3 bedroom dwelling	1 600
(d) 4 bedroom dwelling	2 000
(e) 5 bedroom dwelling	2 500
(f) Additional flow for(2)	
(i) each bedroom over 5,	500
(ii) (A) each 10 m^2 (or part of it) over 200 m^2 up to 400 m^2 (3) ,	100
(B) each 10 m^2 (or part of it) over 400 m^2 up to 600 m^2 (3) , and	75
(C) each 10 m^2 (or part of it) over 600 m^2 (3) , or	50
(iii) each fixture unit over 20 fixture units	50
Hotels and Motels (excluding bars and restaurants)	
(a) Regular, per room	250
(b) Resort hotel, cottage, per person	500
(c) Self service laundry, add per machine	2 500
Work Camp/Construction Camp, semi-permanent per worker	250

Notes to Table 8.2.1.3.-A:

(1) The *occupant load* shall be calculated using Subsection 3.1.17.

(2) Where multiple calculations of *sanitary sewage* volume is permitted, the calculation resulting in the highest flow shall be used in determining the design daily *sanitary sewage* flow.

(3) Total finished area, excluding the area of the finished *basement*.

Table 8.2.1.3.-B
Other Occupancies
Forming Part of Sentence 8.2.1.3.(2)

Establishments[1]	Volume, litres
Airports, Bus Terminals, Train Stations, Dock/Port Facilities (Food Services excluded)	
(a) Per passenger, and	20
(b) Per employee per 8 hour shift	40
Assembly Hall - per seat	
(a) No food service, or	8
(b) Food service provided	36
Barber Shop/Beauty Salon - per service chair	650
Bowling Alleys (Food Service not included) - per lane	400
Churches and Similar Places of Worship - per seat	
(a) No kitchen facilities, or	8
(b) Kitchen facilities provided	36
Country Club (excluding Food Service)	
(a) Per resident,	375
(b) Per employee per 8 hour shift, and	50
(c) Per member or patron	40
Day Care Facility per person (staff and children)	75
Dentist Office	
(a) Per wet service chair, and	275
(b) Per dry service chair	190
Doctors Office	
(a) Per practitioner, and	275
(b) Per employee per 8 hour shift	75
Factory (excluding process or cleaning waters) - per employee per 8 hour shift	
(a) No showers, or	75
(b) Including showers	125
Flea Markets[2] (open not more than 3 days per week)	
(a) Per non-food service vendor space,	60
(b) Per food service establishment / 9.25 m^2 of floor space, and	190
(c) Per limited food service outlet	95
Food Service Operations	
(a) Restaurant (not 24 hour), per seat	125
(b) Restaurant (24 hour), per seat	200
(c) Restaurant on controlled-access highway, per seat	400
(d) Paper service restaurant, per seat	60
(e) Donut shop, per seat	400
(f) Bar and cocktail lounge, per seat	125
(g) Drive-in restaurant per parking space	60
(h) Take-out restaurant (no seating area)	
(i) per 9.25 m^2 of floor area, and	190
(ii) per employee per 8 hour shift	75

Table 8.2.1.3.-B (Cont'd)
Other Occupancies
Forming Part of Sentence 8.2.1.3.(2)

Establishments[1]	Volume, litres
(i) Cafeteria - per meal	12
(j) Food outlet	
(i) excluding delicatessen, bakery and meat department, per 9.25 m^2 of floor space,	40
(ii) per 9.25 m^2 of delicatessen floor space,	190
(iii) per 9.25 m^2 of bakery floor space,	190
(iv) per 9.25 m^2 of meat department floor space, and	380
(v) per water closet	950
Hospitals - per bed	
(a) Including laundry facilities, or	750
(b) Excluding laundry facilities	550
Long-Term Care Homes, etc. - per bed	450
Office Building[3]	
(a) Per employee per 8 hour shift, or	75
(b) Per each 9.3 m^2 of floor space	75
Public Parks	
(a) With toilets only per person, or	20
(b) With bathhouse, showers, and toilets per person	50
Recreational Vehicle or Campground Park	
(a) Per site without water or sewer hook-up, or	275
(b) Per site with water and sewer hook-up	425
Schools - per student	
(a) Day school,	30
(b) With showers,	30
(c) With cafeteria, and	30
(d) Per non-teaching employee per 8 hour shift	50
Service Stations (no vehicle washing)[3]	
(a) Per water closet, and	950
(i) per fuel outlet[4], or	560
(ii) per vehicle served	20
Shopping Centre (excluding food and laundry) - per 1.0 m^2 of floor space	5
Stadiums, Race Tracks, Ball Parks - per seat	20
Stores[3]	
(a) Per 1.0 m^2 of floor area, or	5
(b) Per water closet	1 230
Swimming and Bathing Facilities (Public) - per person	40
Theatres	
(a) Indoor, auditoriums per seat,	20
(b) Outdoor, drive-ins per space, or	40
(c) Movie theatres per seat	15

Table 8.2.1.3.-B (Cont'd)
Other Occupancies
Forming Part of Sentence 8.2.1.3.(2)

Establishments[1]	Volume, litres
Veterinary Clinics	
(a) Per practitioner,	275
(b) Per employee per 8 hour shift, and	75
(c) Per stall, kennel or cage if floor drain connected	75
Warehouse	
(a) Per water closet, and	950
(b) Per loading bay	150

Notes to Table 8.2.1.3.-B:

(1) The *occupant load* shall be calculated using Subsection 3.1.17.

(2) Flea markets open more than 3 days per week shall be assessed using the volumes stated under the heading "Stores".

(3) Where multiple calculations of *sanitary sewage* volume is permitted, the calculation resulting in the highest flow shall be used in determining the design daily *sanitary sewage* flow.

(4) The number of fuel outlets is considered the maximum number of fuel nozzles that could be in use at the same time

8.2.1.4. Clearances (See Note A-8.2.1.4.)

(1) Unless it can be shown to be unnecessary, where the *percolation time* is 10 min or greater, the location of all components within a *sewage system* shall be in conformance with the clearances listed in Article 8.2.1.5. or 8.2.1.6.

(2) Unless it can be shown to be unnecessary, where the *percolation time* is less than 10 min, the clearances listed in Articles 8.2.1.5. and 8.2.1.6. for wells, lakes, ponds, reservoirs, rivers, springs or streams shall be increased to compensate for the lower *percolation time*.

(3) No *building* shall be *constructed* closer to any part of a *sewage system* than the clearances listed in Article 8.2.1.5. or 8.2.1.6.

(4) If more than one *sewage system* is located on a lot or parcel of land, there shall be no overlap of any part of the systems.

8.2.1.5. Clearance Distances for Class 1, 2 and 3 Sewage Systems

(1) Except as provided in Sentences 8.2.1.4.(1) and (2), no Class 1, 2 or 3 *sewage system* shall have a horizontal distance of less than that permitted by Table 8.2.1.5.

Table 8.2.1.5.
Clearance Distances for Class 1, 2 and 3 Sewage Systems
Forming Part of Sentence 8.2.1.5.(1)

Sewage System	Minimum horizontal distance in metres from a well with watertight casing to a depth of at least 6 m	Minimum horizontal distance in metres from a spring used as a source of *potable* water or well other than a well with a watertight casing to a depth of at least 6 m	Minimum horizontal distance in metres from a lake, river, pond, stream, reservoir, or a spring not used as a source of *potable* water	Minimum horizontal distance in metres from a property line
Earth Pit Privy	15	30	15	3
Privy Vault *Pail Privy*	10	15	10	3
Greywater System	10	15	15	3
Cesspool	30	60	15	3

8.2.1.6. Clearances for a Class 4 or 5 Sewage System

(1) Except as provided in Sentences 8.2.1.4.(1) and (2), a *treatment unit* shall not be located closer than the minimum horizontal distances set out in Table 8.2.1.6.-A.

Table 8.2.1.6.-A
Minimum Clearances for Treatment Units
Forming Part of Sentence 8.2.1.6.(1)

Object	Minimum Clearance, m
Structure	1.5
Well	15
Lake	15
Pond	15
Reservoir	15
River	15
Spring	15
Stream	15
Property Line	3

(2) Except as provided in Sentences 8.2.1.4.(1) and (2), the centre line of a *distribution pipe* or *leaching chamber* shall not be located closer than the minimum horizontal distances set out in Table 8.2.1.6.-B and these distances shall be increased when required by Sentence 8.7.4.2.(11).

(3) Except as provided in Sentences 8.2.1.4.(1) and (2), a *holding tank* shall not be located closer than the minimum horizontal distances set out in Table 8.2.1.6.-C.

Table 8.2.1.6.-B
Minimum Clearances for Distribution Piping and Leaching Chambers
Forming Part of Sentence 8.2.1.6.(2)

Object	Minimum Clearance, m
Structure	5
Well with a watertight casing to a depth of at least 6 m	15
Any other well	30
Lake	15
Pond	15
Reservoir	15
River	15
Spring not used as a source of *potable* water	15
Stream	15
Property Line	3

Table 8.2.1.6.-C
Minimum Clearances for Holding Tanks
Forming Part of Sentence 8.2.1.6.(3)

Object	Minimum Clearance, m
Structure	1.5
Well with a watertight casing to a depth of at least 6 m	15
Any other well	15
Spring	15
Property Line	3

8.2.2. Treatment and Holding Tanks

8.2.2.1. Application

(1) This Subsection applies to any tank used in a *sewage system* for collecting, treating, holding or storing *sanitary sewage*.

8.2.2.2. Tanks

(1) A tank that is used as a *treatment unit* in a Class 4 *sewage system* or a *holding tank* in a Class 5 *sewage system* shall conform to the requirements of CSA B66, "Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks."

(2) Material standards, access and construction methods and practices for a tank used for other Classes of *sewage systems* shall conform to the requirements of CSA B66, "Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks."

(3) Sentence (2) does not apply to a tank that is an integral part of a prefabricated Class 1 *sewage system*.

(4) Access openings shall be located to facilitate the pumping of all compartments and the servicing of the inlet and outlet of each compartment not accessible by removal of the tank top or part of it.

(5) A tank shall not be covered by *soil* or *leaching bed fill* having a depth greater than the maximum depth of burial that the tank is designed to withstand.

(6) A tank shall be securely anchored when located in an area subject to flooding or where *ground water* levels may cause hydrostatic pressures.

8.2.2.3. Septic Tanks

(1) The minimum *working capacity* of a *septic tank* shall be the greater of 3 600 L and
(a) in *residential occupancies*, twice the daily design *sanitary sewage* flow, or
(b) in non-*residential occupancies*, three times the daily design *sanitary sewage* flow.

(2) Every *septic tank* shall be constructed in such a manner that any *sanitary sewage* flowing through the tank will pass through at least 2 compartments.

(3) The *working capacity* of the compartments required in Sentence (2) shall be sized such that
(a) the first compartment is at least 1.3 times the daily design *sanitary sewage* flow but in no case less than 2 400 L, and
(b) each subsequent compartment shall be at least 50% of the first compartment.

(4) Where multiple tanks are to be used to meet the requirements of Sentences (2) and (3), the tanks shall be connected in series such that
(a) the first tank in the series shall have at least a capacity as calculated in Clause (3)(a), however at no time shall a tank having a *working capacity* of less than 3 600 L be used,
(b) all additional tanks after the first tank, excluding pump or dosing tanks shall have at least a *working capacity* equal to the volume required by Clause (3)(b),
(c) the pipe between the outlet of one tank and the inlet of the next tank in the series shall have a minimum slope of 2 percent,
(d) there shall be no partitions in the tank except where a partition is required to maintain the structural integrity of the tank, in which case openings within the partition shall be provided to allow the free movement of *sanitary sewage* throughout the tank, and
(e) all piping between tanks shall be continuous and shall be connected to the tank through the use of flexible watertight seals that will permit differential movement between the tanks.

(5) Partitions separating the *septic tank* into compartments shall extend at least 150 mm above the liquid level at the outlet, and there shall be one or more openings through or above the partition.

(6) The openings required between compartments referred to in Sentence (2) shall have a total cross-sectional area of at least three times the area of the inlet pipe and be located between the top and a level 150 mm above the liquid level at the outlet to provide for the free flow of air between compartments.

(7) *Sanitary sewage* shall pass from one compartment to another of the *septic tank* as follows:
(a) by means of a device similar to that described in CSA B66, "Design, Material, and Manufacturing Requirements for Prefabricated Septic Tanks and Sewage Holding Tanks" for outlet devices, or
(b) through two or more openings through the partition located in a horizontal line, and evenly spaced across the width of the partition, centred at approximately 40% of the liquid depth below the surface of the liquid, and having a total area of between three and five times that of the cross-sectional area of the inlet pipe.

(8) A *septic tank* shall be of such design and construction as will permit the collection and holding of *sanitary sewage* in it to a depth of not less than 1 000 mm, except that a depth of not less than 900 mm is permitted where the excavation is in rock, or to avoid rupture or displacement of the tank due to *ground water* pressure.

(9) Except as provided in Sentences (10) and (11), every *septic tank* shall be installed in such a manner that the access openings are located not more than 300 mm below the ground surface.

(10) Where the top of the *septic tank* is located more than 300 mm below the ground surface, it shall be equipped with risers that extend from the access opening of the *septic tank* to within 300 mm of the ground surface.

(11) Where risers are used they shall conform to the requirements of CSA B66, "Design, material, and manufacturing requirements for prefabricated septic tanks and sewage holding tanks," and shall have adequate access openings to allow for regular maintenance of the *septic tank*.

8.2.2.4. Holding Tanks

(1) All *holding tanks* shall be of such design and construction as will allow the complete removal of solid matter that can be expected to settle in the *holding tank* through an apparatus or device suitable for allowing the contents of the *holding tank* to be removed from the *holding tank*.

(2) A *holding tank* shall have a *working capacity* of not less than 9 000 L.

(3) Where two or more tanks are used to meet the requirement of Sentence (2), they shall be deemed to be one *holding tank* provided they are connected in such a manner as will allow the *sanitary sewage* contained in them to flow between the tanks.

(4) The *working capacity* of the tanks described in Sentence (3) shall not include any portion of any tank that cannot be completely drained due to the manner in which the connections are made.

Section 8.3. Class 1 Sewage Systems

8.3.1. General Requirements

8.3.1.1. Scope

(1) This Section applies to the *construction* of a Class 1 *sewage system*.

8.3.1.2. Application

(1) Except as provided in Sentence (2), a Class 1 *sewage system* shall be designed to receive only human body waste for disposal.

(2) Where the *sewage system* is specifically designed for the biological decomposition of non-waterborne biodegradable kitchen wastes or requires the addition of small quantities of plant matter to improve the decomposition of human body waste, it may receive such wastes in addition to human body waste.

(3) Where the *sewage system* is designed with a drain for the removal of excess liquid, then the *sewage system* shall drain to a Class 3, 4, or 5 *sewage system*.

8.3.2. Superstructure Requirements

8.3.2.1. Construction Requirements

(1) A privy as described in Subsections 8.3.3. to 8.3.5. shall be enclosed with a superstructure that
(a) is *constructed* of strong durable weatherproof materials,
(b) has a solid floor supported by a sill *constructed* of treated timber, masonry or other material of at least equal strength and durability,

(c) is easily sanitized,
(d) unless it is equipped solely as a urinal, is equipped with one or more seats each having a cover and being supported by an enclosed bench or riser that is lined with an impervious material on all interior vertical surfaces,
(e) is equipped with a self-closing door,
(f) has one or more openings for purposes of ventilation, all of which are screened,
(g) has a ventilation duct that is screened at the top end and that extends from the underside of the bench or riser to a point above the roof of the superstructure, and
(h) shall not have any openings for the reception of human body waste, other than urinals and those *constructed* in accordance with Clause (d).

8.3.3. Earth Pit Privy

8.3.3.1. Construction Requirements

(1) An *earth pit privy* shall be *constructed* in the following manner:
(a) the bottom of the pit shall be at least 900 mm above the *high ground water table*,
(b) the sides of the pit shall be reinforced so as to prevent their collapse,
(c) the pit shall be surrounded on all sides and on its bottom by not less than 600 mm of *soil* or *leaching bed fill*, and
(d) the *soil* or *leaching bed fill* around the base of the sides of the superstructure of the *earth pit privy* shall be raised or mounded to a height of at least 150 mm above ground level.

8.3.4. Privy Vaults and Pail Privy

8.3.4.1. Construction Requirements

(1) A *privy vault* or a *pail privy* shall be *constructed* in the following manner:
(a) the container or structure that is to be used for the holding or storage of *sanitary sewage* shall be watertight and made of a material that can be easily cleaned,
(b) the *soil* or *leaching bed fill* around the base of the sides of the superstructure shall be raised or mounded to a height of at least 150 mm above ground level, and
(c) the surface of the ground in the area of the *privy vault* or *pail privy* shall be so graded that surface drainage will be diverted away from the privy.

8.3.5. Portable Privy

8.3.5.1. Construction Requirements

(1) A *portable privy* shall be *constructed* in the following manner:
(a) the *portable privy* shall have a watertight receptacle that shall be suitable for the holding and storage of any *sanitary sewage* deposited in it,
(b) the receptacle for the holding and storage of sewage shall be designed and *constructed* in such a manner as to allow it to be easily emptied and cleaned, and
(c) the *portable privy* shall be *constructed* of such material and in such a manner that it can withstand the stresses to which it will be subjected during its transportation to and from sites where it is to be used and during loading and unloading from vehicles used for the transportation of the *portable privy* to and from sites where it is to be used.

Section 8.4. Class 2 Sewage Systems

8.4.1. General Requirements

8.4.1.1. Scope

(1) This Section applies to the *construction* of a Class 2 *sewage system*.

8.4.1.2. Application (See Note A-8.4.1.2.)

(1) A Class 2 *sewage system* shall be designed only for the treatment and disposal of *greywater*.

(2) The total daily design flow for a Class 2 *sewage system* shall be calculated based on the *fixtures* discharging to the system as follows:
(a) 200 L per *fixture unit* where there is a supply of pressurized water, and
(b) 125 L per *fixture unit* where there is no supply of pressurized water.

8.4.2. Design and Construction Requirements

8.4.2.1. Construction Requirements

(1) The bottom of the pit shall be at least 900 mm above the *high ground water table*.

(2) The pit shall be *constructed* in such a manner as to prevent the collapse of its sidewalls.

(3) Any material used to support or form the sidewalls of the pit shall be an open jointed material of a type that will permit *leaching* from the pit.

(4) The pit shall be provided with a tight, strong cover that shall remain over the pit except when it is necessary to remove it for purposes of adding *greywater* to or removing *greywater* from the pit or for purposes of maintenance of the pit.

(5) The earth around the perimeter of the pit shall be raised or mounded to a height of at least 150 mm above ground level.

(6) The surface of the ground in the area of the pit shall be so graded that surface drainage in the area will be diverted away from the pit.

(7) The pit shall be surrounded on all sides and on its bottom by at least 600 mm of *soil* having a *percolation time* of less than 50 min.

8.4.2.2. Maximum Sewage Flow

(1) A Class 2 *sewage system* shall not be *constructed* where the daily design *greywater* flow to the system exceeds 1 000 L/day.

8.4.2.3. Sizing

(1) A Class 2 *sewage system* shall be designed and *constructed* so that the loading rate to the side walls shall be not more than the value calculated using the formula,

$$L_R = 400/T$$

where,

L_R = *loading rate* of the sidewalls in litres per day/m^2, and

T = *percolation time*.

Section 8.5. Class 3 Sewage Systems

8.5.1. General Requirements

8.5.1.1. Scope

(1) This Section applies to the *construction* of a Class 3 *sewage system*.

8.5.1.2. Application

(1) A Class 3 *sewage system* shall not be *constructed* where the daily design *sanitary sewage* flow to the system exceeds 1 000 L/day.

(2) A Class 3 *sewage system* shall be designed to receive only the contents of a Class 1 *sewage system* or *effluent* from a Class 1 *sewage system* for disposal.

8.5.2. Design and Construction Requirements

8.5.2.1. Construction Requirements

(1) The bottom of the cesspool shall be at least 900 mm above the *high ground water table*.

(2) The cesspool shall be *constructed* in such a manner as to prevent the collapse of its sidewalls.

(3) Any material used to support or form the sidewalls of the cesspool shall be an open jointed material of a type that will permit *leaching* from the cesspool.

(4) The cesspool shall be provided with a tight strong cover that shall remain over the cesspool except when it is necessary to remove it for the purposes of adding *sanitary sewage* to or removing *sanitary sewage* from the cesspool or for purposes of maintenance of the cesspool.

(5) Where the cesspool extends to the ground surface, the cover required in Sentence (4) shall be lockable.

(6) The *soil* or *leaching bed fill* around the perimeter of the cesspool shall be raised or mounded to a height of at least 150 mm above ground level.

(7) The surface of the ground in the area of the cesspool shall be graded such that surface drainage in the area will be diverted away from the cesspool.

(8) The cesspool shall be surrounded on all sides and on its bottom by at least 600 mm of *soil* or *leaching bed fill*, except the top where the cesspool extends to the surface of the ground.

Section 8.6. Class 4 Sewage Systems

8.6.1. General Requirements

8.6.1.1. Scope

(1) This Section applies to the *construction* of a Class 4 *sewage system*.

8.6.1.2. General Requirements

(1) The *treatment unit* shall be connected to a *leaching bed constructed* in accordance with the requirements of Section 8.7.

8.6.1.3. Pumps and Siphons

(1) Where the total length of *distribution pipe* or *leaching chamber* required is 150 m or more, the *sewage system* shall have at least one pump or a siphon contained in a dosing tank that may be a separate compartment within the tank structure, for distribution of the *effluent*.

(2) Where the total length of *leaching chamber* is 150 m or more, a *distribution pipe* shall be installed at the centre line of the *leaching chamber* and extend the total length of *leaching chamber* to allow for dosing of the *effluent*.

(3) Alternating siphons shall not be installed in a *sewage system*.

(4) Where 2 or more pumps are employed within a dosing tank, the pumps shall be designed such that the pumps alternate dosing, and dosing shall continue in the event that one pump fails.

(5) Where a pump or siphon is required, the pump or siphon shall be designed to discharge a dose of at least 75% of the internal volume of the *distribution pipe* within a time period not exceeding 15 min.

(6) Where a pump or siphon is required, the pump or siphon shall be equipped with a device that shall produce an audible and visual alarm signal that indicates a high water level in the pump or siphon chamber.

8.6.2. Treatment Units

8.6.2.1. Septic Tank Systems

(1) An *effluent* filter shall be installed in the outlet flow path of every *septic tank* that discharges *effluent* to a *leaching bed*.

(2) The *septic tank effluent* filter required by Sentence (1) shall,
(a) conform to the requirements of NSF/ANSI 46, “Evaluation of Components and Devices Used in Wastewater Treatment Systems,”
(b) be sized to filter particles of 1.6 mm,
(c) have a minimum area of 550 cm^2, and
(d) be installed in accordance with the manufacturer’s recommendations.

(3) A secured access opening to allow for regular maintenance of the *effluent* filter shall be provided at the ground surface.

8.6.2.2. Other Treatment Units (See Note A-8.6.2.2.)

(1) Except as provided in Sentence (2), a *treatment unit*, other than a *septic tank*, shall be designed such that the *effluent* does not exceed, for the level of the *treatment unit* set out in Column 1 of Table 8.6.2.2., the maximum concentrations set out opposite it in Columns 2 and 3 of Table 8.6.2.2.

Table 8.6.2.2.
Other Treatment Unit Effluent Quality Criteria
Forming Part of Sentences 8.6.2.2.(1) and (2)

Classification of *Treatment Unit*(1)	Suspended Solids(2)	$CBOD_5$(2)
Level II	30	25
Level III	15	15
Level IV	10	10
Column 1	2	3

Notes to Table 8.6.2.2.:
(1) The classifications of *treatment units* specified in Column 1 correspond to the levels of treatment described in CAN/BNQ 3680-600, "Onsite Residential Wastewater Treatment Technologies."
(2) Maximum concentration in mg/L based on a 30 day average.

(2) A *treatment unit* that is used in conjunction with a *leaching bed constructed* as a *shallow buried trench*, *Type A dispersal bed* or *Type B dispersal bed* shall be designed such that the *effluent* does not exceed the maximum concentrations set out opposite a Level IV *treatment unit* in Columns 2 and 3 of Table 8.6.2.2.

(3) All *treatment units* referred to in Sentences (1) and (2) that contain mechanical components shall be equipped with an audible and visual warning alarm so located to warn the occupants of the *building* served or the operator of the *treatment unit* of a malfunction in the operation of the *treatment unit*.

(4) All *treatment units* referred to in Sentences (1) and (2) shall permit the sampling of the *effluent*.

(5) A *treatment unit* is deemed to comply with Sentences (1) and (2) if it has been certified to CAN/BNQ 3680-600, "Onsite Residential Wastewater Treatment Technologies" using a temperature condition listed under option a) or b) of Clause 8.2.2. of that standard. (See Note A-8.6.2.2.(5))

(6) Every operator of a *treatment unit* shall obtain, from the manufacturer or distributor of the *treatment unit*, literature that describes the unit in detail and provides complete instructions regarding the operation, servicing, and maintenance requirements of the unit and its related components necessary to ensure the continued proper operation in accordance with the original design and specifications.

Section 8.7. Leaching Beds

8.7.1. General Requirements

8.7.1.1. Scope

(1) This Section applies to the *construction* of *leaching beds*.

8.7.1.2. Limitation on Installation

(1) The design and installation of a *shallow buried trench*, *Type A dispersal bed* or *Type B dispersal bed* shall be carried out by a person competent in this field of work.

8.7.2. Design and Construction Requirements

8.7.2.1. General Requirements

(1) A *leaching bed* shall not be located
(a) in an area that has an average slope that exceeds one unit vertically to four units horizontally,
(b) in *soil* or *leaching bed fill* having a *percolation time of,*
  (i) less than 1 min, or greater than 125 min if *constructed* as a *shallow buried trench*, or
  (ii) less than 1min, or greater than 50 min for all other *leaching beds*, or
(c) in or on an area that is subject to flooding that may be expected to cause damage to the *leaching bed* or impair the operation of the *leaching bed*.

(2) A *leaching bed* shall not be covered with any material having a hydraulic conductivity less than 0.01 m/day.

(3) The surface of the *leaching bed* shall be shaped to shed water and together with the side slopes of any raised portion, shall be protected against erosion in such a manner as to not inhibit the evaporation and transpiration of waters from the *soil* or *leaching bed fill*, and to not cause plugging of the *distribution pipe*.

(4) No part of a *leaching bed* shall be sloped steeper than 1 unit vertically to 4 units horizontally.

(5) A *leaching bed* shall be designed to be protected from compaction or any stress or pressure that may result in,
(a) the impairment or destruction of any pipe in the *leaching bed*, or
(b) the smearing of the *soil* or *leaching bed fill*.

8.7.2.2. Distribution Pipes within Leaching Beds

(1) Sentence (2) applies to the design and *construction* of a *leaching bed* with *distribution pipes* used within the *leaching bed*.

(2) The *header line* and *distribution pipes* within a *leaching bed* shall be designed and *constructed* so that they can be detected by
(a) magnetic means,
(b) means of a 14 gauge TW solid copper light coloured plastic coated tracer wire, or
(c) other means of subsurface detection.

8.7.2.3. Leaching Chambers within Leaching Beds

(1) *Leaching chambers* are permitted for use in conjunction with an *absorption trench*, *shallow buried trench*, filter bed or *Type A dispersal bed*.

(2) *Leaching chambers* shall comply with the dimension requirements for either a Type I or Type II *leaching chamber* listed in Table 8.7.2.3.

(3) *Leaching chambers* shall conform to the requirements of IAPMO PS 63, “Plastic Leaching Chambers”.

(**4)** The *header line* and *leaching chambers* within a *leaching bed* shall be designed and *constructed* so that they can be detected by
(a) magnetic means,
(b) means of a 14 gauge TW solid copper light coloured plastic coated tracer wire,
(c) means of a 12 gauge copper clad steel light coloured plastic coated tracer wire, or
(d) other means of subsurface detection.

Table 8.7.2.3.
Leaching Chamber Dimensions
Forming Part of Sentence 8.7.2.3.(2)

Type of *Leaching Chamber*	Width, mm	Height, mm
Type I	380 to 410	280 to 305
Type II	555 to 575	300 to 320

8.7.3. Absorption Trench Construction

8.7.3.1. Length of Distribution Pipe

(1) The total length of *distribution pipe* shall
(a) not be less than 30 m when *constructed* as a *shallow buried trench*, or
(b) not be less than 40 m for any other *absorption trench*.

(2) Except as provided in Sentences (1), (3), and (4) every *leaching bed constructed* by means of *absorption trenches* shall have a total length of *distribution pipe* not less than the value determined by the formula,

$$L = QT/200$$

where,

L = total length of *distribution pipe* in metres,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the design *percolation time.*

(3) Except as provided in Sentence (1), where a *leaching bed* receives *effluent* from a Level II, Level III or Level IV *treatment unit* as described in Table 8.6.2.2., the *leaching bed* may have a total length of *distribution pipe* not less than the value determined by the formula,

$$L = QT/300$$

where,

L = total length of *distribution pipe* in metres,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the design *percolation time.*

(4) Except as provided in Sentence (1), where the *leaching bed* is *constructed* as a *shallow buried trench*, the total length of the *distribution pipe* shall not be less than the value determined by Table 8.7.3.1.

Table 8.7.3.1.
Length of Distribution Pipe in Shallow Buried Trench
Forming Part of Sentence 8.7.3.1.(4)

Percolation Time, (T) of *Soil*, min	Length of *Distribution Pipe*, m
1 < T ≤ 20	Q/75
20 < T ≤ 50	Q/50
50 < T < 125	Q/30

where,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the design *percolation time*.

8.7.3.2. Length of Leaching Chamber

(1) The total length of *leaching chamber* shall
(a) not be less than 30 m when constructed as a *shallow buried trench*, or
(b) not be less than 40 m for any other *absorption trench*.

(2) Except as provided in Sentences (1) and (3), the total length of *leaching chamber* shall not be less than the value determined by the formula,

L = QT/200, for a Type I *leaching chamber*, or

L = QT/300, for a Type II *leaching chamber*,

where,

L = total length of *leaching chamber* in metres,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the design *percolation time*.

(3) When a *treatment unit* described in Article 8.6.2.2. is used in conjunction with a *leaching chamber*, the total length of *leaching chamber* shall not be less than the value determined by the formula,

L = QT/300

where,

L = total length of *leaching chamber* in metres,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the design *percolation time*.

(4) Except as provided in Sentence (1), where the *leaching bed* is constructed as a *shallow buried trench*, the total length of *leaching chamber* shall not be less than the value determined by Table 8.7.3.2.

Table 8.7.3.2.
Length of Leaching Chamber in Shallow Buried Trench
Forming Part of Sentence 8.7.3.2.(4)

Percolation Time, (T) of *Soil*, min	Length of *Leaching Chamber*, m
1 < T ≤ 20	Q/75
20 < T ≤ 50	Q/50
50 < T < 125	Q/30

where,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the design *percolation time*.

8.7.3.3. Absorption Trenches

(1) Except as provided in Sentence (2), *absorption trenches* shall be
(a) approximately the same length and not more than 30 m in length,
(b) not less than 500 mm and not more than 1 000 mm in width,
(c) not less than 600 mm and not more than 900 mm in depth,
(d) centred not less than,
  (i) 1 600 mm apart where used in conjunction with
    (A) a *distribution pipe*,
    (B) a Type I *leaching chamber*, or
    (C) a Type II *leaching chamber* constructed in *leaching bed fill*, or
  (ii) 2 400 mm apart where used in conjunction with a Type II *leaching chamber*, other than a Type II *leaching chamber* constructed in *leaching bed fill*,
(e) located so that the bottom of the *absorption trench* is not less than 900 mm above the *high ground water table*, rock or *soil* with a *percolation time* of more than 50 min, and
(f) backfilled, after the installation of the *distribution pipe* or *leaching chamber* with *leaching bed fill*, so as to ensure that after the *leaching bed fill* settles, the surface of the *leaching bed* will not form any depressions.

(2) *Absorption trenches constructed* as a *shallow buried trench* shall be
(a) approximately the same length and not more than 30 m in length,
(b) not less than 300 mm and not more than 600 mm in width,
(c) not less than 300 mm and not more than 600 mm in depth,
(d) centred not less than 2 000 mm apart,
(e) not less than 900 mm at all points on the bottom of the *absorption trench* above the *high ground water table* or rock, and
(f) backfilled, after the installation of the *distribution pipe* with *leaching bed fill*, so as to ensure that after the *leaching bed fill* settles, the surface of the *leaching bed* will not form any depressions.

8.7.3.4. Distribution Pipe

(1) Except for a *shallow buried trench*, the *distribution pipe* used in the *construction* of a *leaching bed* shall be
(a) not less than 3 in. trade *size* for gravity flow systems,
(b) installed with a uniform downward slope from the inlet with a drop of not less than 30 mm and not more than 50 mm for each 10 m of *distribution pipe* for gravity flow systems, and
(c) installed within a layer of stone conforming to Sentence (5).

(2) Prior to backfilling, the stone layer required by Clause (1)(c) shall be protected in such a manner so as to prevent *soil* or *leaching bed fill* from entering the stone by completely covering it with
(a) untreated building paper, or
(b) a permeable geo-textile fabric.

(3) Every pressurized *distribution pipe* shall be self-draining so as to prevent freezing of its contents.

(4) Every pressurized *distribution pipe* shall,
(a) be not less than 1 in. trade *size*, and
(b) have orifices of at least 3 mm in diameter, spaced equally along the length of the pipe to provide even distribution of the *effluent*.

(5) The stone layer required by Clause (1)(c) shall
(a) be comprised of washed septic stone, free of fine material, with gradation conforming to Table 8.7.3.4.,
(b) be not less than 500 mm in width,
(c) extend not less than 150 mm below the *distribution pipe*, and
(d) extend not less than 50 mm above the *distribution pipe*.

(6) This Article does not apply to a *distribution pipe* within a *leaching chamber*.

Table 8.7.3.4.
Gradation of Septic Stone
Forming Part of Sentences 8.7.3.4.(5) and 8.7.8.2.(6)

Particle Size	Percent Passing
53 mm	100
19 mm	0 - 5
75 µm	0 - 1

8.7.3.5. Leaching Chamber

(1) Prior to backfilling, the *leaching chamber* shall be
(a) installed level over the length of the *absorption trench*,
(b) securely connected together, section to section,
(c) free of structural damage, uncut and used full length,
(d) equipped with end caps installed on both ends,
(e) equipped with an integrated splash plate at the inlet end of each line of *leaching chamber*, to prevent soil scouring, and
(f) protected in such a manner so as to prevent *soil* or *leaching bed fill* from entering the *leaching chamber*.

(2) Except for a *shallow buried trench*, the *distribution pipe* within a *leaching chamber* shall be not less than 3 in. trade *size* for dosed systems.

(3) Every pressurized *distribution pipe* within a *leaching chamber* shall
(a) extend over the entire length of the *leaching chamber*,
(b) be not less than 1½ in. trade *size*,
(c) have orifices of at least 6 mm in diameter, spaced equally along the length of the pipe to provide even distribution of the *effluent*,
(d) be supported,
(e) be self-draining so as to prevent freezing of its contents, and
(f) have cleanouts installed at the downstream end of each line of *leaching chamber* to allow for servicing of the system.

8.7.4. Fill Based Absorption Trenches

8.7.4.1. Loading Requirements

(1) The area described in Sentence 8.7.4.2.(1) shall be designed such that the *loading rate* does not exceed, for *soil* having a *percolation time* set out in Column 1 of Table 8.7.4.1., the maximum value set out opposite it in Column 2 of Table 8.7.4.1.

Table 8.7.4.1.
Loading Rates for Fill Based Absorption Trenches and Filter Beds
Forming Part of Sentences 8.7.4.1.(1) and 8.7.5.2.(2)

Percolation Time (T) of *Soil*, min	Loading Rates, (L/m^2)/day
$1 < T \leq 20$	10
$20 < T \leq 35$	8
$35 < T \leq 50$	6
$T > 50$	4
Column 1	2

8.7.4.2. Construction Requirements

(1) Except for a *shallow buried trench*, a *leaching bed* comprised of *absorption trenches* may be *constructed* in *leaching bed fill*, if unsaturated *soil* or *leaching bed fill* complying with Subclause 8.7.2.1.(1)(b)(ii) extends
(a) to a depth of at least 250 mm over the area covered by the *leaching bed fill*, and
(b) for at least 15 m beyond the centre lines of the outer *distribution pipes* or *leaching chambers* in any direction in which the *effluent* entering the *soil* or *leaching bed fill* will move horizontally.

(2) If the unsaturated *soil* or *leaching bed fill* described in Sentence (1) has a *percolation time* greater than 15 min, any additional *leaching bed fill* added to it to form the *leaching bed* shall have a *percolation time* not less than 75% of the *percolation time* of the unsaturated *soil* or *leaching bed fill* to which it is added.

(3) *Leaching bed fill* that does not meet the requirements of Sentence (2) may be used to form the *leaching bed* if
(a) the distance from the bottom of the *absorption trench* to the underlying *soil* is not less than 900 mm, or
(b) where the distance from the bottom of the *absorption trench* to the underlying *soil* is less than 900 mm, the *percolation time* of the least permeable *soil* or *leaching bed fill* within 900 mm from the bottom of the *absorption trench* is used to calculate the length of the *distribution pipe* under Article 8.7.3.1. or the length of the *leaching chamber* under Article 8.7.3.2.

(4) Sentence (2) does not apply to any *leaching bed fill* added as backfill above the stone layer in which the *distribution pipe* is located.

(5) All *leaching bed fill* added shall be stabilized against erosion.

(6) The site to which the *leaching bed fill* is added shall be generally clear of vegetation.

(7) The *leaching bed fill* that is added shall be compacted in layers in such a manner as to avoid uneven settlement of the *distribution pipes* or *leaching chambers.*

(8) Any *distribution boxes*, *header lines*, *absorption trenches*, *distribution pipes* or *leaching chambers* shall be installed only after the *leaching bed fill* has been compacted in accordance with Sentence (7).

(9) Except as provided in Sentence (10), the sides of the added *leaching bed fill* shall be sloped to ensure stability, but shall not be steeper than one unit vertically to four units horizontally.

(10) The side slope of the *leaching bed fill* may be increased up to one unit vertically to three units horizontally if measures are taken to prevent erosion and ensure stability of the *leaching bed fill*.

(11) The distances set out in Column 2 of Table 8.2.1.6.B. shall be increased by twice the height that the *leaching bed* is raised above the original grade.

8.7.5. Filter Beds

8.7.5.1. Application

(1) The total daily design *sanitary sewage* flow shall not exceed
(a) 5 000 L where the *treatment unit* is a *septic tank*, or
(b) 10 000 L where the *treatment unit* is a Level II, Level III or Level IV *treatment unit* as described in Table 8.6.2.2.

8.7.5.2. Loading Requirements

(1) The effective area of the surface of the filter medium in each filter bed shall be at least 10 m^2 and not more than 50 m^2.

(2) The area described in Sentence 8.7.4.2.(1) shall be designed such that the *loading rate* does not exceed, for *soil* having a *percolation time* set out in Column 1 of Table 8.7.4.1., the maximum value set out opposite it in Column 2 of Table 8.7.4.1.

(3) Except as provided in Sentence (5), where the total daily design *sanitary sewage* flow does not exceed 3 000 L, the effective area shall be such that the loading on the surface of the filter medium does not exceed 75 L/m^2 per day.

(4) Except as provided in Sentence (5), where the total daily design *sanitary sewage* flow exceeds 3 000 L
(a) the effective area shall be such that the loading on the surface of the filter medium does not exceed 50 L/m^2 per day, and
(b) the *leaching bed* shall be comprised of more than one filter bed, each of similar size and adjacent to each other.

(5) Where a Level II, Level III or Level IV *treatment unit* as described in Table 8.6.2.2. is used in conjunction with a filter bed, the effective area shall be such that the loading on the surface of the filter medium does not exceed 100 L/m^2 per day.

8.7.5.3. Construction Requirements

(1) Sentences 8.7.4.2.(1), (2) and (4) to (11) apply to the *construction* of a filter bed.

(2) The lines of *distribution pipes* or *leaching chambers* shall be evenly spaced over the surface of the filter medium to which the *sanitary sewage* is applied, with the outer most *distribution pipe* or *leaching chamber* not more than 600 mm from the perimeter of that area with a maximum spacing between the centre lines of the *distribution pipes* or *leaching chambers* in accordance with Table 8.7.5.3.

(3) The filter medium shall have a minimum depth of 750 mm below the stone layer or bottom of the *leaching chambers* and shall be clean sand comprised of particles ranging in size between the limits of,
(a) an effective size of 0.25 mm with a uniformity coefficient not less than 3.5,
(b) an effective size of 2.5 mm with a uniformity coefficient not greater than 1.5, and
(c) having a uniformity coefficient not greater than 4.5.

Table 8.7.5.3.
Maximum Spacing Between Centre Lines of Distribution Pipes or Leaching Chambers
Forming Part of Sentence 8.7.5.3.(2)

Distribution Method	Maximum Spacing Between Centre Lines, mm
Distribution pipes	1 200
Type I *leaching chambers*	900
Type II *leaching chambers*	1 000

(4) The filter medium shall be unsaturated for its entire depth.

(5) Where there is more than one filter bed in a *leaching bed*, the filter beds shall be separated by at least 5 m between the *distribution pipes* or *leaching chambers* of the filter beds.

(6) The base of the filter medium shall extend to a thickness of at least 250 mm over an area meeting the requirements of the following formula:

$$A = QT/850$$

where,

A = the area of contact in square metres between the base of the filter medium and the underlying *soil*,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the lesser of 50 and the *percolation time* of the underlying *soil*.

(See Note A-8.7.5.3.(6) and (7))

(7) The stone layer or bottom of the *leaching chambers* shall be not less than 900 mm above the *high ground water table*, rock or *soil* with a *percolation time* of more than 50 min. (See Note A-8.7.5.3.(6) and (7))

8.7.6. Shallow Buried Trench

8.7.6.1. Construction Requirements (See Note A-8.7.6.1.)

(1) The *treatment unit* used in conjunction with a *leaching bed constructed* as a *shallow buried trench* shall provide an *effluent* quality that does not exceed the maximum concentrations set out opposite a Level IV *treatment unit* in Columns 2 and 3 of Table 8.6.2.2.

(2) The *effluent* shall be distributed through a *pressurized distribution system* having a pressure head of not less than 600 mm when measured to the most distant point from the pump.

(3) The pump chamber shall be sized to provide sufficient storage volume so that the *effluent* is evenly dosed on an hourly basis over a 24-hour period.

(4) A *shallow buried trench* shall not be *constructed* unless the *soil* or *leaching bed fill* is sufficiently dry to resist compaction and smearing during excavation.

(5) Every *chamber* or *leaching chamber* shall be as wide as the *shallow buried trench* in which it is contained, and the cross-sectional height of the *chamber* or *leaching chamber* at its centre point shall not be less than half the width of the trench.

(6) Every *chamber* or *leaching chamber* shall contain only one pressurized *distribution pipe*.

8.7.7. Type A Dispersal Beds

8.7.7.1. Construction Requirements

(1) The *treatment unit* used in conjunction with a *leaching bed constructed* as a *Type A dispersal bed* shall provide an *effluent* quality that does not exceed the maximum concentrations set out opposite a Level IV *treatment unit* in Columns 2 and 3 of Table 8.6.2.2.

(2) A *Type A dispersal bed* shall be backfilled with *leaching bed fill* so as to ensure that, after the *leaching bed fill* settles, the surface of the *leaching bed* will not form any depressions.

(3) The combined thickness of the sand layer and the stone layer if utilized of a *Type A dispersal bed* shall not be less than 500 mm.

(4) Except as provided in Sentence (5), the sand layer shall
(a) be comprised of sand that has
  (i) a *percolation time* of at least 6 and not more than 10 min, and
  (ii) not more than 5% fines passing through a 0.074 mm (No. 200) sieve,
(b) have a minimum thickness of 300 mm, and
(c) have an area that is not less than the lesser of
  (i) the area of the stone layer determined in accordance with Sentence (6) or, if *leaching chambers* are used, the area over which the *leaching chambers* are spaced determined in accordance with Sentence (7), and
  (ii) the value determined by the formula,

$$A = QT/850$$

where,

A = the area of contact in square metres between the base of the sand and the underlying *soil*,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the lesser of 50 and the *percolation time* of the underlying *soil*.

(5) Where the underlying *soil* has a *percolation time* of more than 15 min, the sand layer referred to in Sentence (4) shall be extended using unsaturated *soil* or *leaching bed fill* having a *percolation time* of not more than 15 min and a depth of at least 300 mm
(a) to at least 15 m beyond the perimeter of the *treatment unit*, or the centre lines of the outer *distribution pipes* or *leaching chambers* if utilized, in any direction in which the *effluent* entering the *soil* or *leaching bed fill* will move horizontally, and
(b) over an area that is not less than the value determined by the formula,

$$A = QT/400$$

where,

A = the area of contact in square metres between the combined sand layer and extension and the underlying *soil*, or *leaching bed fill* if utilized,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the lesser of 50 and the *percolation time* of the underlying *soil*.

(See Note A-8.7.7.1.(5))

(6) Where a stone layer is used, the stone layer shall
(a) be rectangular in shape with the long dimension parallel to the site contours,
(b) have a minimum thickness of 200 mm,
(c) be protected in the manner described in Sentence 8.7.3.4.(2), and

(d) be *constructed* such that the bottom of the stone layer is at least 600 mm above the *high ground water table*, rock or *soil* with a *percolation time* of 1 min or less or greater than 50 min.
(e) have a minimum area not less than the value determined by the formula,

$$A = Q/B$$

where,

A = the area of the stone layer in square metres,

B = the following amount,
(i) 50, if the total daily design *sanitary sewage* flow exceeds 3 000 litres, or
(ii) 75, if the total daily design *sanitary sewage* flow does not exceed 3 000 litres, and

Q = the total daily design *sanitary sewage* flow in litres.

(7) Where *leaching chambers* are used
(a) the *Type A dispersal bed* shall be rectangular in shape with the long dimension parallel to the site contours, and
(b) the *leaching chambers* shall
(i) be evenly spaced over the area calculated in Subclause (iv), with a maximum distance of 200 mm between the exterior edges of the lines of *leaching chamber*,
(ii) be protected in the manner described in Clause 8.7.3.5.(1)(f),
(iii) be *constructed* such that the bottom of the *leaching chambers* is at least 600 mm above the *high ground water table*, rock or *soil* with a *percolation time* of 1 min or less or greater than 50 min, and
(iv) have a minimum area not less than the value determined by the formula,

$$A = Q/B$$

where,

A = the area over which the *leaching chambers* are spaced, in square metres,

B = the following amount,
(i) 50, if the total daily design *sanitary sewage* flow exceeds 3 000 litres, or
(ii) 75, if the total daily design *sanitary sewage* flow does not exceed 3 000 litres, and

Q = the total daily design *sanitary sewage* flow in litres.

(8) *Leaching bed fill* with a *percolation time* not exceeding 15 min may be used to satisfy the vertical separation requirements of Clause (6)(d) or Subclause (7)(b)(iii), provided that the *leaching bed fill* conforms to the requirements specified in Sentence (5) regardless of the *percolation time* of the underlying *soil*.

(9) Where a stone layer is used, the *effluent* shall be evenly distributed within the stone layer to within 600 mm of the perimeter of the stone layer. (See Note A-8.7.7.1.(9))

(10) Where *leaching chambers* are used, the *effluent* shall be evenly distributed within the area over which the *leaching chambers* are spaced to within 600 mm of the perimeter of that area.

(11) The stone layer or area over which the *leaching chambers* are spaced shall not be located closer than the minimum horizontal distances set out in Table 8.2.1.6.B. and these distances shall be increased when required by Sentence 8.7.4.2.(11).

8.7.8. Type B Dispersal Beds

8.7.8.1. General Requirements

(1) Except as provided in Sentence (2) and Sentence 8.7.8.2.(2), a *Type B dispersal bed* shall conform to the requirements of Article 8.7.2.1.

(2) A *Type B dispersal bed* shall not be located in an area that has an average slope that exceeds one unit vertically to seven units horizontally.

8.7.8.2. Construction Requirements

(1) The *treatment unit* used in conjunction with a *leaching bed constructed* as a *Type B dispersal bed* shall provide an *effluent* quality that does not exceed the maximum concentrations set out opposite a Level IV *treatment unit* in Columns 2 and 3 of Table 8.6.2.2.

(2) A *Type B dispersal bed* shall be
(a) rectangular in shape with the long dimension parallel to the site contours,
(b) not more than 1 000 mm in depth measured from the bottom of the stone layer to the finished grade when installed in *soil* with a *percolation time* that exceeds 15 min, and
(c) backfilled with *leaching bed fill* so as to ensure that, after the *leaching bed fill* settles, the surface of the *leaching bed* will not form any depressions.

(3) The bottom of the stone layer shall be at least 600 mm above the *high ground water table*, rock or *soil* with a *percolation time* greater than 50 min.

(4) The *effluent* shall be distributed over the *Type B dispersal bed* through a *pressurized distribution system* having a pressure head of not less than 600 mm when measured to the most distant point from the pump.

(5) The *distribution pipes* shall
(a) be self-draining so as to prevent freezing of their contents, and
(b) have orifices of at least 3 mm in diameter, spaced equally along the length of the pipes.

(6) The stone layer containing the *distribution pipes* shall
(a) be comprised of washed septic stone, free of fine material, with gradation conforming to Table 8.7.3.4.,
(b) extend not less than 250 mm below the *distribution pipe*, and
(c) extend not less than 50 mm above the *distribution pipe*.

(7) The *distribution pipes* shall be spaced not more than 1.2 m apart with the outermost pipe spaced not more than 600 mm from the edge of the bed.

(8) The pump chamber shall be sized to provide sufficient storage volume so that the *effluent* is evenly dosed on an hourly basis over a 24-hour period.

(9) When there is more than one *Type B dispersal bed* in a *leaching bed*, the *Type B dispersal beds* shall be separated by at least 5 m measured from the edge of the stone layers.

(10) A *Type B dispersal bed* shall not be located closer than the minimum horizontal distances set out in Table 8.2.1.6.B. and these distances shall be increased when required by Sentence 8.7.4.2.(11).

8.7.8.3. Design Requirements (See Note A-8.7.8.3.)

(1) The area of a *Type B dispersal bed* shall not be less than the minimum area determined in accordance with Clause (2)(a) or (b).

(2) For the purposes of Sentence (1), the minimum area is either of the following:
(a) the area calculated based on the *loading rates* for Type 2 effluent set out in the Column headed "Type 2" found in Table 2-8 of the BCMOH, "Sewerage System Standard Practice Manual," or
(b) the value determined by the formula,

$$A = QT/400$$

where,

A = the area of contact in square metres between the stone layer and the underlying *soil*,

Q = the total daily design *sanitary sewage* flow in litres, and

T = the *percolation time* of the underlying *soil*.

(3) The linear *loading rates* of the underlying *soil* shall not be greater than
(a) the linear *loading rates* set out in Table 2-11 of BCMOH, "Sewerage System Standard Practice Manual," where the area of the *Type B dispersal bed* is determined in accordance with Clause (2)(a), or
(b) the following linear *loading rate*, where the area of the *Type B dispersal bed* is determined in accordance with Clause (2)(b)
  (i) 40 L/m, for *soil* having a *percolation time* equal to or greater than 24 min, or
  (ii) 50 L/m, for *soil* having a *percolation time* less than 24 min.

(4) The width of a *Type B dispersal bed* shall not exceed 4 m.

Section 8.8. Class 5 Sewage Systems

8.8.1. Application

8.8.1.1. Prohibited Installation

(1) Except as provided in Article 8.8.1.2., a Class 5 *sewage system* shall not be installed.

8.8.1.2. Acceptable Installation

(1) A Class 5 *sewage system* may be installed in the following circumstances:
(a) where the proposed use of the *sewage system* is for a temporary operation, excluding seasonal recreational use, not exceeding 12 months in duration,
(b) to remedy an unsafe *sewage system* where the remediation of the unsafe condition by the installation of a Class 4 *sewage system* is impracticable,
(c) to upgrade a *sewage system* serving an existing *building*, where upgrading through the use of a Class 4 *sewage system* is not possible due to lot size, site slope or clearance limitations, or
(d) as an interim measure for a lot or parcel of land until municipal sewers are available, provided that the municipality undertakes to ensure the continued operation of an approved *hauled sewage system* until the municipal sewers are available.

(2) Where a Class 5 *sewage system* is installed, a written agreement for the disposal of *sanitary sewage* from the *sewage system* shall be entered into with a *hauled sewage system* operator.

8.8.2. General Requirements

8.8.2.1. Construction Requirements

(1) All Class 5 *sewage systems* shall be equipped with a device that shall produce an audible and visual warning alarm so located to warn that the *sewage system* is nearing capacity.

(2) The device required in Sentence (1) shall be designed to provide suitable advance warning to the *building* occupants considering

(a) the total daily design *sanitary sewage* flow,
(b) the location of the Class 5 *sewage system*, and
(c) the response time of the *hauled sewage system* contractor.

(3) Except as provided in Sentence (4), all *holding tanks* shall be provided with a vent that

(a) is not less than 3 in. trade *size*,
(b) terminates at least,
  (i) 300 mm above finished grade with a vent cap, or
  (ii) 600 mm above finished grade with a vent cap when the *holding tank* is located in an area subject to flooding, and
(c) terminates at least 3.5 m away from any air inlet, window, or door.

(4) A vent from a *holding tank* may connect into the *venting system* of the *building* served by the *holding tank* provided that,

(a) the vent is not less than 3 in. trade *size*, and
(b) the installation of the vent shall conform to the requirements in Part 7.

8.8.2.2. Sizing of Holding Tanks

(1) All *holding tanks* used in residential dwellings shall have a minimum 7 day holding capacity based on the total daily design *sanitary sewage* flow.

Section 8.9. Operation and Maintenance

8.9.1. General

8.9.1.1. Scope

(1) This Section applies to the operation and maintenance of all *sewage systems*.

8.9.1.2. General Requirements for Operation and Maintenance

(1) Every *sewage system* shall be operated and maintained so that

(a) the *sewage system* or any part of it shall not emit, discharge or deposit *sanitary sewage* or *effluent* onto the surface of the ground,
(b) *sanitary sewage* or *effluent* shall not emit, discharge, seep, leak or otherwise escape from the *sewage system* or any part of it other than from a place or part of the *sewage system* where the system is designed or intended to discharge the *sanitary sewage* or *effluent*, and
(c) except as provided in Sentence (2), *sanitary sewage* or *effluent* shall not emit, discharge, seep, leak or otherwise escape from the *sewage system* or any part of it into a piped water supply, well water supply, a watercourse, *ground water* or *surface water*.

(2) Clause (1)(c) does not apply to the use of a *sewage system* designed and operated such that properly treated *effluent* is discharged into *soil*.

8.9.2. Operation

8.9.2.1. Scope

(1) The requirements of this Subsection are in addition to the requirements of Subsection 8.9.1.

8.9.2.2. General

(1) Every *sewage system* shall be operated in accordance with
(a) the basis on which the *construction* and use of the *sewage system* was approved or required under the Act or predecessor legislation, as the case may be, and
(b) the requirements of the manufacturer of the *sewage system*.

8.9.2.3. Class 4 Sewage Systems

(1) Every Class 4 *sewage system* shall be operated in accordance with the literature required by Sentence 8.6.2.2.(6).

(2) No person shall operate a *treatment unit* other than a *septic tank* unless the person has entered into an agreement whereby servicing and maintenance of the *treatment unit* and its related components will be carried out by a person who
(a) possesses a copy of the literature required by Sentence 8.6.2.2.(6), and
(b) is authorized by the manufacturer to service and maintain that type of *treatment unit*.

(3) The person authorized by the manufacturer to service and maintain the *treatment unit* and who has entered into the agreement referred to in Sentence (2) with the person operating the *treatment unit* shall notify the *chief building official* if,
(a) the agreement is terminated, or
(b) access for service and maintenance of the *treatment unit* is denied by the person operating the *treatment unit*.

8.9.2.4. Sampling of Treatment Units

(1) Every person operating a *treatment unit* that is used in conjunction with a *leaching bed constructed* as a *shallow buried trench*, *Type A dispersal bed* or *Type B dispersal bed* shall
(a) take a grab sample of the *effluent* to determine the level of $CBOD_5$ and suspended solids in the *effluent*,
(b) carry out the sampling required by Clause (1)(a) in accordance with the methods described in the APHA/AWWA/WEF, "Standard Methods for the Examination of Water and Wastewater," and
(c) promptly submit the results of the sampling required by Clause (a) to the *chief building official*.

(2) Except as provided in Sentence (4), the sampling required by Sentence (1) shall be conducted
(a) initially, once during the first 12 months after the *sewage system* was put into use, and
(b) thereafter, once during every 12 month period, at least 10 months and not more than 18 months after the previous sampling has been completed.

(3) The concentration of $CBOD_5$ and suspended solids in the grab sample described in Sentences (1) and (4) is deemed to comply with the maximum concentration requirements set out in Table 8.6.2.2. when it does not exceed 20 mg/L for each of these parameters.

(4) If the results of the sampling required by Sentence (1) do not comply with Sentence (3), the person operating the *treatment unit* shall
(a) resample the *effluent* in accordance with Clauses (1)(a) and (b) within 6 months after the previous sampling has been completed, and
(b) promptly submit the results of the resampling required by Clause (a) to the *chief building official*.

8.9.2.5. Class 5 Sewage Systems

(1) Every Class 5 *sewage system* shall be operated in accordance with the agreement referred to in Sentence 8.8.1.2.(2).

(2) No Class 5 *sewage system* shall be operated once it is filled with *sanitary sewage* until such time as the *sanitary sewage* is removed from the *sewage system*.

8.9.3. Maintenance

8.9.3.1. Scope

(1) The requirements of this Subsection are in addition to the requirements of Subsection 8.9.1.

8.9.3.2. General

(1) Every *sewage system* shall be maintained so that
(a) the *construction* of the *sewage system* remains in accordance with
  (i) the basis on which the *construction* and use of the *sewage system* was approved or required under the Act or predecessor legislation, as the case may be, and
  (ii) the requirements of the manufacturer of the *sewage system*, and
(b) all components of the *sewage system* function in their intended manner.

(2) The land in the vicinity of a *sewage system* shall be maintained in a condition that will not cause damage to, or impair the functioning of, the *sewage system*.

8.9.3.3. Interceptors

(1) Every grease *interceptor* referred to in Article 8.1.3.1. shall be maintained in accordance with CSA B481.4, "Maintenance of grease interceptors."

8.9.3.4. Class 4 Sewage Systems

(1) *Septic tanks* and other *treatment units* shall be cleaned whenever sludge and scum occupy one-third of the *working capacity* of the tank.

8.9.3.5. Pressurized Distribution Systems

(1) The pressure head at the furthest point from the pump in all *distribution pipes* shall be checked for compliance with Articles 8.7.6.1. and 8.7.8.2. and the design specification at least every 36 months.

Part 9

Housing and Small Buildings

Section 9.1. General

9.1.1. Application

9.1.1.1. Application

(1) The application of this Part shall be as described in Subsection 1.3.3. of Division A.

9.1.1.2. Signs

(1) Signs shall conform to the requirements in Section 3.15.

9.1.1.3. Self-Service Storage Buildings

(1) *Self-service storage buildings* shall conform to the requirements in Section 3.10.

9.1.1.4. Tents and Air-Supported Structures

(1) Tents shall conform to the requirements in Subsection 3.14.1.

(2) *Air-supported structures* shall conform to the requirements in Subsection 3.14.2.

9.1.1.5. Proximity to Existing Above Ground Electrical Conductors

(1) Where a *building* is constructed in close proximity to existing above ground electrical conductors, the requirements of Subsection 3.1.20. shall apply.

9.1.1.6. Food Premises

(1) The requirements of Subsection 3.7.6. apply to all *food premises*.

9.1.1.7. Radon

(1) In addition to all other requirements, a *building* in the following designated areas shall be designed and constructed so that the annual average concentration of radon 222 does not exceed 200 Bq/m^3 of air and the annual average concentration of the short lived daughters of radon 222 does not exceed 0.02 working levels inside the *building* for,

(a) the City of Elliot Lake in the Territorial District of Algoma,
(b) the Township of Faraday in the County of Hastings, and
(c) the geographic Township of Hyman in the Territorial District of Sudbury.

9.1.1.8. Building in Flood Plains

(1) *Buildings* constructed on flood plains shall,
(a) be designed and constructed in accordance with good engineering practice to withstand anticipated vertical and horizontal hydrostatic pressures acting on the structure, and
(b) incorporate floodproofing measures that will preserve the integrity of *exits* and *means of egress* during times of flooding.

9.1.1.9. Site Assembled and Factory-Built Buildings (See Note A-9.1.1.9.)

r1 **(1)** Except as provided in Sentence (2) and in Sentence 12.2.1.2.(2), a manufactured *building* is deemed to comply with this Code if it is designed and constructed in compliance with,
(a) CSA Z240.2.1, "Structural requirements for manufactured homes," if the *building* is constructed in sections not wider than 4.88 m, or
(b) CSA A277, "Procedure for certification of prefabricated buildings, modules, and panels."

(2) The requirements of this Code shall apply to,
(a) *building* components designed and constructed outside the place of manufacture, and
(b) site installation of such *buildings*.

9.1.1.10. Public Pools and Public Spas

(1) *Public pools* shall conform to the requirements of Section 3.11. and *public spas* shall conform to the requirements of Section 3.12.

9.1.1.11. Shelf and Rack Storage Systems

(1) *Shelf and rack storage systems* shall conform to the requirements of Section 3.16.

Section 9.2. Definitions

9.2.1. General

9.2.1.1. Defined Words

(1) Words in italics are defined in Article 1.4.1.2. of Division A.

Section 9.3. Materials, Systems and Equipment

9.3.1. Concrete

9.3.1.1. General

(1) Except as provided in Sentence (2) and Articles 9.3.1.6. and 9.3.1.7., unreinforced and nominally reinforced concrete shall be designed, mixed, placed, cured and tested in accordance with the requirements for "R" class concrete stated in Section 9 of CSA A23.1, "Concrete materials and methods of concrete construction."

9.10.9.9. Penetrations by Raceways, Sprinklers and Fire Dampers

(1) *Combustible* totally enclosed raceways that are embedded in a concrete floor slab are permitted in an assembly required to have a *fire-resistance rating*, provided the concrete cover between the raceway and the bottom of the slab is not less than 50 mm.

(2) Totally enclosed raceways are permitted to penetrate a *fire separation*, provided they are sealed at the penetration by a *firestop* conforming to Clause 9.10.9.6.(1)(a).

(3) Sprinkler piping is permitted to penetrate a *fire separation*, provided the *fire compartments* on each side of the *fire separation* are *sprinklered*.

(4) Sprinklers are permitted to penetrate a *fire separation* or a membrane forming part of an assembly required to have a *fire-resistance rating* without having to meet the *firestop* requirements of Article 9.10.9.6. and Clause 9.10.9.8.(6)(a), provided the annular space created by the penetration of a fire sprinkler is covered by a metal escutcheon plate in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems."

(5) *Fire dampers* are permitted to penetrate a *fire separation* or a membrane forming part of an assembly required to have a *fire-resistance rating* without having to meet the *firestop* requirements of Sentence 9.10.9.6.(1), provided the *fire damper* is
(a) installed in conformance with NFPA 80, "Standard for Fire Doors and Other Opening Protectives,"
(b) specifically designed with a *firestop*, or
(c) provided in conformance with Sentence 9.10.5.1.(3).
(See also Note A-3.1.9.2.(1).)

9.10.9.10. Collapse of Combustible Construction

(1) *Combustible construction* that abuts on or is supported by a *noncombustible fire separation* shall be constructed so that its collapse under fire conditions will not cause collapse of the *fire separation*.

9.10.9.11. Reduction in Thickness of Fire Separation by Beams and Joists

(1) Where pockets for the support of beams or joists are formed in a masonry or concrete *fire separation*, the remaining total thickness of solid masonry and/or grout and/or concrete shall be not less than the required equivalent thickness shown for Type S monolithic concrete in Table 2.1.1. of MMAH Supplementary Standard SB-2, "Fire Performance Ratings," for the required *fire-resistance rating*.

9.10.9.12. Concealed Spaces Above Fire Separations

(1) Except as provided in Sentence (2), a *horizontal service space* or other concealed space located above a required vertical *fire separation* shall be divided at the *fire separation* by an equivalent *fire separation* within the space.

(2) Where a *horizontal service space* or other concealed space is located above a required vertical *fire separation* other than a vertical shaft, such space need not be divided as required in Sentence (1) provided the construction between such space and the space below is constructed as a *fire separation* having a *fire-resistance rating* not less than that required for the vertical *fire separation*, except that where the vertical *fire separation* is not required to have a *fire-resistance rating* greater than 45 min, the *fire-resistance rating* of the ceiling is permitted to be reduced to 30 min.

9.10.9.13. Separation of Residential Occupancies

(1) Except as provided in Sentences (2) and (4), *residential occupancies* shall be separated from all other *major occupancies* by a *fire separation* having a *fire-resistance rating* of not less than 1 h.

(2) Except as provided in Sentence (3), a *major occupancy* classified as a *residential occupancy*, including *live/work units*, shall be separated from other *major occupancies* classified as *mercantile* or *medium hazard industrial occupancies* by a *fire separation* having a *fire-resistance rating* of not less than 2 h.

(3) Where not more than two *dwelling units* or *live/work units* are located in a *building* containing a *mercantile occupancy*, such *mercantile occupancy* shall be separated from the *dwelling units* or *live/work units* by a *fire separation* having not less than 1 h *fire-resistance rating*.

(4) The requirement for *fire separations* between *major occupancies* in Sentence (1) is waived for the *occupancies* allowed within *live/work units*.

9.10.9.14. Residential Suites in Industrial Buildings

(1) Except as provided in Sentence (2), not more than one *suite* of *residential occupancy* shall be contained within a *building* classified as a Group F, Division 2 *major occupancy*.

(2) Except where a Group F Division 2 *major occupancy* is directly related to *live/work units*, not more than one *suite* of *residential occupancy* shall be contained within a *building* classified as Group F, Division 2 *major occupancy*.

9.10.9.15. Separation of Suites

(1) Except as required in Article 9.10.9.16. and as permitted by Sentence (2), each *suite* in other than *business and personal services occupancies* shall be separated from adjoining *suites* by a *fire separation* having a *fire-resistance rating* of not less than 45 min.

(2) In *sprinklered buildings*, *suites* of *business and personal services occupancy* and *mercantile occupancy* that are served by *public corridors* conforming with Clause 3.3.1.4.(4)(b) are not required to be separated from each other by *fire separations*.

9.10.9.16. Separation of Residential Suites

(1) Except as provided in Sentences (2) and (3) and Article 9.10.21.2., *suites* in *residential occupancies* shall be separated from adjacent rooms and *suites* by a *fire separation* having a *fire-resistance rating* of not less than 45 min.

(2) Sleeping rooms in *boarding, lodging or rooming houses* where sleeping accommodation is provided for not more than 8 boarders or lodgers need not be separated from the remainder of the *floor area* as required in Sentence (1) where the sleeping rooms form part of the proprietor's residence and do not contain cooking facilities.

(3) Except as provided in Sentences (4) and (5), *dwelling units* that contain 2 or more *storeys* including *basements* shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* of not less than 1 h. (See Note A-3.3.4.4.(1))

e1 **(4)** Walls and floor-ceiling framing in a house with a *secondary suite* that separate *dwelling units* from each other or *dwelling units* from ancillary spaces and common spaces need not comply with Sentence (1), where the walls and floor-ceiling framing are protected by a continuous smoke-tight barrier of not less than 15.9 mm thick Type X gypsum board installed on

(a) both sides of walls, and
(b) the underside of floor-ceiling framing.

(5) The *fire-resistance rating* of the *fire separation* required in Sentence (4) is permitted to be waived where the house with a *secondary suite* is *sprinklered*.

9.10.9.17. Separation of Public Corridors

(1) Except as otherwise required by this Part and as provided in Sentences (2) to (5), *public corridors* shall be separated from the remainder of the *building* by a *fire separation* having not less than a 45 min *fire-resistance rating*.

(2) In other than *residential occupancies*, no *fire-resistance rating* is required for *fire separations* between a *public corridor* and the remainder of the *building* if
(a) the *floor area* is *sprinklered*,
(b) the sprinkler system is electrically supervised in conformance with Sentence 3.2.4.9.(3), and
(c) the operation of the sprinkler system will cause a signal to be transmitted to the fire department in conformance with Sentence 3.2.4.7.(4).

(3) In other than *residential occupancies*, no *fire separation* is required between a *public corridor* and the remainder of the *building* if
(a) the *floor area* is *sprinklered*,
(b) the sprinkler system is electrically supervised in conformance with Sentence 3.2.4.9.(3),
(c) the operation of the sprinkler system will cause a signal to be transmitted to the fire department in conformance with Sentence 3.2.4.7.(4), and
(d) the corridor exceeds 5 m in width.

e1 (**4)** Where a *public corridor* is located in a house with a *secondary suite*, a continuous smoke-tight barrier of not less than 15.9 mm thick Type X gypsum board shall be installed on
(a) both sides of walls separating the corridor from the remainder of the *building*, and
(b) the underside of floor-ceiling framing separating the corridor from the remainder of the *building*.

(5) No *fire separation* is required in a *sprinklered floor area* between a *public corridor* and a space containing plumbing fixtures required by Article 3.7.4.2. and Section 9.31., provided
(a) the space and the *public corridor* are separated from the remainder of the *storey* by a *fire separation* having a *fire-resistance rating* not less than that required between the *public corridor* and the remainder of the *storey*, and
(b) the *plumbing fixtures* are not located within a *dwelling unit* or *suite*.

9.10.9.18. Separation of Storage Garages

(1) Except as provided in Sentences (2) and (3), a *storage garage* shall be separated from other *occupancies* by a *fire separation* having not less than a 1.5 h *fire-resistance rating*.

(2) Except as permitted in Sentence (3), *storage garages* containing 5 motor vehicles or fewer shall be separated from other *occupancies* by a *fire separation* of not less than 1 h.

(3) Where a *storage garage* serves only the *dwelling unit* to which it is attached or in which it is built, it shall be considered as part of that *dwelling unit* and the *fire separation* required in Sentence (2) need not be provided between the garage and the *dwelling unit*.

(4) Except as provided in Sentence (5), where a *storage garage* is attached to or built into a *building* of *residential occupancy*
(a) an *air barrier system* conforming to Subsection 9.25.3. shall be installed between the garage and the remainder of the *building* to provide an effective barrier to gas and exhaust fumes, and
(b) every door between the garage and the remainder of the *building* shall conform to Article 9.10.13.15.
(See Note A-9.10.9.18.(4))

(5) Where membrane materials are used to provide the required airtightness in the *air barrier system*, all joints shall be sealed and structurally supported.

9.10.9.19. Separation of Repair Garages

(1) Except as provided in Sentences (2) and (3), a *repair garage* shall be separated from other *occupancies* by a *fire separation* having a *fire-resistance rating* of not less than 2 h.

(2) Ancillary spaces directly serving a *repair garage*, including waiting rooms, reception rooms, tool and parts storage areas and supervisory office space, need not be separated from the *repair garage* but shall be separated from other *occupancies* as required in Sentence (1).

(3) The *fire separation* referred to in Sentence (1) shall have a *fire-resistance rating* of not less than 1 h, where
(a) the *building* is not more than one *storey* in *building height*,
(b) the *building* is operated as a single *suite*, and
(c) the only *occupancy* other than the *repair garage* is a *mercantile occupancy*.

(**4)** Except as provided in Sentence (5), where a *building* containing a *repair garage* also contains a *dwelling unit*, an *air barrier system* conforming to Subsection 9.25.3. shall be installed between the *dwelling unit* and the *suite* containing the garage to provide an effective barrier to gas and exhaust fumes. (See Note A-9.10.9.18.(4))

(5) Where membrane materials are used to provide the required airtightness in the *air barrier system*, all joints shall be sealed and structurally supported.

9.10.9.20. Exhaust Ducts Serving More Than One Fire Compartment

(1) Where a *vertical service space* contains an *exhaust* duct that serves more than one *fire compartment*, the duct shall have a fan located at or near the exhaust outlet to ensure that the duct is under negative pressure.

(2) Individual *fire compartments* referred to in Sentence (1) shall not have fans that exhaust directly into the duct in the *vertical service space*.

9.10.9.21. Central Vacuum Systems

(1) Except as permitted by Sentence 9.10.18.7.(1), a central vacuum system shall serve not more than one *suite*.

9.10.10. Service Rooms

9.10.10.1. Application

(1) This Subsection applies to *service rooms* in all *buildings* except rooms located within a *dwelling unit*.

9.10.10.2. Service Room Floors

(1) The *fire-resistance rating* requirements in this Subsection do not apply to the floor assembly immediately below a *service room*.

9.10.10.3. Separation of Service Rooms

(1) Except as provided in Sentence (2) and Articles 9.10.10.5. and 9.10.10.6., *service rooms* shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* of not less than 1 h when the *floor area* containing the *service room* is not *sprinklered*.

(2) Where a room contains a limited quantity of service equipment and the service equipment does not constitute a fire hazard, the requirements in Sentence (1) shall not apply.

9.10.10.4. Locations of Fuel-Fired Appliances

(1) Except as provided in Sentences (2) and (3) and Article 9.10.10.5., fuel-fired *appliances* shall be located in a *service room* separated from the remainder of the *building* by a *fire separation* having not less than a 1 h *fire-resistance rating*.

e1 **(2)** Except as required in the *appliance* installation standards referenced in Sentences 6.2.1.5.(1) and 9.33.5.3.(1), fuel-fired *space-heating appliances*, space-cooling *appliances* and *service water heaters* need not be separated from the remainder of the *building* as required in Sentence (1),

(a) where the *appliances* serve
  (i) not more than one room or *suite*, or
  (ii) a *building* with a *building area* of not more than 400 m^2 and a *building height* of not more than 2 *storeys*, or

(b) where the *appliances*
  (i) serve a house with a *secondary suite* including their common spaces, and
  (ii) are located in a *service room* where both sides of any wall assemblies and the underside of any floor-ceiling framing separating this room from both *dwelling units* or their common spaces are protected by a continuous smoke-tight barrier consisting of not less than 15.9 mm thick Type X gypsum board.

(3) Sentence (1) does not apply to fireplaces and cooking *appliances*.

9.10.10.5. Incinerators

(1) *Service rooms* containing incinerators shall be separated from the remainder of the *building* by a *fire separation* having a *fire-resistance rating* of not less than 2 h.

(2) The design, construction, installation and alteration of each indoor incinerator shall conform to NFPA 82, "Standard on Incinerators and Waste and Linen Handling Systems and Equipment."

(3) Every incinerator shall be connected to a *chimney flue* conforming to the requirements in Section 9.21. and serving no other *appliance*.

(4) An incinerator shall not be located in a room with other fuel-fired *appliances*.

9.10.10.6. Storage Rooms

(1) Rooms for the temporary storage of *combustible* refuse and materials for recycling in all *occupancies* or for public storage in *residential occupancies* shall be separated from the remainder of the *building* by a *fire separation* having not less than a 1 h *fire-resistance rating*, except that a *fire separation* with a *fire-resistance rating* of not less than 45 min is permitted where

(a) the *fire-resistance rating* of the floor assembly is not required to exceed 45 min, or
(b) the room is *sprinklered*.

9.10.10.7. Emergency Power Installation

(1) Where a generator intended to supply emergency power for lighting, fire safety and life safety systems is located in a *building*, it shall be located in a room that,

(a) is separated from the remainder of the *building* by a *fire separation* with a *fire-resistance rating* not less than
  (i) 1 h, if the floor assembly is not required to have a *fire-resistance rating* of more than 1 h, and
  (ii) 2 h, if the floor assembly is required to have a *fire-resistance rating* of more than 1 h, and

(b) contains only the generating set and equipment that is related to the emergency power supply system.

9.10.11. Firewalls

9.10.11.1. Required Firewalls

(1) Except as provided in Articles 9.10.11.2., a *party wall* on a property line shall be constructed as a *firewall*. (See Note A-3.2.3.4.(1))

9.10.11.2. Firewalls Not Required

(1) A *party wall* on a property line of a *building* of *residential occupancy* need not be *constructed* as a *firewall*, provided it is *constructed* as a *fire separation* having not less than a 1 h *fire-resistance rating*, where the *party wall* separates

(a) two *dwelling units* where there is no *dwelling unit* above another *dwelling unit*,
(b) a *dwelling unit* and a house with a *secondary suite* including their common spaces, or
(c) two houses with a *secondary suite* including their common spaces.

(2) Reserved.

(3) The wall described in Sentence (1) shall provide continuous protection from the top of the footings to the underside of the roof deck.

(4) Any space between the top of the wall described in Sentence (1) and the roof deck shall be tightly filled with mineral wool or *noncombustible* material.

9.10.11.3. Construction of Firewalls

(1) Where *firewalls* are used, the requirements in Part 3 shall apply.

9.10.11.4. Firewalls in Detached Garages

(1) Where a garage is detached from the *dwelling unit* it serves but attached to another garage on the adjacent property, the *party wall* so formed shall be constructed as a *fire separation* having a *fire-resistance rating* of not less than 45 min.

9.10.12. Prevention of Fire Spread at Exterior Walls and Between Storeys

9.10.12.1. Termination of Floors or Mezzanines

(1) Except as provided in Sentence (2) and in Articles 9.10.1.3. and 9.10.9.5., the portions of a *floor area* or *mezzanine* that do not terminate at an exterior wall, a *firewall* or a vertical shaft, shall terminate at a vertical *fire separation* having a *fire-resistance rating* not less than that required for the floor assembly that terminates at the separation.

(2) A *mezzanine* need not terminate at a vertical *fire separation* where the *mezzanine* is not required to be considered as a *storey* in Articles 9.10.4.1. and 9.10.4.2.

9.10.12.2. Location of Skylights

(1) Where a wall in a *building* is exposed to a fire hazard from an adjoining roof of a separate *fire compartment* that is not *sprinklered* in the same *building*, the roof shall contain no skylights within a horizontal distance of 5 m of the windows in the exposed wall.

9.10.20.4. Portable Extinguishers

(1) Portable extinguishers shall be installed in all *buildings*, except within *dwelling units*, in conformance with the provisions of the Fire Code made under the *Fire Protection and Prevention Act, 1997*.

9.10.20.5. Freeze Protection for Fire Protection Systems

(1) Equipment forming part of a fire protection system that may be adversely affected by freezing temperatures and that is located in an unheated area shall be protected from freezing.

9.10.21. Fire Protection for Construction Camps

9.10.21.1. Requirements for Construction Camps

(1) Except as provided in Articles 9.10.21.2. to 9.10.21.9., *camps for housing of workers* in construction camps shall conform to Subsections 9.10.1. to 9.10.20.

9.10.21.2. Separation of Sleeping Rooms

(1) Except for sleeping rooms within *dwelling units*, sleeping rooms in a *building* in a *camp for housing of workers* shall be separated from each other and from the remainder of the *building* by a *fire separation* having not less than a 30 min *fire-resistance rating*.

9.10.21.3. Floor Assemblies Between the First and Second Storey

(1) Except in a *dwelling unit*, a floor assembly in a *building* in a *camp for housing of workers* separating the *first storey* and the second *storey* shall be constructed as a *fire separation* having not less than a 30 min *fire-resistance rating*.

9.10.21.4. Walkways Connecting Buildings

(1) *Walkways* of *combustible construction* connecting *buildings* shall be separated from each connected *building* by a *fire separation* having not less than a 45 min *fire-resistance rating*.

9.10.21.5. Spatial Separations

(1) *Buildings* in a *camp for housing of workers* shall be separated from each other by a distance of not less than 10 m unless otherwise permitted in Subsection 9.10.14.

9.10.21.6. Flame-Spread Ratings

(1) Except in *dwelling units* and except as provided in Sentence (2), the surface *flame-spread rating* of wall and ceiling surfaces in corridors and *walkways*, exclusive of doors, shall not exceed 25 over not less than 90% of the exposed surface area and not more than 150 over the remaining surface area.

(2) Except within *dwelling units*, corridors that provide *access to exit* from sleeping rooms and that have a *fire-resistance rating* of not less than 45 min shall have a *flame-spread rating* conforming to the appropriate requirements in Subsection 9.10.17.

9.10.21.7. Smoke Detectors

(1) Except in *dwelling units*, corridors providing *access to exit* from sleeping rooms in every *building* in a *camp for housing of workers* with sleeping accommodation for more than 10 persons shall have a *smoke detector* connected to the *building* alarm system.

9.10.21.8. Portable Fire Extinguishers

(1) Each *building* in a *camp for housing of workers* shall be provided with portable fire extinguishers in conformance with the provisions of the Fire Code made under the *Fire Protection and Prevention Act, 1997*.

9.10.21.9. Hose Stations

(1) Every *building* in a *camp for housing of workers* providing sleeping accommodation for more than 30 persons shall be provided with a hose station that is protected from freezing and equipped with a hose of sufficient length so that every portion of the *building* is within the range of a hose stream.

(2) Hose stations required in Sentence (1) shall be located near an *exit*.

(3) Hoses referred to in Sentence (1) shall be not less than 19 mm inside diam and shall be connected to a central water supply or to a storage tank having a capacity of not less than 4 500 L with a pumping system capable of supplying a flow of not less than 5 L/s at a gauge pressure of 300 kPa.

9.10.22. Fire Protection for Gas, Propane and Electric Cooktops and Ovens (See Note A-9.10.22.)

9.10.22.1. Installation of Cooktops and Ovens

(1) Reserved.

(2) Clearances for and protection around gas, propane and electric ranges shall be not less than those provided in Articles 9.10.22.2. and 9.10.22.3.

9.10.22.2. Vertical Clearances Above Cooktops

(1) Except as provided in Sentence (2), framing, finishes and cabinetry installed directly above the location of the *cooktop* shall be not less than 750 mm above the level of *cooktop* burners or elements.

(2) The vertical clearance described in Sentence (1) for framing, finishes and cabinets located directly above the location of the *cooktop* is permitted to be reduced to 600 mm above the level of the elements or burners provided the framing, finishes and cabinets

(a) are *noncombustible*, or
(b) are protected by a metal hood that projects 125 mm beyond the framing, finishes and cabinets.

9.10.22.3. Protection Around Cooktops

(1) Except as provided in Sentences (2) and (3), *combustible* wall framing, finishes or cabinets within 450 mm of the area where the *cooktop* is to be located shall be protected above the level of the heating elements or burners by

(a) gypsum board not less than 9.5 mm thick, or
(b) any material providing a *fire-resistance rating* of not less than 10 min and a *flame-spread rating* of not more than 25.

(e) ASTM D4811 / D4811M, "Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing,"
(f) ASTM D6878 / D6878M, "Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing,"
(g) CGSB 37-GP-9Ma, "Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing," where a primer is required,
(h) CAN/CGSB-37.50-M, "Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing,"
(i) CAN/CGSB-37.54, "Polyvinyl Chloride Roofing and Waterproofing Membrane,"
(j) CGSB 37-GP-56M, "Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing",
(k) CAN/CGSB-37.58-M, "Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing,"
(l) CAN/CSA-A123.2, "Asphalt-Coated Roofing Sheets,"
(m) CAN/CSA-A123.4, "Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems," in which case, they shall be installed with reinforcing material, or
(n) CSA A123.17, "Asphalt Glass Felt Used in Roofing and Waterproofing."

9.13.3.3. Preparation of Surface

(1) Surfaces to be waterproofed shall be prepared in accordance with the instructions of the waterproofing material manufacturer.

(2) Where the waterproofing material is to be applied on ICF walls, the instructions of the ICF wall manufacturer shall be followed.

(3) Unit masonry walls that are to be waterproofed shall be parged on exterior surfaces below ground level with not less than 6 mm of mortar conforming to Section 9.20. coved over the footing.

(4) Concrete walls that are to be waterproofed shall have all holes and recesses sealed with mortar or waterproofing material.

(5) Surfaces required to be waterproofed shall be clean and dry and free of ice, snow, frost, dust, dirt, oil, grease, cracks, projections and depressions, loose particles and debris that could be detrimental to the performance of the waterproofing material.

9.13.3.4. Application of Waterproofing Membranes

(1) Unless otherwise stated in this Subsection, waterproofing shall be installed in accordance with the manufacturer's instructions with regard to
(a) surface priming,
(b) conditions during application,
(c) the required number of layers of reinforcing fabric on *foundations*, footings, floors, walls and structural slabs,
(d) application quantity and rate, and
(e) curing times.

(2) Waterproofing shall be continuous across joints and at junctions between different *building* elements.

(3) The waterproofed surface shall be protected with a suitable material to minimize mechanical damage during backfilling.

(4) The area in which the waterproofing is to be carried out shall be kept free of water during the application and curing of the waterproofing system.

9.13.3.5. Floor Waterproofing System

(1) *Basement* floors-on-ground to be waterproofed shall have a system of membrane waterproofing provided between 2 layers of concrete, each of which shall be not less than 75 mm thick, with the floor membrane made continuous with the wall membrane to form a complete seal.

9.13.4. Soil Gas Control (See Note A-9.13.4.)

9.13.4.1. Application and Scope

(1) This Subsection applies to
(a) wall, roof and floor assemblies separating *conditioned space* from the ground, and
(b) the rough-in to allow the future protection of *conditioned space* that is separated from the ground by a wall, roof or floor assembly.

(2) This Subsection addresses the leakage of *soil* gas from the ground into the *building*.

(3) In areas of the province where radon gases are known to be a problem, the *building* shall be designed and constructed to meet the radon limitations in Article 9.1.1.7.

9.13.4.2. Protection from Soil Gas Ingress

r1 **(1)** Except as provided in Sentence (1.1), all wall, roof and floor assemblies in contact with the ground shall be constructed to resist the leakage of *soil* gas from the ground into the *building* in accordance with Subsection 9.25.3. or MMAH Supplementary Standard SB-9, "Requirements for Soil Gas Control."

(1.1) Construction to resist leakage of *soil* gas into the *building* is not required for garages and unenclosed portions of *buildings.*

(1.2) Where polyethylene is used to provide a barrier to *soil* gas ingress through floors-on-ground, it shall conform to CAN/CGSB-51.34-M, "Vapour Barrier, Polyethylene Sheet, for Use in Building Construction."

(2) Unless the space between the *air barrier system* and the ground is designed to be accessible for the future installation of a subfloor depressurization system, *dwelling units* and *buildings* containing *residential occupancies* shall be provided with the rough-in for a radon extraction system conforming to Article 9.13.4.3.

(3) Where *buildings* are used for *occupancies* other than those described in Sentence (2), protection from radon ingress and the means to address high radon concentrations in the future shall conform to
(a) Article 9.13.4.3., or
(b) Parts 5 and 6. (See Article 5.4.1.1. and 6.2.1.1.)
(See Note A-9.13.4.2.(3))

9.13.4.3. Providing for the Rough-in for a Subfloor Depressurization System (See Note A-9.13.4.3.)

(1) Floors-on-ground shall be provided with a rough-in for subfloor depressurization consisting of
(a) a gas-permeable layer, an inlet and an outlet as described in Sentence (2), or
(b) clean granular material and a pipe as described in Sentence (3).

(2) The rough-in referred to in Clause (1)(a) shall include
(a) a gas-permeable layer installed in the space between the air barrier and the ground to allow the depressurization of that space,
(b) an inlet that allows for the effective depressurization of the gas-permeable layer, and (See Note A-9.13.4.3.(2)(b) and (3)(b)(i))

Table 9.20.17.5.
Maximum Anchor Bolt Spacing for the Connection of Floor Ledgers to Flat Insulating Concrete Form Walls
Forming Part of Sentence 9.20.17.5.(3)

Maximum Clear Floor Span, m	Maximum Anchor Bolt Spacing, mm	
	Staggered 12.7 mm Diameter Anchor Bolts	Staggered 16 mm Diameter Anchor Bolts
2.44	450	500
3.00	400	450
4.00	300	400
5.00	275	325

9.20.17.6. Anchoring of Roof Framing to Top of Flat Insulating Concrete Form Walls

(1) Roof framing supported on the top of flat insulating concrete form walls shall be fixed to the top plates, which shall be anchored to the wall with anchor bolts
(a) not less than 12.7 mm in diameter, and
(b) spaced not more than 1 200 mm o.c.

(2) The anchor bolts described in Sentence (1) shall be placed in the centre of the flat insulating concrete form wall and shall be embedded no less than 100 mm into the concrete.

(3) Attachment of roof framing to wood top plates shall be in accordance with Table 9.23.3.4.

9.20.17.7. Protection from Precipitation and Damage

(1) Above-ground flat insulating concrete form walls shall be protected from precipitation and damage in conformance with Section 9.27.

Section 9.21. Masonry and Concrete Chimneys and Flues

9.21.1. General

9.21.1.1. Application

(1) This Section applies to,
(a) rectangular *masonry or concrete chimneys* not more than 12 m in height serving fireplaces or serving *appliances* having a combined total rated heat output of 120 kW or less, and
(b) *flue pipes* serving solid fuel-burning *appliances*.

(2) Reserved.

(3) Except as provided in Sentence 9.21.1.3.(1), *chimneys* (other than those described in Sentence (1) and Sentence 9.21.1.2.(1)), *gas vents* and *flue pipes* serving gas-, oil- or solid fuel-burning *appliances* and associated equipment shall conform to Section 6.3.

9.21.1.2. Chimney or Flue Pipe Walls

(1) The walls of any *chimney* or *flue pipe* shall be constructed so as to be smoke- and flame-tight.

9.21.1.3. Factory-Built Chimneys

(1) *Factory-built chimneys* serving solid fuel-burning *appliances*, and their installation, shall conform to CAN/ULC-S629, "Standard for 650°C Factory-Built Chimneys." (See Note A-9.21.1.3.(1))

9.21.1.4. Flue Pipes

(1) *Flue pipes* serving solid fuel-burning *stoves*, *cooktops* and *space heaters* shall conform to CSA B365, "Installation code for solid-fuel-burning appliances and equipment."

9.21.2. Chimney Flues

9.21.2.1. Chimney Flue Limitations

(1) A *chimney flue* that serves a fireplace or incinerator shall not serve any other *appliance*.

(2) A *chimney flue* that serves a solid fuel-burning *appliance* shall not be connected to a natural gas- or propane-fired *appliance*.

(3) A *chimney flue* that serves a solid fuel-burning *appliance* shall not be connected to an oil-burning *appliance* unless the solid fuel-burning *appliance* is *listed* for such installation and the installation of both *appliances* meets their respective installation requirements.

9.21.2.2. Connections of More Than One Appliance

(1) Except as required in Article 9.21.2.1., two or more fuel-burning *appliances* are permitted to be connected to the same *chimney flue* provided adequate draft is maintained for the connected *appliances* and the connections are made as described in Sentences (2) and (3).

(2) Where 2 or more fuel-burning *appliances* are connected to the same *chimney flue*, the *appliances* must be located on the same *storey*.

(3) The connection referred to in Sentence (2) for a solid fuel-burning *appliance* shall be made below connections for *appliances* burning other fuels.

9.21.2.3. Inclined Chimney Flues

(1) *Chimney flues* shall not be inclined more than 45° to the vertical.

9.21.2.4. Size of Chimney Flues

r1 **(1)** Except for *chimneys* serving fireplaces, the size of a *chimney flue* shall conform to the requirements of the solid fuel-burning *appliance* installation standards referenced in Sentence 6.2.1.4.(1) and Article 9.33.5.3.

(2) Where a *chimney flue* serves only one solid fuel-burning *appliance*, the *flue* area shall be at least equal to that of the *flue pipe* connected to it.

Table 9.23.3.4.
Nailing for Framing
Forming Part of Sentences 9.23.3.4.(1), (2) and 9.23.14.4.(2)

	Construction Detail	Minimum Length of Nails, mm	Minimum Number or Maximum Spacing of Nails
	Floor joist or blocking perpendicular to sill plate or top wall plate below – toe nail	82	2 per floor joist or blocking
	Rim joist, trimmer joist or blocking – supporting walls with required *braced wall panels* – to sill plate or top wall plate – toe nail	82	150 mm o.c.
	Wood or metal strapping to underside of floor joists	57	2
	Cross-bridging to joists	57	2 at each end
	Double header or trimmer joists	76	300 mm o.c.
	Floor joist to stud (balloon construction)	76	2
	Ledger strip to wood beam	82	2 per joist
	Joist to joist splice (See also Table 9.23.14.8.)	76	2 at each end
r1	Header joist end nailed to joists along perimeter	101	3
	Tail joist to adjacent header joist	82	5
	(end nailed) around openings	101	3
	Each header joist to adjacent trimmer joist	82	5
	(end nailed) around openings	101	3
	Stud to wall plate (each end) toe nail	63	4
	or end nail	82	2
	Doubled studs at openings, or studs at walls or wall intersections and corners	76	750 mm o.c.
	Doubled top wall plates(1)	76	600 mm o.c.
	Bottom wall plate or sole plate to floor joists, *rim joists* or blocking (exterior walls)(2)	82	400 mm o.c.
	Bottom wall plate or sole plate – in required *braced wall panels* – to floor joists, *rim joists* or blocking (exterior walls)(2)	82	150 mm o.c.
	Interior walls to framing or subflooring	82	600 mm o.c.
	Required *braced wall panels* – in interior walls – to framing above and below	82	150 mm o.c.
	Horizontal member over openings in non-*loadbearing* walls – each end	82	2
	Lintels to studs	82	2 at each end
	Ceiling joist to plate – toe nail each end	82	2
	Roof rafter, roof truss or roof joist to plate – toe nail(3)	82	3
	Rafter plate to each ceiling joist	101	2
	Rafter to joist (with ridge supported)	76	3
	Rafter to joist (with ridge unsupported)	76	See Table 9.23.14.8.
	Gusset plate to each rafter at peak	57	4
	Rafter to ridge board – toe nail – end nail	82	3
	Collar tie to rafter – each end	76	3
	Collar tie lateral support to each collar tie	57	2
	Jack rafter to hip or valley rafter	82	2
	Roof strut to rafter	76	3
	Roof strut to *loadbearing* wall – toe nail	82	2
	38 mm × 140 mm or less plank decking to support	82	2
	Plank decking wider than 38 mm × 140 mm to support	82	3
	38 mm edge laid plank decking to support (toe nail)	76	1
	38 mm edge laid plank to each other	76	450 mm o.c.
	End-joist or end-rafter to built-up wall stud(4)	76	5 or 8(5)

Notes to Table 9.23.3.4.:

(1) See Article 9.23.11.4. for requirements on the nailing of top plates in *braced wall bands*.

(2) See Sentence 9.23.3.4.(2).

(3) See Sentence 9.23.3.4.(3).

(4) See Sentence 9.23.13.5.(3).

(5) Where heavyweight construction is used in the roof of the space, at least 8 nails are required. (See Note A-9.23.13.2.(1)(a)(i))

9.23.3.5. Fastening for Sheathing or Subflooring

(1) Except as required by Sentences (2) to (4), fastening of sheathing and subflooring shall conform to Table 9.23.3.5.-A.

Table 9.23.3.5.-A
Fasteners for Subflooring and for Sheathing where the 1-in-50 HWP < 0.8 kPa and $S_a(0.2) \leq 0.70$
Forming Part of Sentence 9.23.3.5.(1)

Element	Minimum Length of Fasteners, mm				Minimum Number or Maximum Spacing of Fasteners
	Common or Spiral Nails	Ring Thread Nails or Screws	Roofing Nails	Staples	
Board lumber 184 mm or less wide	51	45	n/a	51	2 per support
Board lumber more than 184 mm wide	51	45	n/a	51	3 per support
Fibreboard sheathing up to 13 mm thick	n/a	n/a	44	28	150 mm o.c. along edges and 300 mm o.c. along intermediate supports
Gypsum sheathing up to 13 mm thick	n/a	n/a	44	n/a	
Plywood, OSB or waferboard up to 10 mm thick	51	45	n/a	38	
Plywood, OSB or waferboard over 10 mm and up to 20 mm thick	51	45	n/a	51	
Plywood, OSB or waferboard over 20 mm and up to 25 mm thick	57	51	n/a	n/a	

(2) Fastening of roof sheathing and sheathing in required *braced wall panels* shall conform to Table 9.23.3.5.-B, where
(a) the 1-in-50 hourly wind pressure (HWP) is equal to or greater than 0.8 kPa and less than 1.2 kPa and the seismic spectral acceleration, $S_a(0.2)$, is not more than 0.90, or
(b) the seismic spectral acceleration, $S_a(0.2)$, is greater than 0.70 and not more than 0.90.

(3) Fastening of roof sheathing and sheathing in required *braced wall panels* shall conform to Table 9.23.3.5.-C, where
(a) the 1-in-50 hourly wind pressure (HWP) is equal to or greater than 0.8 kPa and less than 1.2 kPa and the spectral acceleration, $S_a(0.2)$, is not more than 1.8, or
(b) the seismic spectral acceleration, $S_a(0.2)$, is greater than 0.90 and not more than 1.8.

(4) Fastening of sheathing shall conform to Part 4,
(a) where the 1-in-50 hourly wind pressure is equal to or greater than 1.2 kPa, or
(b) for required *braced wall panels*, where the seismic spectral acceleration, $S_a(0.2)$, is greater than 1.8.

(5) Staples shall not be less than 1.6 mm in diameter or thickness, with not less than a 9.5 mm crown driven with the crown parallel to framing.

9.24.3.2. Fire-Rated Walls

(1) Steel studs used in walls required to have a *fire-resistance rating* shall be installed so that there is not less than a 12 mm clearance between the top of the stud and the top of the runner to allow for expansion in the event of fire.

(2) Except as provided in Article 9.24.3.6., studs in walls referred to in Sentence (1) shall not be attached to the runners in a manner that will prevent such expansion.

(3) Framing above doors with steel door frames in non-*loadbearing fire separations* required to have a *fire-resistance rating* shall consist of 2 runners on the flat fastened back to back. (See Note A-9.24.3.2.(3))

(4) The lower runner required in Sentence (3) shall be cut through the flanges and be bent at each end to extend upwards at least 150 mm and fastened to the adjacent studs.

9.24.3.3. Orientation of Studs

(1) Steel studs shall be installed with webs at right angles to the wall face and, except at openings, shall be continuous for the full wall height.

9.24.3.4. Support for Cladding Materials

(1) Corners and intersections of walls shall be constructed to provide support for the cladding materials.

9.24.3.5. Framing Around Openings

(1) Studs shall be doubled on each side of every opening where such openings involve more than one stud space, and shall be tripled where the openings in exterior walls exceed 2.4 m in width.

(2) Studs described in Sentence (1) shall be fastened together by screws, crimping or welding to act as a single structural unit in resisting transverse loads.

9.24.3.6. Attachment of Studs to Runners

(1) Studs shall be attached to runners by screws, crimping or welding around wall openings, and elsewhere where necessary to keep the studs in alignment during construction.

(2) Where clearance for expansion is required in Article 9.24.3.2., attachment required in Sentence (1) shall be applied between studs and bottom runners only.

9.24.3.7. Openings for Fire Dampers

(1) Openings for *fire dampers* in non-*loadbearing fire separations* required to have a *fire-resistance rating* shall be framed with double studs on each side of the opening.

(2) The sill and header for openings described in Sentence (1) shall consist of a runner track with right angle bends made on each end so as to extend 300 mm above the header or below the sill and fastened to the studs.

e1 **(3)** The openings described in Sentence (1) shall be lined with a layer of gypsum board not less than 12.7 mm thick fastened to stud and runner webs.

Section 9.25. Heat Transfer, Air Leakage and Condensation Control

9.25.1. General

9.25.1.1. Scope and Application

(1) This Section is concerned with heat, air and water vapour transfer and measures to control condensation.

(2) All walls, ceilings and floors separating *conditioned space* from unconditioned space, the exterior air or the ground shall be

(a) provided with
  (i) thermal insulation conforming to Subsection 9.25.2.,
  (ii) an *air barrier system* conforming to Subsection 9.25.3., and
  (iii) a *vapour barrier* conforming to Subsection 9.25.4., and

(b) constructed in such a way that the properties and relative position of all materials conform to Subsection 9.25.5. (See Note A-9.25.1.1.(2))

(3) Insulation and sealing of heating and ventilating ducts shall conform to Sections 9.32., 9.33.

9.25.2. Thermal Insulation

9.25.2.1. Required Insulation

(1) All walls, ceilings and floors separating heated space from unheated space, the exterior air or the exterior *soil* shall be provided with sufficient thermal insulation to prevent moisture condensation on their room side during the winter and to ensure comfortable conditions for the occupants. (See Note A-9.1.1.1.(1))

9.25.2.2. Insulation Materials

(1) Except as required in Sentence (2), thermal insulation shall conform to the requirements of

(a) ASTM C726, “Standard Specification for Mineral Wool Roof Insulation Board,”
(b) CAN/CGSB-51.25-M, “Thermal Insulation, Phenolic, Faced,”
(c) CGSB 51-GP-27M, “Thermal Insulation, Polystyrene, Loose Fill,”
(d) CAN/ULC-S701.1, “Standard for Thermal Insulation, Polystyrene Boards,”
(e) CAN/ULC-S702.1, “Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification,”
(f) CAN/ULC-S703, “Standard for Cellulose Fibre Insulation (CFI) for Buildings,”
(g) CAN/ULC-S704.1, “Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced,”
(h) CAN/ULC-S705.1, “Standard for Thermal Insulation - Spray Applied Rigid Polyurethane Foam, Medium Density - Material – Specification,” or
(i) CAN/ULC-S706.1, “Standard for Wood Fibre Insulating Boards for Buildings.”

(2) The *flame-spread rating* requirements contained in the standards listed in Sentence (1) shall not apply. (See Note A-9.25.2.2.(2))

(3) Insulation in contact with the ground shall be inert to the action of *soil* and water and be such that its insulative properties are not significantly reduced by moisture.

(4) Type 1 expanded polystyrene insulation as described in CAN/ULC-S701.1, “Standard for Thermal Insulation, Polystyrene Boards,” shall not be used as roof insulation applied above the roofing membrane.

(4) Where an interior wall projects through a ceiling or extends to become an exterior wall, spaces in the wall shall be blocked to provide continuity across those spaces with the *air barrier system* in the abutting walls or ceiling by
(a) sealing each air barrier to the blocking, or
(b) wrapping each air barrier around the transition and sealing in accordance with Sentences (1) and (2).

(5) Where an interior floor projects through an exterior wall to become an exterior floor,
(a) the air barrier of the wall under the floor shall be continuous with or sealed to the subfloor or the air barrier on the underside of the floor,
(b) the air barrier of the wall above the floor shall be continuous with or sealed to the subfloor or the air barrier on the top of the floor, and
(c) the spaces between floor joists shall be blocked and sealed.

(5.1) Where a header wrap is used as an air barrier, it shall be sealed or lapped to the wall air barrier above and below in accordance with Sentences (1) and (2).

(6) Penetrations of the *air barrier system*, such as those created by the installation of electrical wiring, electrical boxes, piping or ductwork, shall be sealed to maintain the integrity of the *air barrier system* over the entire surface.

(6.1) Where an interior air barrier is penetrated by doors, windows and other fenestration, the air barrier shall be sealed to the door frame or window frame with
(a) compatible tape, or
(b) spray foam insulation.

(6.2) Where an exterior air barrier is penetrated by doors, windows and other fenestration, the air barrier shall be sealed to the door frame or window frame with
(a) compatible flexible flashing material,
(b) caulking, or
(c) spray foam insulation.

(7) Where access hatches and sump pit covers are installed through assemblies constructed with an *air barrier system*, they shall be weatherstripped around their perimeters to prevent air leakage.

(8) Clearances between *chimneys* or *gas vents* and the surrounding construction that would permit air leakage from within the *building* into a wall or *attic or roof space* shall be sealed by *noncombustible* material to prevent such leakage and shall be sealed to the air barrier with tape or another compatible material, and to the vent with high temperature caulking in accordance with the manufacturer's installation instructions.

r1 **(9)** Reserved.

(10) Sump pit covers shall be sealed to maintain continuity of the *air barrier system*.

9.25.3.3A. Vapour Barriers Used as Air Barriers

(1) A *vapour barrier* used as an air barrier shall comply with the requirements of this Subsection.

9.25.3.4. Reserved

9.25.3.5. Reserved

9.25.3.6. Reserved

9.25.4. Vapour Barriers

9.25.4.1. Required Barrier to Vapour Diffusion

(1) Thermally insulated wall, ceiling and floor assemblies shall be constructed with a *vapour barrier* so as to provide a barrier to diffusion of water vapour from the interior into wall spaces, floor spaces or *attic or roof spaces*.

9.25.4.2. Vapour Barrier Materials

(1) Except as provided in Sentence (2), *vapour barriers* shall have a permeance not greater than 60 ng/(Pa×s×m^2) measured in accordance with ASTM E96 / E96M, "Standard Test Methods for Water Vapor Transmission of Materials," using the desiccant method (dry cup).

(2) Thermally insulated *foundation* wall assemblies are permitted to be constructed with variable-permeance *vapour barriers* having a permeance not greater than 60 ng/(Pa×s×m^2) using the desiccant method (dry cup) and greater than 300 ng/(Pa×s×m^2) using the water method (wet cup) measured in accordance with ASTM E96 / E96M, "Standard Test Methods for Water Vapor Transmission of Materials." (See Note A-9.25.4.2.(2))

(3) Where the intended use of the interior space will result in high moisture generation, the assembly shall be designed according to Part 5. (See Note A-9.25.4.2.(3))

(4) Where polyethylene is installed to serve only as the *vapour barrier*, it shall comply with Clause 4.4, Thermal Stability, and Clause 5.7, Oxidative Induction Time, of CAN/CGSB-51.34-M, "Vapour Barrier, Polyethylene Sheet for Use in Building Construction."

(5) Membrane-type *vapour barriers* other than polyethylene shall conform to the requirements of CAN/CGSB-51.33-M, "Vapour Barrier, Sheet, Excluding Polyethylene, for Use in Building Construction."

(6) Membrane-type *vapour barriers* other than polyethylene that are susceptible to deterioration under prolonged exposure to direct ultraviolet radiation shall
(a) be covered, or
(b) only be installed in locations that are not exposed to direct ultraviolet radiation after the completion of construction.
(See Note A-9.25.4.2.(6))

(7) Where a coating is applied to gypsum board to function as the *vapour barrier*, the permeance of the coating shall be determined in accordance with CAN/CGSB-1.501-M, "Method for Permeance of Coated Wallboard."

(8) Where insulation functions as the *vapour barrier*, it shall be sufficiently thick so as to meet the requirement of Sentence (1).

9.25.4.3. Installation of Vapour Barriers

(1) Products installed to function as the *vapour barrier* shall protect the warm side of wall, ceiling and floor assemblies.

(2) Where different products are used for the *vapour barrier* and the insulation, the *vapour barrier* shall be installed sufficiently close to the warm side of the insulation to prevent condensation at design conditions. (See Notes A-9.25.4.3.(2) and A-9.25.5.1.(1))

(3) Where the same product is used for the *vapour barrier* and the insulation, the product shall be installed sufficiently close to the warm side of the assembly to prevent condensation at design conditions. (See Notes A-9.25.4.3.(2), A-9.25.5.1.(1) and A-9.25.5.2.)

9.29.5.3. Maximum Spacing of Supports

(1) Maximum spacing of supports for gypsum board applied as a single layer shall conform to Table 9.29.5.3.

Table 9.29.5.3.
Spacing of Supports for Gypsum Board
Forming Part of Sentence 9.29.5.3.(1)

Thickness, mm	Orientation of Board to Framing	Maximum Spacing of Supports, mm o.c.		
		Walls	Ceilings	
			Painted Finish	Water-Based Texture Finish
Gypsum board conforming to Sentence 9.29.5.2.(1) (except Sections 9 and 12 of ASTM C1396 / C1396M)				
9.5	parallel	—	—	—
	perpendicular	400	400	—
12.7	parallel	600	400	—
	perpendicular	600	600	400
15.9	parallel	600	400	—
	perpendicular	600	600	600
Gypsum board conforming to Clause 9.29.5.2.(1)(b) (only Section 12 of ASTM C1396 / C1396M)				
12.7	parallel	600	400	—
	perpendicular	600	600	600

9.29.5.4. Support of Insulation

(1) Gypsum board supporting insulation shall be not less than 12.7 mm thick.

9.29.5.5. Length of Fasteners

(1) The length of fasteners for gypsum board shall conform to Table 9.29.5.5., except that lesser depths of penetration are permitted for assemblies required to have a *fire-resistance rating* provided it can be shown, on the basis of fire tests, that such depths are adequate for the required rating

Table 9.29.5.5.
Fastener Penetration into Wood Supports
Forming Part of Sentence 9.29.5.5.(1)

Required *Fire-Resistance Rating* of Assembly	Minimum Penetration, mm			
	Walls		Ceilings	
	Nails	Screws	Nails	Screws
Not required	20	15	20	15
45 min	20	20	30	30
1 h	20	20	45	45
1.5 h	20	20	60	60

9.29.5.6. Nails

(1) Nails for fastening gypsum board to wood supports shall conform to
(a) ASTM F1667, "Standard Specification for Driven Fasteners: Nails, Spikes and Staples," or
(b) CSA B111, "Wire Nails, Spikes and Staples."

9.29.5.7. Screws

(1) Screws for fastening gypsum board to wood supports shall conform to ASTM C1002, "Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs."

9.29.5.8. Spacing of Nails

(1) For single-layer application on a ceiling, nails shall be spaced
(a) not more than 180 mm o.c. on ceiling supports, or
(b) every 300 mm o.c. along ceiling supports, in pairs about 50 mm apart.

(2) Where the ceiling sheets are supported by the wall sheets around the perimeter of the ceiling, this support may be considered as equivalent to nailing at this location.

(3) Except as required by Sentence (4), for single-layer application on walls, nails shall be spaced
(a) not more than 200 mm o.c. on vertical wall supports, or
(b) every 300 mm o.c. along vertical wall supports, in pairs about 50 mm apart.

(4) For single-layer application on walls, where gypsum board provides required bracing in *braced wall panels*, lateral support for studs, or fire protection, nails shall be spaced not more than 200 mm o.c. on
(a) vertical wall supports, and
(b) top and bottom plates.
(See Article 9.23.10.2. and Section 9.10.)

(5) The uppermost nails on vertical wall supports shall be not more than 200 mm below the ceiling.

(6) Nails shall be located not less than 10 mm from the side or edge of the board.

(7) Nails shall be driven so that the heads do not puncture the paper.

9.33.4. General Requirements for Heating and Air-Conditioning Systems

9.33.4.1. Design of Heating and Air-Conditioning Systems

(1) Heating, ventilating and *air-conditioning* systems, including related mechanical refrigeration systems, shall be designed, constructed and installed to conform to good engineering practice appropriate to the circumstances such as described in

(a) the ASHRAE Handbooks and Standards,

(b) CSA F280, "Determining the required capacity of residential space heating and cooling appliances," and the outside winter design temperatures shall conform to MMAH Supplementary Standard SB-1, "Climatic and Seismic Data,"

(c) CAN/CSA-F326-M, "Residential Mechanical Ventilation Systems,"

r1 (d) the NFPA Standards,

(e) the HRAI Digest,

(f) the Hydronics Institute Manuals, and

(g) the SMACNA Manuals.

(See also Subsection 9.32.3. for the design of systems that also provide ventilation.)

9.33.4.2. Installation of Hydronic Heating Systems

(1) The design and installation of hydronic heating systems shall conform to

(a) CSA B214, "Installation code for hydronic heating systems", or

(b) good engineering practice appropriate to the circumstances such as described in Article 9.33.4.1.

9.33.4.3. Heating System Control

(1) Each *dwelling unit* shall be provided with a temperature control in accordance with Article 12.3.1.3. (See Note A-9.33.4.3.(1))

9.33.4.4. Access

(1) Equipment forming part of a heating or *air-conditioning* system, with the exception of embedded pipes or ducts, shall be installed with provision for access for inspection, maintenance, repair and cleaning.

9.33.4.5. Protection from Freezing

(1) Equipment forming part of a heating or *air-conditioning* system that may be adversely affected by freezing temperatures and that is located in an unheated area shall be protected from freezing.

9.33.4.6. Expansion, Contraction and System Pressure

(1) Heating and cooling systems shall be designed to allow for expansion and contraction of the heat transfer fluid and to maintain the system pressure within the rated working pressure limits of all components of the system.

9.33.4.7. Structural Movement

(1) Mechanical systems and equipment shall be designed and installed to accommodate the maximum amount of structural movement provided for in the construction of the *building*.

(2) Where the *building* is in a location where the spectral acceleration, $S_a(0.2)$, is greater than 0.55, heating and *air-conditioning* equipment with fuel or power connections shall be secured to the structure to resist overturning and displacement. (See Note A-9.31.6.2.(3))

9.33.4.8. Asbestos

(1) Asbestos shall not be used in air distribution systems or equipment.

9.33.4.9. Contaminant Transfer

(1) Systems serving garages, and systems serving other occupied parts of a *dwelling unit* but located in or running through a garage, shall be designed and constructed in a manner such that means are not provided for the transfer of contaminants from the garage into other spaces in the *dwelling unit*.

9.33.5. Heating and Air-Conditioning Appliances and Equipment

9.33.5.1. Capacity of Heating Appliances

(1) The heating system capacity shall be based on the heating load calculated in accordance with Sentence 9.33.4.1.(1).

(2) Where a cooling system is installed, the cooling system capacity shall be based on the cooling load calculated in accordance with Sentence 9.33.4.1.(1).

(3) The oversizing and undersizing of heating and cooling equipment capacities shall be determined in accordance with the requirements of CSA F280, "Determining the required capacity of residential space heating and cooling appliances."

9.33.5.2. Installation Standards (See also Article 9.33.5.3.)

(1) The design and installation of earth energy systems shall conform to CAN/CSA-C448.2, "Design and installation of earth energy systems for residential and other small buildings," where such systems use groundwater, submerged heat exchangers or ground heat exchangers to serve,
(a) a house with or without a *secondary unit*, or,
(b) a *building*, a house with or without *a secondary unit*, where the *conditioned space* is not more than 1 400 m².

(2) Except for a house with or without a *secondary unit*, the design and installation of earth energy systems shall conform to CAN/CSA-C448.1, "Design and installation of earth energy systems for commercial and institutional buildings," where such systems use groundwater, submerged heat exchangers or ground heat exchangers to condition a floor space area more than 1 400 m².

9.33.5.3. Design, Construction and Installation Standard for Solid-Fuel-Burning Appliances

(1) The design, construction and installation, including the provision of combustion air, of solid-fuel-burning *appliances* and equipment, including *stoves*, *cooktops*, ovens and *space heaters*, shall conform to CSA B365, "Installation Code for Solid-Fuel-Burning Appliances and Equipment." (See Note A-9.33.5.3.(1))

(2) Solid fuel-burning *stoves*, *furnaces* and hydronic heating systems designed to burn solid fuels, other than coal, shall conform to the particulate emission limits of,
(a) CSA B415.1, "Performance Testing of Solid-Fuel-Burning Heating Appliances", or
(b) the "Standards of Performance for New Residential Wood Heaters", set out in Subpart AAA of Part 60 of Title 40 of the Code of Federal Regulations, published by the United States Environmental Protection Agency, as it read on March 16, 2015.
(See Note A-9.33.5.3.(2))

Part 10

Change of Use (See Note A-10)

Section 10.1. General

10.1.1. Scope

10.1.1.1. Scope

(1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A.

10.1.1.2. Change in Major Occupancy

(1) The following changes of use are also deemed to be a change in *major occupancy* for the purposes of this Part:
(a) a *suite* of a Group C *major occupancy* is converted into more than one *suite* of a Group C *major occupancy*,
(b) a *suite* or part of a *suite* of a Group A, Division 2 or Group A, Division 4 *major occupancy* is converted to a *gaming premises*,
(c) a *farm building* or part of a *farm building* is changed to another *major occupancy* other than a Group G *major occupancy*,
(d) a *building* or part of a *building* is changed to a *post-disaster building*,
(e) a *building* or part of a *building* is changed to a *retirement home*,
(f) the use of a *building* or part of a *building* is changed and the previous *major occupancy* of the *building* or part of the *building* cannot be determined, or
(g) a *farm building* or part of a *farm building* is changed to a Group G, Division 1 *major occupancy*.

Section 10.2. Classification of Existing Buildings

10.2.1. Classification

10.2.1.1. Classification of Major Occupancy

(1) Every existing *building* or part of it shall be classified according to its *major occupancy* in accordance with the requirements of Part 2 or Subsection 3.1.2.

10.2.1.2. Classification According to Construction and Occupancy

(1) Except as provided in Sentence (2), for the purposes of this Part, existing *buildings* shall be classified as to their *construction* and *occupancy* as provided for in Sentence 11.2.1.1.(1).

(2) For the purpose of Parts 10 and 11, the calculation of the *construction index* and *hazard index* for Group G *major occupancy* is permitted to be based on Group F, Division 2 *major occupancy*.

10.2.1.3. Building Size and Construction

r1 **(1)** The requirements of Articles 2.2.2.3. to 2.2.2.8. and 3.2.2.20. to 3.2.2.93. do not apply to this Part.

Section 10.3. Requirements

10.3.1. General

10.3.1.1. General

(1) Except as provided in Section 10.4., a *building* or part of a *building* subject to a change of *major occupancy* shall conform to the requirements of Subsection 3.2.6., Sections 3.7., 3.11. and 3.12., Sentences 6.3.1.1.(2), 6.3.2.7.(1) and 6.2.4.7.(1), Subsections 9.5.1. and 9.5.3., 9.5.3A. to 9.5.3F. and 9.5.4., Sentences 9.6.1.4.(3), (4), Article 9.7.2.3., Sentences 9.8.8.1.(4) to (8) and 9.9.10.1.(1) to (7), Subsection 9.10.17., Sections 9.31. and 9.32., and Subsections 9.34.1. to 9.34.3. as they apply to the new *major occupancy* that the *building* or part of a *building* is to support.

(2) Where a *major occupancy* is changed to a Group B, Division 2 *major occupancy*, heating, ventilating, and air conditioning systems shall conform to the requirements of Sentence 6.2.1.1.(1).

(3) Where a *major occupancy* is changed to a Group B, Division 3 *major occupancy*, ventilation, air circulation, and filtration systems, shall conform to the requirements of Sentence 6.2.1.1.(1).

10.3.2. Performance Level

10.3.2.1. General

(1) The *performance level* of a *building* after the change of *major occupancy* shall not be less than the *performance level* prior to the change of *major occupancy*.

(2) For the purposes of Sentence (1), reduction of *performance level* shall be determined in accordance with Article 10.3.2.2.

(3) For the purpose of this Subsection, where a permit to construct a *farm building* has been applied for before January 1, 2025, the *performance level* of the *farm building* is permitted to be evaluated based on the applicable requirements of Ontario Regulation 332/12 (Building Code) made under the Act, as it read on December 31, 2024.

10.3.2.2. Reduction in Performance Level

(1) Except as provided in Sentence (2), the *performance level* of a *building* or part of a *building* is reduced where the existing structural floor and roof framing systems and their supporting members are not adequate to support the proposed *dead loads* and *live loads* of the new *major occupancy* that the *building* is to support.

(2) The inadequacy of the existing structural floor or roof framing system and its supporting members to support the proposed *dead loads* and *live loads* does not reduce the *performance level* of the *building* if the portion of the floor affected by the proposed loads is restricted to the loading it will support and signs stating the restrictions are posted.

(3) Except as provided in Section 10.4., the *performance level* of a *building* or part of a *building* is reduced where the early warning and evacuation systems requirements of the *building* do not meet the early warning and evacuation systems requirements set out in Table 10.3.2.2.-A for the new *major occupancy* that the *building* is to support.

Part 11

Renovation

Section 11.1. General

11.1.1. Scope

11.1.1.1. Scope

(1) The scope of this Part shall be as described in Subsection 1.3.3. of Division A.

11.1.1.2. Definitions

(1) In this Part,

Building system means a combination of elements or components that form a complete major division of *construction* in the design of a *building* or part of a *building*, including a structural or framing system, a waterproofing system, a *drainage system*, an *exterior cladding* system, a roofing system, a window system, a *partition* system, a corridor system, a stair system, a fire alarm and detection system, a sprinkler system or a heating, ventilation or *air-conditioning* system, a *foundation* system, a standpipe and hose system, a flooring system, a *plumbing system*, a *sewage system* or an electrical system.

11.1.2. Application

11.1.2.1. Extension, Material Alteration or Repair

(1) Where an existing *building* is subject to extension, material alteration or repair,
(a) the proposed *construction* shall comply with Section 11.3., and
(b) the *performance level* of the *building* shall be evaluated and compensating *construction* shall be undertaken in accordance with Section 11.4.

Section 11.2. Classification of Existing Buildings

11.2.1. Classification

11.2.1.1. Construction Index and Hazard Index

(1) Where proposed *construction* will result in the change of *major occupancy* of all or part of an existing *building* to another *major occupancy*, the *building* shall be classified as to its,
(a) *construction* on the basis of its *construction index* as provided for in this Part, including Table 11.2.1.1.-A, and (See Note A-11.2.1.1.(1)(a))
(b) *occupancy* on the basis of its *hazard index* as provided for in this Part, including Tables 11.2.1.1.-B to 11.2.1.1.-N. (See Note A-11.2.1.1.(1)(b))

(2) Small or medium sized existing *buildings* as determined in Tables 11.2.1.1.-B to 11.2.1.1.-N facing multiple *streets* may be assigned a *hazard index* credit of 1, which may be subtracted from the *hazard index* of the proposed *major occupancy* to reduce the additional upgrading required by Table 11.4.3.4.-A provided,
(a) the *building* does not contain a Group B, Division 1, a Group C, or a Group F, Division 1 *occupancy*, and
(b) firefighting access complying with Articles 3.2.5.1. to 3.2.5.5. or Subsection 9.10.20. is provided.

r1 **(3)** The requirements of Articles 2.2.2.3. to 2.2.2.8. and 3.2.2.20. to 3.2.2.93. do not apply to this Part.

(4) For the purpose of this Part, the calculation of the *construction index* and *hazard index* for a Group G *major occupancy* is permitted to be based on a Group F, Division 2 *major occupancy*.

11.2.1.2. Multiple Occupancies

(1) The classification of an existing *building* of multiple *occupancy* under Article 11.2.1.1. shall be applied according to Articles 3.2.2.5. to 3.2.2.8.

11.2.1.3. Prohibition of Occupancy Combinations

(1) Nothing in this Part relieves an applicant from complying with the requirements of Article 2.2.1.2., 3.1.3.2. or 9.10.9.14.

Section 11.3. Proposed Construction

11.3.1. New and Existing Building Systems

11.3.1.1. Material Alteration or Repair of a Building System

(1) Where an existing *building system* is materially altered or repaired, the *performance level* of the *building* after the material alteration or repair shall be at least equal to the *performance level* of the *building* prior to the material alteration or repair. (See Note A-11.3.1.1.(1))

11.3.1.2. New Building Systems and Extension of Existing Building Systems

(1) Except as provided in Article 11.3.3.1. and Section 11.5., the design and *construction* of a new *building system* or the extension of an existing *building system*, shall comply with all other Parts. (See Note A-11.3.1.2.(1))

11.3.2. Extension of Buildings

11.3.2.1. Portion of Extended Buildings

(1) Where an existing *building* is extended,
(a) this Part applies to the existing portion of the *building*, and
(b) the extended portion of the *building* shall comply with all other Parts.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

C.A. Number	Division B Requirements	*Compliance Alternative*
C81	3.8.1.2.	Existing accessible entrance acceptable. (see C.A. C88) Existing curb *ramp* conforming to Sentence 3.8.3.2.(3) is acceptable. Existing principal entrance acceptable, provided at least one *barrier-free* entrance is available.
C82	3.8.1.3.(1)	Existing unobstructed width of 920 mm minimum is acceptable.
C83	3.8.1.3.(4)	Existing unobstructed space not less than 1 500 mm in width and 1 500 mm in length located not more than 30 m apart is acceptable.
C84	3.8.3.2.(3)(b)	Existing curb *ramp* acceptable, provided width not less than 1 200 mm.
C85	3.8.3.3.(1)	Existing doorway acceptable, provided not less than 800 mm wide.
C86	3.8.3.3.(11)(a)	Existing distance acceptable, provided not less than 1 200 mm plus the width of any door that swings into the space in the path of travel.
C87	3.8.3.4.(1)(a)	Existing *ramp* acceptable, provided not less than 870 mm between handrails.
C88	3.8.3.8.(5)	Existing grab bar is acceptable.
C89	3.8.3.12.	Existing universal washroom acceptable.
C90	3.8.3.13.(2) (g)	Existing grab bar is acceptable.
C91	3.8.3.16.	Existing drinking fountain conforming to Clauses 3.8.3.16.(2)(a) and (b) acceptable.
C92	3.11.3.1.(9)	Existing clear width acceptable, provided not less than 900 mm.
C93	3.11.3.1.(14)	Existing painted line acceptable.
C94	4.1.8.	The requirements under this Subsection do not apply.
C95	6.3.1.1.(2)	Required outdoor air rates may be provided by mechanical, natural or combination of natural and mechanical means.
C96	6.3.2.3.; 6.3.2.6.; 6.3.2.6A.; 6.3.2.10.	Existing acceptable.
C97	6.3.2.7.(1)	In a *building* containing not more than four *dwelling units* or residential *suites*, the existing heating or *air-conditioning* system may be altered to serve more than one *dwelling unit* or *suite*, provided *smoke alarms* are installed in *each* dwelling unit or *suite* and provided a *smoke detector* is installed in the supply or return air duct system serving the entire *building* which would turn off the fuel supply and electrical power to the heating system upon activation of such detector.
C98	6.3.2.9.	Existing openings, grilles and diffusers acceptable.
C99	6.3.3.	Existing acceptable, provided products of combustion are safely vented.
C100	6.5.1.1.	Existing acceptable.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

C.A. Number	Division B Requirements	*Compliance Alternative*
C101	6.9.4.4.(1)	*Carbon monoxide alarms* may be battery operated or plugged into an electrical outlet.
r1 C102	8.2.1.4.	Existing clearances acceptable where a *sewage system* is replaced with another *sewage system* within the same class and the capacity of the replacement *sewage system* does not exceed the capacity of the existing *sewage system*.
C103	8.2.1.4.	Existing clearances are acceptable where a replacement *sewage system* requires lesser clearances than those required in Part 8 for the existing *sewage system*.
C104	9.3.2.1.	Sound used lumber may be acceptable for reuse without a grade stamp provided that: (a) visual examination shows no excessive weakening by holes, notches, nail splits or other damage, (b) where the grade or species is unknown, the minimum grade shall apply for span table use, and (c) lumber has not been subjected to termite infestation.
C105	9.5.3.1.	Except for *secondary suites*, in a *dwelling unit*, (a) minimum room height shall not be less than 1 950 mm over the required floor area and in any location that would normally be used as a *means of egress*, or (b) minimum room height shall not be less than 2 030 mm over at least 50% of the required floor area, provided that any part of the floor having a clear height of less than 1 400 mm shall not be considered in computing the required floor area.
C106	9.5.11.1.	Doors may be lesser heights to suit ceiling heights.
C107	9.5.11.2.	Existing acceptable, provided not less than 600 mm.
C108	9.6.1.2.(2) and (3); 9.6.1.4.(1) and (2)	Existing doors and sidelights being reused or relocated need not conform if identified or protected.
C109	9.6.1.4.(3)	Existing acceptable, if marked to indicate their existence and position.
C110	9.7.2.3.	(a) Where windows are not used as a *means of egress* and where they do not conflict with ventilation requirements, the minimum glass areas as shown in Table 9.7.2.3. may be reduced by 50%, and (b) an existing room converted to an interior room, created by an addition, shall not require a window, provided there is an opening in a dividing wall occupying not less than 30% of the separating plane to an adjoining room, where the adjoining room has a minimum of 5% window area of the combined floor areas, and provided the required ventilation for the combined room is maintained.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

C.A. Number	Division B Requirements	*Compliance Alternative*
C139 (Cont'd)	9.9.9.	(D) the sill height does not exceed 900 mm above the floor or fixed steps, (E) where the window opens into a window well, a clearance of not less than 1 000 mm shall be provided in front of the window, and (F) *smoke alarms* are installed in every *dwelling unit* and in common areas in conformance with Subsection 9.10.19. and are interconnected, (ii) an additional means of escape is provided through a window that conforms to the following: (A) the window is a casement window not less than 1 060 mm high, 560 mm wide, with a sill height not more than 900 mm above the inside floor, (B) the sill height of the window is not more than 5 m above adjacent ground level, and (C) *smoke alarms* are installed in every *dwelling unit* and in common areas in conformance with Subsection 9.10.19. and are interconnected, or (iii) the *building* is *sprinklered* and the *dwelling units* are equipped with *smoke alarms* installed in conformance with Subsection 9.10.19.
C140	9.9.10.1.	In a single *dwelling unit* or a house with a *secondary suite*, existing acceptable, where there is direct access to the exterior.
C141	9.9.11.	In a single *dwelling unit* or a house with a *secondary suite*, the requirements under this Subsection do not apply.
C142	9.9.11.3.	Existing illuminated legible signs are acceptable for exit signs, if approved by *chief building official*.
C143	9.9.12.	In a single *dwelling unit* or a house with a *secondary suite*, the requirements under this Subsection apply only where the condition described in (b) of C.A. C139 exists.
C144	9.10.1.1.	Assemblies required to be of *noncombustible construction* may be supported by *combustible construction* having at least the same *fire-resistance rating* as that supported.
C145	9.10.1.3.(8) to (10)	Existing installations acceptable subject to C.A. C26, C27 and C28.
C146	9.10.3.	*Fire-resistance ratings* may also be used where they are based on: 1. HUD Rehabilitation Guidelines, “Guideline on Fire Ratings of Archaic Materials and Assemblies”. 2. DBR Technical Paper No. 194, “Fire Endurance of Protected Steel Columns and Beams”. 3. DBR Technical Paper No. 207, “Fire Endurance of Unit Masonry Walls”. 4. DBR Technical Paper No. 222, “Fire Endurance of Light-Framed and Miscellaneous Assemblies”.
C147	9.10.5.1.	(a) Existing openings in existing wall or ceiling membranes to remain. (b) Existing openings may be moved to another location in the same wall or ceiling, provided the aggregate area of openings does not increase and are not cumulative, and the existing opening is blocked up to provide the same rating as the existing wall or ceiling assembly.
C148	9.10.6.2.	Existing *heavy timber construction* acceptable where *construction* is within 90% of member sizes listed in Part 3.
C149	9.10.7.	Existing acceptable for *heritage buildings*, subject to approval of *chief building official*.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

	C.A. Number	Division B Requirements	*Compliance Alternative*
e1	C150	9.10.8.1.; 9.10.8.3.; 9.10.8.8.	(a) Except as provided in (b) and (c), 30 min rating is acceptable. (b) In a house with a *secondary suite*, 15 min horizontal *fire separation* is acceptable where, (i) *smoke alarms* are installed in every *dwelling unit* and in common areas in conformance with Subsection 9.10.19., and (ii) *smoke alarms* are interconnected. (c) In a house with a *secondary suite*, the *fire-resistance rating* of the *fire separation* is waived where the *building* is *sprinklered* throughout.
	C151	9.10.8.4.	Assemblies required to be of *noncombustible construction* may be supported by *combustible construction* having at least the same *fire-resistance rating* as that supported.
	C152	9.10.9.7.; 9.10.9.11.	Existing acceptable in existing *fire separations*.
	C153	9.10.9.12.(1)	Ceiling *fire separation* need not have a *fire-resistance rating* where sprinklering, subject to C.A. C27, of *fire compartments* on both sides of vertical *fire separation* is provided and where such *fire separation* is not required to exceed 1 h.
	C154	9.10.9.13.(1)	Except for hotels, 30 min *fire separation* acceptable.
	C155	9.10.9.13.(2)	In lieu of the 2 h *fire separation*, sprinklers may be used in the *mercantile occupancy* or *medium-hazard industrial occupancy*, with a 1 h *fire separation*.
e1	C156	9.10.9.16.(1) and (3); 9.10.9.17.(1)	(a) Except as provided in (b) and (c), 30 min *fire separation* is acceptable. (b) In a house with a *secondary suite*, 15 min horizontal *fire separation* is acceptable where, (i) *smoke alarms* are installed in every *dwelling unit* and in common areas in conformance with Subsection 9.10.19., and (ii) *smoke alarms* are interconnected. (c) In a house with a *secondary suite*, the *fire-resistance rating* of the *fire separation* is waived where the *building* is *sprinklered* throughout.
e1	C157	9.10.10.3.	(a) Except as provided in (b) and (c) and in Articles 9.10.10.5. and 9.10.10.6., 30 min *fire separation* is acceptable. (b) In a house with a *secondary suite*, the *fire-resistance rating* of the vertical *fire separation* is waived where, (i) *smoke alarms* are installed in every *dwelling unit* and in common areas in conformance with Subsection 9.10.19., and (ii) *smoke alarms* are interconnected. (c) In a house with a *secondary suite*, the *fire-resistance rating* of the vertical *fire separation* is waived where *service rooms* are *sprinklered*.
	C168	9.10.11.2.(1)	In an individual *dwelling unit* or a house with a *secondary suite*, a *party wall* with 1 h *fire-resistance rating* is acceptable.
	C169	9.10.13.1	Existing functional *closures* are acceptable subject to C.A.C8 and C160.
	C160	9.10.13.2.(1)	In an individual *dwelling unit* or a house with a *secondary suite*, existing unlabelled doors at least 45 mm solid core wood or metal clad are acceptable. For existing *closures*, ratings of 20 min will not be required where the entire *floor area* is *sprinklered*.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

C.A. Number	Division B Requirements	*Compliance Alternative*
C161	9.10.13.2.(1)	In a *building* containing not more than four *dwelling units* or *suites*, existing glazed solid wood doors to corridors may remain in lieu of new 20 min doors, provided they are not located in a dead-end corridor.
C162	9.10.13.3.	Existing acceptable provided that wood door frames are secured with hinge screws going through frame into the stud.
C163	9.10.13.5.	Existing wired glass acceptable.
		Existing transoms or sidelights located in required fire separations may be retained if wired glass, at least 6 mm thick, is securely fixed to a wood frame of at least 50 mm thickness with steel stops. Operable transoms shall be fixed closed.
C164	9.10.13.6.	Existing steel door frames acceptable.
C165	9.10.13.7.	Existing glass block acceptable.
C166	9.10.13.8.	Existing sizes acceptable.
C167	9.10.13.9.	Existing operable latches acceptable.
C168	9.10.13.10.(1)	Existing functionally operable self-closing devices acceptable.
C169	9.10.13.11.	Existing operable self-releasing electromagnetic hold-open device acceptable, and except for hotels, fusible link hold-open devices acceptable.
C170	9.10.13.12.	Existing swings acceptable.
C171	9.10.13.13.(1)	Except as permitted in C.A. C172, in a *building* containing not more than four *dwelling units*, the existing heating or *air-conditioning* system may be altered to serve more than one *dwelling unit*, provided *smoke alarms* are installed in each *dwelling unit* and provided a *smoke detector* is installed in the supply or return air duct system serving the entire *building* which would turn off the fuel supply and electrical power to the heating system upon activation of such detector.
r1 C172	9.10.13.13.(1)	In detached houses, semi-detached houses, townhouses and row houses containing not more than two *dwelling units*, or houses with a *secondary suite*, existing acceptable.
C173	9.10.13.14.; 9.10.5.1.	Except as permitted in C.A. C174, in a *building* containing not more than four *dwelling units*, the existing heating *or* air-conditioning system may be altered to serve more than one *dwelling unit*, provided *smoke alarms* are installed in each *dwelling unit* and provided a *smoke detector* is installed in the supply or return air duct system serving the entire *building* which would turn off the fuel supply and electrical power to the heating system upon activation of such detector.
C174	9.10.13.14.; 9.10.5.1.	In an individual *dwelling unit* or a house with a *secondary suite*, existing acceptable.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

C.A. Number	Division B Requirements	*Compliance Alternative*
C175	9.10.14.2.(2) and (3); 9.10.14.4.(2); 9.10.15.2.(3) and (4); 9.10.15.4.(9)	Where an addition to an existing residential *building* has its *exposing building face* further distant from the line than the existing *exposing building face* and the limiting distance is at least 1 200 mm, the total area of allowable *unprotected openings* may be determined under Sentence 9.10.14.2.(2) or 9.10.15.2.(3) for the combined new and existing *exposing building faces* and, (a) where the existing exposing building face has no unprotected openings, or the existing unprotected openings are to be filled in, the total allowable area of unprotected openings may be installed in the new exposing building face, or (b) where the existing unprotected openings are to remain, (i) their area shall be deducted from the total allowable area of *unprotected openings*, and the balance may be installed in the new *exposing building face*, and (ii) Sentences 9.10.14.2.(3) and 9.10.14.4.(2) or Sentences 9.10.15.2.(4) and 9.10.15.4.(9) apply only to the new *exposing building face*.
C176	9.10.14.4.; 9.10.15.4.	Existing windows. (a) Existing windows in walls may be relocated to another part of the wall, provided the existing opening is blocked up to provide the same fire rating for the wall, and the projection of the new opening, at a right angle to the property line onto another *building*, lies no closer than 300 mm from a window in such other *building*, where the "opposite" window is less than 2 400 mm from the opposite new opening, and (b) except relocation of units, to be restricted to the same *fire compartment* and shall conform to the requirements of Article 3.2.3.14. or 9.10.12.3. where applicable, or (c) where a *building* does not satisfy the requirements of Subsection 3.2.3. for the amount of openings facing a yard or space that does not have sufficient *limiting distance*, such existing openings are allowed to be relocated provided: (i) such openings are not increased in size and they are protected with wired glass in steel frames conforming to Sentence 3.1.8.16.(2), or (ii) the *building* is *sprinklered*.
C177	9.10.16.2.(1)	Where balloon framing is exposed during renovation, *fire blocks* shall be provided.
C178	9.10.18.	(a) Subject to approval by the *chief building official*, existing fire alarm system may remain where the fire safety plan (as described in the Fire Code made under the *Fire Protection and Prevention Act, 1997*) for the *building* addresses the intent of Subsection 3.2.4. (i.e. "stage" system, electrical supervision, detection as required, Fire Department connection, and emergency power supply), and (b) extension of an existing system must ensure continuity and compatibility, and integrity of the system.
C179	9.10.19.4.	*Smoke alarms* may be battery operated.
C180	9.10.20.	Existing access acceptable.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

C.A. Number	Division B Requirements	*Compliance Alternative*
C181	9.11.1.1.	Where a house contains a *secondary suite*, each *dwelling unit* shall be separated from every other space in the house in which noise may be transmitted by: (a) *construction* (i) whose joist spaces are filled with sound-absorbing material of not less than 150 mm nominal thickness, (ii) whose stud spaces are filled with sound-absorbing material, (iii) having a resilient channel on one side of the separation spaced 400 or 600 mm o.c., and, (iv) having not less than 12.7 mm thick gypsum board on ceilings and on both sides of walls, (b) *construction* providing an *STC* rating of not less than 43, or (c) a separating assembly and adjoining constructions, which together provide an *ASTC* rating of not less than 40.
C182	9.14.2.1.(1.1)	Existing acceptable.
C183	9.18.2.	Existing access acceptable.
C184	9.18.3.	Existing vents and ventilation acceptable.
C185	9.19.	Existing acceptable.
C186	9.20.2.2.	Used masonry may be reused for patching and filling openings to match adjacent work. Used interior brick may not be used for exterior applications.
C187	9.20.3.	Archaic mortars may be used to match existing jointing.
C188	9.20.4.1.	Sound jointing techniques may be employed to match existing archaic joints.
C189	9.20.12.1.	Corbelling may be constructed to match existing or original details, provided that it is structurally adequate for the proposed use.
C190	9.21.	Existing acceptable, provided the products of combustion are safely vented and provided no fire hazard is created.
C191	9.22.1. to 9.22.7.	Sound period materials, designs and techniques may be employed in recreated fireplaces, provided no fire hazard is created. Existing need not comply with Article 9.22.1.4.
C192	9.23.	Existing acceptable.
C193	9.24.	Existing acceptable.
C194	9.25.	A *vapour barrier* may consist of paint or other coating with specified perm rating such as two coats of leafing aluminum pigmented paint.
C195	9.26.	Existing acceptable, except when removing and replacing shingles, comply with the eave protection requirements of Subsection 9.26.5.
C196	9.27.	Existing acceptable.
C197	9.28.	All replacement or recreation of existing stucco may be compatible with the existing materials and application.

Table 11.5.1.1.-C (Cont'd)
Compliance Alternatives for Residential Occupancies
Forming Part of Article 11.5.1.1.

	C.A. Number	Division B Requirements	*Compliance Alternative*
	C198	9.29.4.	Existing acceptable. All replacement or recreation of existing plaster may be compatible with the existing materials and application.
	C199	9.32.	In an individual *dwelling unit* or a house with a *secondary suite*, rooms or spaces shall be ventilated by natural means in accordance with Subsection 9.32.2. or by providing adequate mechanical ventilation.
r_1	C200	9.32.3.9C.	*Carbon monoxide alarms* may be battery operated or plugged into an electrical outlet.
r_1	C201	9.33.1.1.	In a *building* containing not more than four *dwelling units*, the existing heating or *air-conditioning* system may be altered to serve more than one *dwelling unit*, provided *smoke alarms* are installed in each *dwelling unit* and provided a *smoke detector* is installed in the supply or return air duct system serving the entire *building* which would turn off the fuel supply and electrical power to the heating system upon activation of such detector.
	C202	9.33.5.3.	Sound, used or antique *appliances* are acceptable, provided that: (a) visual examination shows no excessive weakening by corrosion or other damage, (b) no structural parts are missing, (c) no cracks are present in the components intended to support the *appliance* or enclose the fire, and (d) loading and ash removal door latches and hinges hold the door closed.
	C203	9.33.6.5.(1); 9.33.6.6.(1) to (3), (5), (11) and (12)	Existing acceptable.
	C204	9.33.6.6.(8)	Where the duct system is being altered, lesser amounts and extent of insulation will be permitted.
	C205	9.33.6.13.(7.1)	In a *building* containing not more than four *dwelling units* or residential *suites*, the existing heating or *air-conditioning* system may be altered to serve more than one *dwelling unit* or *suite*, provided *smoke alarms* are installed in each *dwelling unit* or *suite* and provided a *smoke detector* is installed in the supply or return air duct system serving the entire *building* which would turn off the fuel supply and electrical power to the heating system upon activation of such detector.
	C206	9.38.	Sound used materials shall be acceptable for reuse, subject to the following limitations: (a) visual examination shows no excessive weakening by holes, notches, nail splits or other damage, and (b) logs have not been subjected to termite infestation.
	C207	12.2.1.2.(3)	(a) Where the framing systems are being altered to match the existing framing, lesser amounts and extent of insulation and *vapour barrier* is acceptable. (b) Existing acceptable for Article 2.1.1.9. of MMA Supplementary Standard SB-12, “Energy Efficiency for Housing”. (c) Existing previously occupied log houses that are dismantled and reconstructed are exempt from Article 3.1.1.6. of MMA Supplementary Standard SB-12, “Energy Efficiency for Housing”.

Division C
Administrative Provisions

Part 1

General

(3) When undertaking an inspection required under Sentence (1) or (2), the *inspector* or *registered code agency*, as the case may be, may consider reports concerning whether the *building* or a part of the *building* complies with the Act or this Code

(4) For greater certainty, when undertaking an inspection required under Sentence (1) or (2), the *inspector* or *registered code agency*, as the case may be, may choose to not attend at the physical site of the *building* and may instead undertake the inspection using other means.

(5) The time periods referred to in Sentences (1) and (2) shall begin on the day following the day on which the notice is given.

(6) The time periods referred to in Sentences (1) and (2) shall not include Saturdays, holidays and all other days when the offices of the *principal authority* are not open for the transaction of business with the public.

1.3.5.4. Construction of Sewage Systems

(1) The following information is prescribed for the purposes of subsection 15.12(3) of the Act and must be provided to the *chief building official* before the commencement of the *construction* of a *sewage system*:

(a) the information described in Sentence 3.3.4.1.(2) as it relates to,
  (i) the person registered under Article 3.3.3.2., and
  (ii) the person with the qualifications described in Clause 3.3.3.2.(1)(a) who will supervise *construction* on-site of the *sewage system*, and

(b) the name and telephone number of the representative of the person described in Subclause (a)(i) who may be contacted by the *chief building official* in respect of the *construction* of the *sewage system*.

1.3.5.5. Orders

(1) An order issued under subsection 12(2), 13(1) or (6), 14(1) or 15.10.1(2) or clause 18(1)(f) of the Act shall be in a form approved by the *Minister*.

1.3.6. As Constructed Plans

1.3.6.1. Application

(1) Where a by-law, resolution or regulation has been made by a *principal authority* under clause 7(1)(g) of the Act, the *chief building official* may require that *as constructed plans* for the whole of, or any part or system of, a *building* or any class of *buildings* be provided by the persons responsible for the *construction*.

r1 1.3.7. Temporary Health or Residential Facilities

1.3.7.1. Application

(1) In this Subsection

"proponent" means a person or entity described in clause (a) or (b) of the definition of "temporary health or residential facility";

"temporary health or residential facility" means a *building* or structure that was occupied, in accordance with Article 1.3.7.3. of Ontario Regulation 332/12 (Building Code), before April 1, 2024 and that is used or intended to be used to provide, on a temporary basis for the purpose of responding to the COVID-19 pandemic and its effects, health care or sleeping accommodation, by or on behalf of,

(a) any health service provider as defined in paragraphs 1 to 5 of the definition of "health service provider" in subsection 1(2) of the *Connecting Care Act, 2019*, or
(b) any government, including, for greater certainty, a municipality.

1.3.7.2. Exemption

(1) The *construction* of a temporary health or residential facility and the conversion of all or part of an existing *building* or structure to a temporary health or residential facility are exempt from the requirement to obtain a permit under section 8 or 10 of the Act and are exempt from compliance with this Code.

1.3.7.3. Reserved

1.3.7.4. Inspections

(1) A *chief building official* or an *inspector* shall, in accordance with Sentence (2), undertake an inspection of the temporary health or residential facility pursuant to subsection 15.9(1) of the Act to determine whether the facility is unsafe as described in subsection 15.9(2) of the Act.

(2) An inspection described in Sentence (1) shall be undertaken on or before a date that is not later than one month after the date of the previous inspection.

(3) For greater certainty, for the purpose of Sentence (2), if the temporary health or residential facility was inspected in accordance with Ontario Regulation 332/12 (Building Code), the date of the previous inspection is the date that it was last inspected under that Regulation.

(4) When undertaking an inspection required under Sentence (1), the inspector may consider reports concerning whether the temporary health or residential facility or part of the facility is unsafe as described in subsection 15.9(2) of the Act.

Section 1.4. Search Warrant

1.4.1. Forms

1.4.1.1. Information & Warrant Forms

(1) An information to obtain a warrant to enter and search a *building*, receptacle or place under subsection 21(1) of the Act shall be in Form 1.4.1.1.-A.

(2) A warrant to enter and search a *building*, receptacle or place under subsection 21(1) of the Act shall be in Form 1.4.1.1.-B.

FORM 1.4.1.1.-A
INFORMATION TO OBTAIN SEARCH WARRANT UNDER SECTION 21 OF THE BUILDING CODE ACT, 1992

Building Code Act, 1992

ONTARIO COURT OF JUSTICE
PROVINCE OF ONTARIO

This is the information of _____
(name)
of _____, _____.
(address) (occupation)
I have reasonable ground to believe and do believe that the offence of _____

_____ contrary to *Building Code Act, 1992*

Section _____ has been committed and that the entry into and search of a certain building, receptacle or place, namely,

_____
(building, receptacle or place)
_____

of _____, at _____
(owner) (address)
will afford the following evidence: _____

_____
(describe evidence to be searched for, including things to be seized, if any)
relevant to the commission of the offence.

And I further say that my grounds for so believing are:

_____

_____

Therefore, I request that a search warrant be issued to

Check appropriate box

☐ • enter into and search the said _____
(building, receptacle or place)
_____ for the said evidence.

☐ • enter into and search the said _____
(building, receptacle or place)
_____ for the said evidence and to seize the following things: _____
(describe things to be seized)

_____
Informant

Sworn before me at _____,

this _____ day of _____, _____

_____
Provincial Judge or Justice of the Peace in and for the Province of Ontario

This Page

Intentionally Left Blank

Section 1.7. Enforcement of the Provisions of the Act and this Code Related to Sewage Systems

1.7.1. General

1.7.1.1. General

(1) The boards of health and conservation authorities listed in Column 1 of Table 1.7.1.1. are prescribed, for the purposes of subsection 3.1(1) of the Act, as the boards of health and conservation authorities that are responsible for the enforcement of the provisions of the Act and this Code related to *sewage systems* in the *municipalities* and territory without municipal organization prescribed in Column 2 of Table 1.7.1.1.

Table 1.7.1.1.
Enforcement of the provisions of the Act and this Code Related to Sewage Systems
Forming Part of Sentence 1.7.1.1.(1)

Board of Health or Conservation Authority	Geographic Area
Board of Health of the Northwestern Health Unit	All municipalities and territory without municipal organization located in the Northwestern Health Unit
Board of Health of the Thunder Bay District Health Unit	All municipalities and territory without municipal organization located in the Thunder Bay District Health Unit
Board of Health of the Porcupine Health Unit	All municipalities and territory without municipal organization located in the Porcupine Health Unit
Board of Health of the Algoma Health Unit	All municipalities and territory without municipal organization located in the Algoma Health Unit
Board of Health of the Sudbury and District Health Unit	All municipalities and territory without municipal organization located in the Sudbury and District Health Unit
Board of Health of the Timiskaming Health Unit	All municipalities and territory without municipal organization located in the Timiskaming Health Unit
North Bay-Mattawa Conservation Authority	All municipalities and territory without municipal organization located in: a. the District of Nipissing, except those parts of the District of Nipissing located in the Timiskaming Health Unit, and b. the District of Parry Sound, except for the Township of The Archipelago, the geographic Townships of Blair, Brown, Harrison, Henvey, Mowat and Wallbridge and the unsurveyed territory north of the geographic Township of Henvey to the French River.
Column 1	2

Section 1.8. Language

1.8.1. Language

1.8.1.1. Language Used on Required Signs

e1 **(1)** All required signs in this Code shall be displayed in the English language or in the English and French languages, including operational material on all life safety equipment and devices.

Section 1.9. Fees

1.9.1. Fees

1.9.1.1. Annual Report

(1) The report referred to in subsection 7(4) of the Act shall contain the following information in respect of fees authorized under clause 7(1)(c) of the Act:

(a) total fees collected in the 12-month period ending no earlier than three months before the release of the report,

(b) the direct and indirect costs of delivering services related to the administration and enforcement of the Act in the area of jurisdiction of the *principal authority* in the 12-month period referred to in Clause (a),

(c) a breakdown of the costs described in Clause (b) into at least the following categories:

(i) direct costs of administration and enforcement of the Act, including the review of applications for permits and inspection of *buildings*, and

(ii) indirect costs of administration and enforcement of the Act, including support and overhead costs, and

(d) if a reserve fund has been established for any purpose relating to the administration or enforcement of the Act, the amount of the fund at the end of the 12-month period referred to in Clause (a).

(2) The *principal authority* shall give notice of the preparation of a report under subsection 7(4) of the Act to every person and organization that has requested that the *principal authority* provide the person or organization with such notice and has provided an address for the notice.

1.9.1.2. Change of Fees

(1) Before passing a by-law or resolution or making a regulation under clause 7(1)(c) of the Act to introduce or change a fee imposed for applications for a permit, for the issuance of a permit or for a maintenance inspection, a *principal authority* shall,

(a) hold the public meeting required under subsection 7(6) of the Act,

(b) ensure that a minimum of 21 days notice of the public meeting is given in accordance with Clause (c), including giving 21 days notice to every person and organization that has, within five years before the day of the public meeting, requested that the *principal authority* provide the person or organization with such notice and has provided an address for the notice,

(c) ensure that the notice under Clause (b),

(i) sets out the intention of the *principal authority* to pass the by-law or resolution or make a regulation under section 7 of the Act and whether the by-law, resolution or regulation would impose any fee that was not in effect on the day the notice is given or would change any fee that was in force on the day the notice is given,

(ii) is sent by regular mail to the last address provided by the person or organization that requested the notice in accordance with Clause (b), and

(iii) sets out the information described in Clause (d) or states that the information will be made available at no cost to any member of the public upon request, and

(d) make the following information available to the public:

(i) an estimate of the costs of administering and enforcing the Act by the *principal authority*,

(ii) the amount of the fee or of the change to the existing fee, and

(iii) the rationale for imposing or changing the fee.

e1

Table 3.5.2.2.
Classes of Registration and Categories of Qualifications for Registered Code Agencies
Forming Part of Sentence 3.5.2.2.(1)

Classes of Registration for *Registered Code Agencies*	Category of Qualification for Persons Described in Clauses 3.4.3.2.(1)(a) to (c)	Type of *Building* Reference to Table 3.5.2.1.
House	House	Column 3 of Item 1
	Plumbing – House	Column 3 of Item 5
	HVAC – House	Column 3 of Item 7
	On-Site *Sewage Systems*	Column 3 of Item 10
Small *Buildings*	Small *Buildings*	Column 3 of Item 2
	Plumbing – All *Buildings*	Column 3 of Item 6
	Building Services	Column 3 of Item 8
	Building Structural	Column 3 of Item 9
	On-Site *Sewage Systems*	Column 3 of Item 10
Large *Buildings*	Large *Buildings*	Column 3 of Item 3
	Plumbing – All Buildings	Column 3 of Item 6
	Building Services	Column 3 of Item 8
	Building Structural	Column 3 of Item 9
	On-site *Sewage Systems*	Column 3 of Item 10
Complex *Buildings*	Complex *Buildings*	Column 3 of Item 4
	Plumbing – All *Buildings*	Column 3 of Item 6
	Building Services	Column 3 of Item 8
	Building Structural	Column 3 of Item 9
	On-Site *Sewage Systems*	Column 3 of Item 10
On-Site *Sewage Systems*	On-Site *Sewage Systems*	Column 3 of Item 10
Column 1	2	3

Section 3.6. Insurance

3.6.1. Scope

3.6.1.1. Scope

(1) This Section prescribes, for the purposes of subsection 15.13(1) of the Act, the insurance coverage that *registered code agencies* and persons referred to in subsection 15.11(5) of the Act must have.

3.6.2. Insurance for Registered Code Agencies and Persons Referred to in Subsection 15.11(5) of the Act

3.6.2.1. Definition

(1) In this Subsection,

"registered person" means a person who is registered under Sentence 3.2.4.2.(1) or 3.4.3.2.(1).

3.6.2.2. Scope

(1) Every registered person shall have insurance coverage under an insurance policy that satisfies the requirements set out in Article 3.6.2.3.

3.6.2.3. Insurance Coverage

(1) The insurance policy,

(a) shall indemnify the registered person against liability imposed by law arising out of the performance of or the failure to perform services as a registered person during any time while the person is registered under Sentence 3.2.4.2.(1) or 3.4.3.2.(1) for claims that are first made and reported to the insurer during the period of insurance or during any extended reporting period required by Clause (1)(c),

(b) shall set out the name of the registered person,

(c) in the case of a *registered code agency* registered under Sentence 3.4.3.2.(1),

(i) shall require an extended reporting period of two years for the purposes of giving notice of any claim or occurrence that the *registered code agency* could reasonably foresee might give rise to a claim, with respect to an event that occurs prior to the person ceasing to be insured,

(ii) shall provide that the extended reporting period described in Subclause (i) shall commence on the day the *registered code agency* ceases to be insured, and

(iii) shall require the *registered code agency* to make full payment of all premiums for the extended reporting period referred to in Subclause (i) as part of the premiums for the issuance of the insurance policy,

(d) shall provide for insurance coverage to commence,

(i) on the date the registered person becomes registered, or

(ii) in the case of a registered person previously insured in accordance with this Article, on the expiry of the previous policy,

(e) shall require the insurer to provide prompt written notice to the *director* if the policy is declared void for material misrepresentation,

(f) shall specify a limit of indemnity for any one claim and in the aggregate during any one period of insurance that is not less than,

(i) in the case of persons registered under Sentence 3.2.4.2.(1),

(A) $1,000,000 per claim and $2,000,000 in the aggregate, if the person billed $100,000 or more in fees in the 12 months immediately before the issuance of the policy,

(B) $500,000 per claim and $1,000,000 in the aggregate, if the person billed more than $50,000 and less than $100,000 in fees in the 12 months immediately before the issuance of the policy,

(C) $250,000 per claim and $500,000 in the aggregate, if the person billed $50,000 or less in fees in the 12 months immediately before the issuance of the policy, or

(D) the limits of indemnity for any one claim and in the aggregate that are set out in Sub-subclause (A), (B) or (C), as determined by reference to the person's estimated fees billings for the 12-month period immediately after the issuance of the policy, if the person has been registered less than one year before the issuance of the policy, and

(ii) in the case of a *registered code agency* registered under Sentence 3.4.3.2.(1), $1,000,000 per claim and $2,000,000 in the aggregate, except that those limits shall apply exclusively to the exercise of the powers and performance of the duties of a *registered code agency* under the Act and shall be in addition to any insurance applicable to any other activities carried on by the *registered code agency*,

(g) shall provide that any costs and expenses necessarily incurred by the insurer in the investigation, defence or settlement of claims under the policy shall not be part of the limit of indemnity set out in Clause (f) unless the limit of indemnity from any one claim exceeds $2,000,000,

(h) shall not provide that the insured shall be responsible for the first portion of any sum that the insured becomes legally liable to pay in respect of a claim made against him, her or it in respect of any one claim or occurrence in an amount exceeding the lesser of,

(i) $70,000, and

(ii) 5% of,

(A) the amount of fees billed by the insured in the 12 months immediately before the issuance of the policy, or

e1 Index(1)

(1) Items contained in the Index are referenced to the numbering system used in this Code instead of to page numbers.

References occur in Division B unless noted as follows:
[A] - references occur in Division A
[C] - references occur in Division C

A

B

C

D

E

F

G

H

I

J

K

L

M

N

O

P

Q

R

S

T

U

V

W

Y

Z

2024 Building Code Compendium

Volume 2

November 4, 2024

Issued November 4, 2024

COMMENCEMENT

Supplementary Standards SA-1, SB-1 to SB-13 and SC-1 come into force on the 1st day of January 2025.

See "Code Amendment History" page in the Preface of Volume 1 for information concerning amendments to Supplementary Standards issued through Minister's Rulings.

1. NRC Copyright:

This Publication contains material that is copyrighted by the National Research Council of Canada and reproduced herein under a licence agreement.

2. NRC Disclaimer:

"This Publication contains material that is copyrighted by the National Research Council of Canada and reproduced herein under a licence agreement. The National Research Council of Canada makes no representations, warranties or conditions, statutory or otherwise as to the accuracy or completeness of its copyright material, including the opinions expressed therein, or its suitability for any user's requirements."

ISBN 978-1-4868-8446-9 Print – Set

Questions regarding copyright, including reproduction and distribution, may be directed to the Director, Building and Development Branch, of the Ministry of Municipal Affairs and Housing.

Tel: 416-585-6666
E-Mail: Codeinfo@ontario.ca

Table of Contents

Volume 1

Volume 2

Plumbing System

"Plumbing" is defined in the *Building Code Act, 1992*. Each of the three systems (drainage, venting, water) appearing in the definition are further defined in Article 1.4.1.2., with the end result that a plumbing system encompasses all three elements.

Other piping systems as listed below are excluded from plumbing system since the definition of water system limits the system to the point of juncture with outlets, fixtures, etc. Similarly, a drainage system starts at the fixture or plumbing appliance it drains.

A plumbing system does not include,

(a) a system of piping,
  (i) for space heating in which water is used as a medium to transfer heat,
  (ii) in which liquids or vapours are circulated for the purpose of cooling or refrigeration,
  (iii) through which air is passed for the purpose of controlling the temperature, humidity or motion of air passing through the system,
  (iv) that conveys water for the purpose of providing water or nutrients to the soil,
  (v) that conveys water for the purpose of landscaping or for the care of animals, birds or fish,
  (vi) that transmits force by means of water or by means of a liquid other than water in which water is used for cooling,
  (vii) that conveys liquids for the purpose of melting ice or snow, or
  (viii) that uses water in the conveyance of flammable gas or fuel; or

(b) a well, a well pump installed for the purpose of conveying water from a well, a pressure tank and pump if the tank and pump are combined as a unit, the piping between any well pump and the well, the piping between a well pump and a pressure tank that is installed separate from the pump and the connection of the piping to such pressure tank, and when there is no well pump, any piping connected to the well for a distance of three feet from the outside of the well.

Public Corridor

A covered mall is considered to be a public corridor and, as such, is subject to the same requirements as a public corridor.

Public Heritage Building

This definition addresses smaller heritage buildings that are to be made available to the public for viewing as examples of an architectural period or periods in the past, depicting how our forebears lived, worked or played, and what artifacts, objects or clothing were in use at that time. These buildings are not considered museums as such, and therefore would not be subject to the more stringent requirements of assembly occupancies for that use.

Service Room

Typical examples of service rooms include boiler rooms, furnace rooms, incinerator rooms, garbage handling rooms, and rooms to accommodate air-conditioning or heating appliances, pumps, compressors and electrical equipment. Rooms such as elevator machine rooms and common laundry rooms are not considered as service rooms.

Suite

Tenancy in the context of the term "suite" applies to both rental and ownership tenure. In a condominium arrangement, for example, dwelling units are considered separate suites even though they are individually owned. In order to be of complementary use, a series of rooms that constitute a suite are in reasonably close proximity to each other and have access to each other either directly by means of a common doorway or indirectly by a corridor, vestibule or other similar arrangement.

The term "suite" does not apply to rooms such as service rooms, common laundry rooms and common recreational rooms that are not leased or under a separate tenure in the context of the Code. Similarly, the term suite is not normally applied in the context of buildings such as schools and hospitals, since the entire building is under a single tenure. A rented room in a long-term care home could be considered as a suite if the room was under a separate tenure. A hospital bedroom on the other hand is not considered to be under a separate tenure, since the patient has little control of that space, even though he pays the hospital a per diem rate for the privilege of using the hospital facilities, which include the sleeping areas.

For certain requirements in the Code, the expression "room or suite" is used (e.g. travel distance). This means that the requirement applies within the rooms of suites as well as to the suite itself and to rooms that may be located outside the suite. In other places the expression "suite, and rooms not located within a suite" is used (e.g. for the installation of smoke and heat detectors). This means that the requirement applies to individual suites as defined, but not to each room within the suite. The rooms "not within a suite" would include common laundry rooms, common recreational rooms and service rooms, that are not considered as tenant occupied space.

a1 **Secondary Suite**

A secondary suite is a self-contained dwelling unit that is part of a building containing not more than two dwelling units (including the secondary suite) and any common spaces such as common storage, common service rooms, common laundry facilities or common areas used for egress.

Secondary suites are typically created within a new or existing single dwelling unit—commonly called a "house"—either constructed as an addition to an existing house or incorporated during the construction of a new house. A secondary suite may have more than one storey and may be on the same level as the otherl dwelling unit of the house or be above or below it.

Examples of buildings where secondary suites are permitted include individual detached houses, or where the secondary suite is located in a portion of a building, semi-detached houses (half of a double) and freehold row houses.
Where a building has multiple occupancies, the secondary suite can only be created in a portion of the building that is of residential occupancy. Apartment buildings have more than two dwelling units and are therefore not permitted to have secondary suites.

Neither dwelling unit in a house can be strata-titled or otherwise subdivided from the remainder of the house under provincial or territorial legislation. This means that both dwelling units are registered under the same title.

Secondary suites are also referred to as "accessory suites" or "secondary units".

e1 A-1.4.1.3. Applicable Law.

Applicants for building permits are required to establish compliance with applicable law. The following table lists contact information for those agencies responsible for the statutory provisions defined in Sentence 1.4.1.3.(1):

Applicable Law Provision	Responsible Agency	Contact
City of Toronto Act, 2006: Subsection 102(3) of the *City of Toronto Act, 2006* By-laws made under section 108 of the *City of Toronto Act, 2006* but only with respect to the issuance of a permit for the construction of a green roof. Section 114 of the *City of Toronto Act, 2006*, with respect to the approval by the City of Toronto or the Ontario Land Tribunal of plans and drawings.	City of Toronto	General Inquiry: ph: 311 or 416-392-2489

Applicable Law Provision	Responsible Agency	Contact
Clean Water Act, 2006: Clause 59(1)(b) of the *Clean Water Act, 2006* with respect to the issuance of a notice by the risk management official for the construction of a building.	Ministry of the Environment, Conservation and Parks	General Inquiry: ph: 416-325-4000 or 800-565-4923
Conservation Authorities Act: Clause 28(1)(c) under the *Conservation Authorities Act*, with respect to the permission of the authority for the construction of a building if the control of flooding, erosion, dynamic beaches or pollution may be affected by the development.	Local Conservation Authority	
Child Care and Early Years Act, 2014: Section 14 of Regulation 137/15, under the *Child Care and Early Years Act, 2014,* with respect to the approval of plans for a new building to be erected or an existing building to be used, altered or renovated for use as a child care centre or for alterations or renovations to be made to premises used by a child care centre.	Ministry of Children, Community and Social Services	General Inquiry: ph: 416-212-7432 Central East Regional Office ph: 905-868-8900 Central West Regional Office ph: 905-567-7177 or 877-832-2818 Eastern Regional Office ph: 613-234-1188 or 800-267-5111 Hamilton/Niagara Regional Office ph: 905-521-7280 North East Regional Office ph: 705-474-3540 or 800-461-6977 Northern Regional Office ph: 705-564-6699 or 800-265-1222 South East Regional Office ph: 613-545-0539 or 800-646-3209 South West Regional Office ph: 519-438-5111 or 800-265-4197 Toronto Regional Office ph: 416-325-0500
Development Charges Act, 1997: Sections 28 and 53 under the *Development Charges Act, 1997*.	Local Municipality	
Education Act: *Education Act*, Section 194, with respect to the approval of the Minister for the demolition of a building.	Ministry of Education	General Inquiry ph: 416-325-2929 or 800-387-5514
Education Act: Sections 257.83 and 257.93 under the *Education Act*.	Local Municipality	
Elderly Persons Centres Act: Section 6 of Regulation 314, of the *Elderly Persons Centres Act*, with respect to the approval of the Minister for the construction of a building project.	Ministry of Health and Long-Term Care	General Inquiry: ph: 416-327-4327 or 800-268-1153

Applicable Law Provision	Responsible Agency	Contact
Environmental Assessment Act: Section 5 of the *Environmental Assessment Act,* with respect to the approval of the Ministry or the Ontario Land Tribunal to proceed with an undertaking. Subsection 5(4) of the *Environmental Assessment Act*	Ministry of the Environment, Conservation and Parks	General Inquiry: ph: 416-325-4000 or 800-565-4923 Environmental Approvals Branch ph: 416-314-8001 or 800-461-6290
Environmental Protection Act: Section 46 of the *Environmental Protection Act* with respect to the approval of the Minister to use land or land covered by water that has been used for the disposal of waste. Section 47.3 of the *Environmental Protection Act*, with respect to the issuance of a renewable energy approval. Section 168.3.1 of the *Environmental Protection Act*, with respect to the construction of a building to be used in connection with a change of use of a property. Paragraph 2 of Subsection 168.6(1) of the *Environmental Protection Act*, if a certificate of property use has been issued in respect of the property under subsection 168.6(1) of the Act.	Ministry of the Environment, Conservation and Parks	General Inquiry: ph: 416-325-4000 or 800-565-4923 Central Region ph: 416-326-6700 or 800-810-8048 Eastern Region ph: 613-549-4000 or 800-267-0974 Northern Region ph: 807-475-1205 or 800-875-7772 Southwestern Region ph: 519-873-5000 or 800-265-7672 West Central Region ph: 905-521-7640 or 800-668-4557
Milk Act Section 14 of the *Milk Act*, with respect to the permit from the Director for the construction or alteration of any building intended for use as a plant.	Ministry of Agriculture, Food and Rural Affairs	General Inquiry ph: 519-826-3100 or 888-466-2372
Municipal Act, *2001* Subsection 133(4) of the *Municipal Act*, *2001.*	Local Municipality	
Niagara Escarpment Planning and Development Act: Subsection 24(3) of the *Niagara Escarpment Planning and Development Act.*	Ministry of Natural Resources and Forestry	General Inquiry ph: 800-667-1940 Niagara Escarpment Commission ph: 905-877-5191
Nutrient Management Act, 2002: Section 11.1 of O. Reg. 267/03 of the *Nutrient Management Act, 2002*, with respect to a proposed building or structure to house farm animals or store nutrients if that Regulation requires the preparation and approval of a nutrient management strategy before construction of the proposed building or structure.	Ministry of Agriculture, Food and Rural Affairs	General Inquiry ph: 519-826-3100 or 888-466-2372

Applicable Law Provision	Responsible Agency	Contact
Ontario Heritage Act: Subsection 27(9) of the *Ontario Heritage Act*, with respect to a notice to the council of a municipality to the demolition or removal of a building from a registered property. Subsection 30(2) of the *Ontario Heritage Act*, with respect to a consent of the council of a municipality to the alteration or demolition of a building. Section 33 of the *Ontario Heritage Act*, with respect to the consent of the council of a municipality for the alteration of a property. Section 34 of the *Ontario Heritage Act*, with respect to the consent of the council of a municipality for the demolition of a building. By-laws made under Section 40.1 of the *Ontario Heritage Act* Section 42 of the *Ontario Heritage Act*, with respect to the permit given by the council of a municipality for the erection, alteration, or demolition of a building.	Local Municipality	
Ontario Heritage Act: Section 34.5 of the *Ontario Heritage Act,* with respect to a consent of the Minister to the alteration or demolition of a designated building Subsection 34.7(2) of the *Ontario Heritage Act*, with respect to a consent of the Minister to the alteration or demolition of a designated building	Ministry of Tourism, Culture and Sport	General Inquiry: ph: 416-326-9326
Ontario Planning and Development Act, 1994, Section 14 *Ontario Planning and Development Act, 1994*, with respect to any conflict between a development plan made under that Act and a zoning by-law that affects the proposed building or structure. Subsection 17(1) *Ontario Planning and Development Act, 1994* with respect to orders made under that Act.	Ministry of Municipal Affairs and Housing	General Inquiry: ph: 416-585-7041 Central Municipal Services Office ph: 416-585-6226 or 800-668-0230 Eastern Municipal Services Office ph: 613-545-2100 or 800-267-9438 Northeastern Municipal Services Office ph: 705-564-0120 or 800-461-1193 Northwestern Municipal Services Office ph: 807-475-1651 or 800-465-5027 Southwestern Municipal Services Office ph: 519-873-4020 or 800-265-4736

Applicable Law Provision	Responsible Agency	Contact
Planning Act: Section 33 of the *Planning Act*, except where in the case of demolition of a residential property, a permit to demolish the property is obtained under that Section By-laws made under Sections 34 or 38 of the *Planning Act*. Section 41 of the *Planning Act*, with respect to the approval by the council of the municipality of the Municipal Board of plans and drawings. Section 42 of the *Planning Act*, with respect to the payment of money to the Municipality. Section 46 of the *Planning Act*. By-laws made under O. Reg. 608/06 (Development Permits) made under the *Planning Act*. By-laws made under O. Reg. 246/01 (Development Permits) made under the *Planning Act*.	Local Municipality	
Planning Act: Section 47 of the *Planning Act,* with respect to orders made under that Act.	Ministry of Municipal Affairs and Housing	General Inquiry: ph: 416-585-7041 Central Municipal Services Office ph: 416-585-6226 or 800-668-0230 Eastern Municipal Services Office ph: 613-545-2100 or 800-267-9438 Northeastern Municipal Services Office ph: 705-564-0120 or 800-461-1193 Northwestern Municipal Services Office ph: 807-475-1651 or 800-465-5027 Southwestern Municipal Services Office ph: 519-873-4020 or 800-265-4736
Public Lands Act: Section 2 of O. Reg. 453/96 of the *Public Lands Act*, with respect to the work permit from the Minister authorizing the construction or placement of a building on public land.	Ministry of Natural Resources and Forestry	General Inquiry ph: 800-667-1940
Public Transportation and Highway Improvement Act: Section 34 or 38 of the *Public Transportation and Highway Improvement Act*, with respect to the permit from the Minister for the placement, erection or alteration of any building or other structure or the use of land.	Ministry of Transportation	General Inquiry ph: 800-268-4686 Central Region: ph: 416-235-5412 Eastern Region: ph: 800-267-0295 Northeastern Region: ph: 705-472-7900 or 800-461-9547 Northwestern Region: ph: 807-473-2000 or 800-465-5034 Southwestern Region: ph: 519-873-4335 or 800-265-6072

The reference to Article 3.2.2.16. means that heavy timber construction is permitted to be used for the roof assembly (and its supports) in buildings of encapsulated mass timber construction that are sprinklered and not more than 2 storeys in building height. It follows that the minimum dimensions stated in Table 3.1.4.7. would apply to those elements rather than the ones stated in Table 3.1.6.3. Furthermore, the roof elements and supports made of heavy timber construction do not need to conform to the encapsulation requirements of Article 3.1.6.4., nor are they limited by the flame-spread rating or maximum thickness or cut-through requirements of Article 3.1.6.14.

a1 A-3.1.6.4.(1) Encapsulation of Mass Timber Elements.

The general intent of Sentence 3.1.6.4.(1), which generally applies for any building where a 50- or 70-minute encapsulation rating is otherwise required, is that all exposed surfaces of the mass timber elements be encapsulated, including the upper surface of a mass timber floor assembly. However, for some buildings, depending on the building height and occupancy, portions of mass timber elements are permitted to be exposed to varying degrees in accordance with the permissions stated in Sentences 3.1.6.4.(3) to (8). Also, the exposed surfaces in certain concealed spaces formed by or contained within mass timber elements are exempted from complying with this Sentence (see Sentences 3.1.6.3.(4), 3.1.6.16.(2) and 3.1.6.17.(2), and Articles 3.1.6.7. and 3.1.6.12.). Moreover, the upper surface of a mass timber roof assembly need not be encapsulated where there is no concealed space above it. As well, the exterior side of a mass timber exterior wall assembly need not be encapsulated; however, the provisions of Article 3.1.6.9. and Subsection 3.2.3. for exterior walls still need to be considered.

a1 A-3.1.6.4.(3) to (8) Fire-Resistance Rating of Mass Timber with Exposed Surfaces.

Portions of mass timber elements required to have a fire-resistance rating are permitted to be exposed in accordance with the permissions stated in Sentences 3.1.6.4.(3) to (8); however, it is important to note that applying those permissions does not waive the requirement for these elements to have a fire-resistance rating.

In the calculation of the total wall area of the perimeter of a suite or fire compartment in Sentences 3.1.6.4.(3), (5) and (7), the area of any wall openings, such as doors or windows, is included.

a1 A-3.1.6.4.(4) Exposed Surfaces of Mass Timber Walls.

The primary objective of encapsulating mass timber elements is to limit the probability that these elements will significantly contribute to fire spread and fire duration in the event of a fire. Since thick wood members require a source of imposed heat flux to burn, Clause 3.1.6.4.(4)(a) stipulates that any portions of the exposed surfaces of different mass timber walls within the suite either face the same direction or have a minimum horizontal distance between one other. If the sprinkler system fails to operate or to control the fire, this directional orientation or minimum distance is intended to avoid or reduce the potential for re-radiation between portions of burning mass timber surfaces on different walls, and particularly those that either face or are in close proximity to one another, which could sustain flaming combustion into the decay phase of a fire. Additionally, if the sprinkler system failed to operate or to control the fire, the maximum percentage of exposed surface area stated in Article 3.1.6.4. are intended to be insufficient to sustain a ventilation-controlled fire that might provide the radiation required to sustain flaming combustion into the decay phase of a fire.

a1 A-3.1.6.6. Encapsulation Materials.

Research has been conducted on different types of encapsulation materials, such as gypsum board, gypsum concrete and cement board. The results of tests using an intermediate-scale furnace and of cone calorimeter tests indicate that a combustible timber element protected with a 38 mm thick layer of gypsum-concrete topping or with one (25 min), two (50 min) or three (70 min) layers of 12.7 mm Type X gypsum board or two layers (70 min) of 15.9 mm Type X gypsum board, will not ignite or contribute significant heat to a fire until the time at which until average temperatures of 325°C to 380°C are attained at the interface between the encapsulation material or assembly of materials and the combustible substrate. These temperatures are consistent with the ignition temperatures of wood-based materials.

e1 A-3.1.6.6.(6) Protection of Gypsum Board from Foot Traffic.

Where gypsum board is used as the encapsulation material on the top of a mass timber floor assembly, it should be protected from physical impact arising from normal pedestrian traffic that could damage it and possibly compromise its encapsulation rating.

a1 A-3.1.6.9.(1), (2), (4) and (5) Exterior Cladding.

The requirements in Sentences 3.1.6.9.(1), (2), (4) and (5) are intended to reduce the potential for fire spread on the exterior cladding of buildings of encapsulated mass timber construction through the use of noncombustible finishes on the exterior of

the wall assembly or the use of a cladding/wall assembly that has been proven to resist flame propagation as a function of increasing building height, including provisions to allow 100% combustible cladding where the height does not exceed 4 storeys. These cladding/wall assembly combinations can be used as infill or panel-type walls between structural elements, or attached directly to a loadbearing structural system. Note that the requirements in Article 3.1.6.9. do not supersede the provisions in Subsection 3.2.3. regarding spatial separation and exposure protection.

A-3.1.8.1.(1)(b) Barrier to Control Smoke Spread.

Although a fire separation is not always required to have a fire-resistance rating, the fire separation should act as a barrier to the spread of smoke and fire until some response is initiated.

When choosing products for the fire stopping, the physical characteristics of the material used at the joints as well as the nature of the assembly and its potential movement should be taken into consideration.

If the fire-resistance rating of a fire separation is waived on the basis of the presence of an automatic sprinkler system, it is intended that the fire separation will be constructed so that it will remain in place and act as a barrier against the spread of smoke for a period of time until the sprinklers have actuated and controlled the fire.

A-3.1.8.1.(2) Installation of Closures.

Although there is no explicit performance statement in the Code that means of egress should be free of smoke, it is the intent that during the period when occupants are using a means of egress to evacuate from a floor area, the smoke contamination should not reach levels that would inhibit movement to the exit. This is particularly critical for persons with disabilities, who may not move at the same rate as other persons and who could be more susceptible to the effects of smoke contamination. NFPA 80, "Standard for Fire Doors and Other Opening Protectives", requires that a fire door protecting a means of egress be designed to minimize the possibility of smoke passing through the opening.

Although self-closing devices are not required for all doors in a fire separation (see Article 3.1.8.11.), it is assumed that in a fire situation every door in a fire separation is closed. Article 3.3.3.5. prohibits grilles and similar openings for certain fire separations in hospitals and long-term care homes.

Although fire dampers that release on the fusion of a fusible link will help to control the spread of fire, a substantial quantity of smoke could have passed through the opening before that event. They are frequently located below the upper levels of a room and so the release of the fusible link of the fire damper that protects an opening will be delayed until the temperature at the level of the opening becomes high enough to fuse the link.

Similar concern has to be considered for other closure devices that are permitted to remain open on fusible links, and their location should be restricted in accordance with NFPA 80, "Standard for Fire Doors and Other Opening Protectives", and this Code, except where their installation in another location will not allow the products of combustion to spread into means of egress.

A-3.1.8.3.(2) Fire Separation Continuity.

The continuity of a fire separation with a fire-resistance rating is maintained by installing a firestop system at the juncture where it abuts against another fire separation, a floor, a ceiling or a roof assembly. The continuity of a fire separation without a fire-resistance rating that abuts another fire separation is maintained by filling all gaps at the juncture of the assemblies with a fire-resistance-rated joint firestop system that will ensure the integrity of the fire separation at that location.

Test methods for the evaluation of joint systems are described in CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems," which covers joint systems between adjacent fire-resistance-rated assemblies and between a fire-resistance-rated floor and a non-fire-resistance-rated exterior wall. ASTM E2307, "Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-storey Test Apparatus," is a test method applicable to joint systems between a fire-resistance-rated floor and a non-fire-resistance-rated exterior wall.

Fire-resistance-rated joint firestop systems can be tested and listed as either static or dynamic. Dynamic joint firestop systems are subjected to movement cycling prior to undergoing fire testing at maximum joint extension. This approach ensures that the fire-resistance rating of the joint firestop system will be maintained even after the joint has cycled through its anticipated range of movement over the service life of the building. Most joints between fire-resistance-rated assemblies, other than those between loadbearing elements, experience some movement over the service life of the building.

A-3.1.8.3.(5) Joints.
Firestops need not be installed between joints of interior finish materials that are arranged so as to create a smoke-tight joint.

A-3.1.8.10.(1) Combination Smoke/Fire Dampers.
A combination smoke/fire damper may be used in lieu of a fire damper to meet the requirement of Sentence 3.1.8.10.(1).

A-3.1.8.10.(5) Damper Access.
It is intended that an access door be provided in the duct and, if the duct is enclosed with an architectural finish, that a second access door be provided through that finish.

A-3.1.8.18.(1) Wired Glass and Glass Block.
The permission to include wired glass and glass block in doors and fire separations between an exit and the adjacent floor area does not permit the inclusion of those items in fire separations between exits and other parts of the building that are not included in the floor area. Examples include other exit facilities and vertical service spaces, including those used for building services and elevator hoistways.

A-3.1.8.19.(1) Fire-Protection Rating for Doors.
The provisions in Articles 3.1.8.17. to 3.1.8.19. do not waive a requirement for a door to have a fire-protection rating. To achieve this rating in a door test, it may be necessary to limit the area of glass in the door. If this area is less than the area limits of Article 3.1.8.18., it is the governing criterion. Conversely, if the area limits of Article 3.1.8.18. are less than the area required to achieve a fire-protection rating, then the area limits of this Article govern.

A-3.1.9. Penetrations.
In the application of Subsection 3.1.9., a building service or structural element is considered to penetrate an assembly if it passes into or through the assembly. In some situations, a service item enters an assembly through a membrane at one location, runs within the assembly, and then leaves the assembly through a membrane at another location.

The term “membrane penetration” usually designates an opening made through one side (wall, floor or ceiling membrane) of an assembly, whereas the term “through-penetration” designates an opening that passes through an entire assembly. Fire stopping of membrane penetrations and through-penetrations involves installing an assemblage of specific materials or products that are designed, tested and fire-resistance-rated to resist, for a prescribed period of time, the spread of fire through the penetrations.

Products for fire stopping within a barrier are required to address movement of the assembly and to control smoke spread; as such, the flexibility of the material used at the flexible joints as well as the nature of the assembly and its potential movement must be taken into consideration.

A-3.1.9.1.(1)(b) Penetrations.
The intention behind the use of the term “cast in place” is to reinforce that there are to be no gaps between the building service or other penetrating item and the membrane or assembly it penetrates. The term “cast in place” describes a typical means of fire stopping for a service penetration through a concrete slab or wall.

A-3.1.9.2.(1) Service Equipment Penetrations.
The provisions dealing with outlet boxes assume size, quantities and concentrations of partial depth penetrations that would not significantly affect the fire resistance of the assembly, including the temperature rise on the unexposed side of a wall. Sentence 3.1.9.2.(1) is not intended to allow large electrical distribution and control boxes to be recessed into an assembly required to have a fire-resistance rating unless they are firestopped as described in Sentence 3.1.9.3.(1).
The installation of fire dampers, smoke dampers or combination smoke/fire dampers is intended to comply with Subsection 3.1.8. and Sentence 3.1.9.1.(5), and the conditions of their listing and labeling, which may or may not permit the installation of firestopping around the duct.

A-3.1.9.3. Outlet Boxes.
For the purposes of Article 3.1.9.3., outlet boxes include, but are not limited to, electrical boxes, junction boxes, high and low voltage outlets, switches, enclosures for electrical equipment, laundry boxes, and shower diverters.

A-3.1.9.4.(8) Combustible Branches.

Combustible branches for drain, waste and vent piping are permitted to be used to connect to a plumbing fixture within a fire compartment. The integrity of the fire separation is maintained through the use of a firestop system where the vertical stack piping penetrates the fire separation.

A-3.1.10.2.(4) Firewall Construction.

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

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

A-3.1.11.3.(3) Fire Blocks Between Nailing and Supporting Elements.

Sentence 3.1.11.3.(3) applies to the portion of the combustible ceiling finish that is attached using nailing elements and constructed in accordance with Sentence 3.1.6.14.(3), which permits 10% of the ceiling finish within a fire compartment to have a flame-spread rating not more than 150. Where this portion of ceiling finish creates a concealed space above it, exposed combustible elements within that space require fire blocks to limit the spread of fire.

A-3.1.11.5.(1) Fire Blocks in Combustible Construction.

Combustible construction referred to in Sentence 3.1.11.5.(1) includes all types of construction that do not comply with the requirements for noncombustible construction or encapsulated mass timber construction. All of the elements within the concealed space can be combustible, unless required to be of noncombustible materials (e.g., certain categories of pipework and ducts), but the value of the flame-spread rating of the combustible materials determines the permitted extent of the concealed space between fire blocks. The materials to be considered should include all construction materials regulated by this Code, including the framing and building services that are located in the concealed space. When designing fire blocking, consideration should be given to avoid restricting venting capabilities within concealed spaces. (See also Note A-5.6.2.1.)

A-3.1.11.5.(3) and (4) Fire Blocks in Concealed Spaces.

To reduce the risk of fire spread in combustible concealed spaces within the types of buildings referred to in Sentences 3.1.11.5.(3) and (4), fire blocking is required regardless of whether the horizontal concealed space is protected by sprinklers or not, unless the space is filled with noncombustible insulation so that any air gap at the top of the insulation is very small. (See also Note A-3.1.11.5.(1) for roof venting.)

e1 A 5- or 6-storey building constructed in accordance with Article 3.2.2.51. and buildings constructed in accordance with Articles 3.2.2.48., 3.2.2.57., 3.2.2.60. or 3.2.2.93. are required to be sprinklered in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems" (see Article 3.2.5.12.). NFPA 13 generally requires sprinklering of any concealed spaces of combustible construction or where large amounts of combustibles are present. However, NFPA 13 allows combustible concealed spaces not to be sprinklered in certain cases, including where concealed spaces are filled almost entirely with noncombustible insulation, where spaces contain only materials with a low flame-spread rating, and where limited access or the size of the space makes it impractical to install sprinklers. For certain types of construction in combustible concealed spaces that are not sprinklered, NFPA 13 mandates fire blocking beyond the minimum specified in Sentence 3.1.11.5.(3).

A-3.1.11.7.(7) Integrity of Fire Blocks.

Sentence 3.1.11.7.(7) together with Article 3.1.9.1., is intended to ensure that the integrity of fire blocks in maintained at areas where they are penetrated. This requirement is satisfied by the use of generic fire stops such as mineral wool, gypsum plaster or Portland cement mortar, or by the use of sealants that form part of a firestop tested in accordance with CAN/ULC-S115, "Standard Method of Fire Tests of Firestop Systems."

A-3.1.11.7.(8) Fire Blocks.

Figure A-3.1.11.7.(8) shows the location of the semi-rigid fibre insulation board at the intersection between walls and floors in wood-frame construction. The figure is intended to illustrate the fire block detail and not a design of a fire separation.

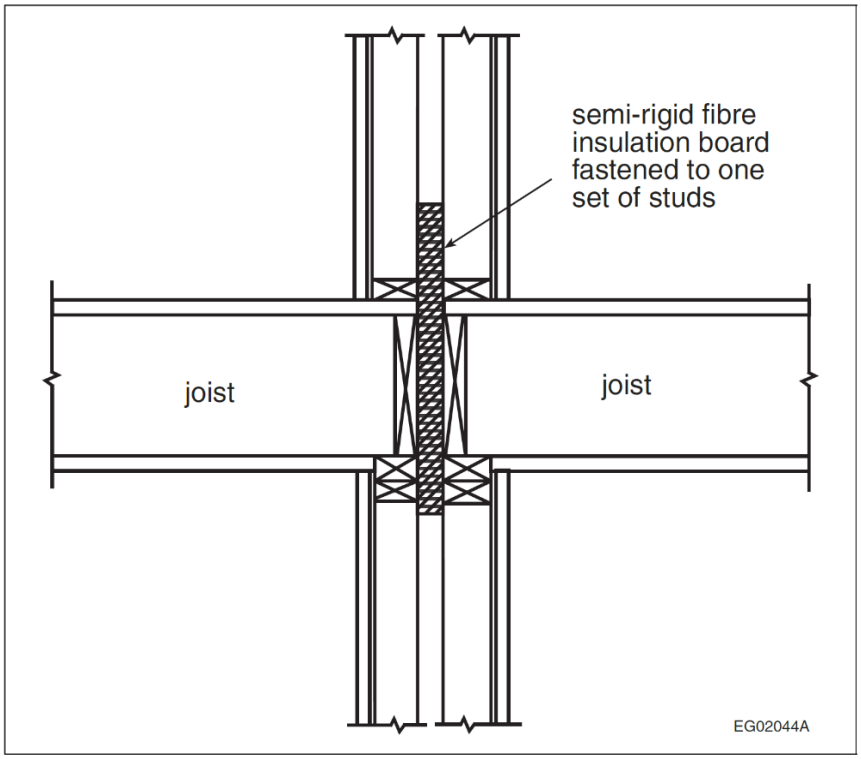

Figure A-3.1.11.7.(8)
Fire Block

A-3.1.13.2.(2) Folding Partition.

Folding partitions used to divide a space into separate rooms are not considered as doors for the purposes of this Sentence.

A-3.1.15.1.(1) Roof Covering.

The tests described in CAN/ULC-S107 are intended to measure the relative fire-performance of roof coverings when exposed to a fire originating from sources outside the building. When metal deck or a similar noncombustible rigid roof surface is directly exposed to the exterior (a covering material on its exterior surface has not been provided), the requirements of this Sentence need not apply.

A-3.2.1.1.(3)(a) Mezzanine Area.

The permitted area of the mezzanine for the purposes of determining the allowable percentage is to be based on the open area of the floor of the space in which the mezzanine is located. The Code does not restrict the enclosing of space below the mezzanine, but the enclosed area must be deducted from the area of the overall space before applying the percentage allowance.

A-3.2.1.1.(8) Accessible Service Space.

These service spaces are often referred to as interstitial spaces and are designed to allow service personnel to enter and undertake maintenance or installation within the space. Catwalks or flooring are usually included to provide a walking or access surface. Even when flooring is included, it is not intended that the interstitial space should be considered as a storey for the purposes of the Code unless the space is used for purposes other than servicing or the storage of materials and equipment to be used for building services within that space.

A-3.2.2.2.(1) Special and Unusual Structures.

Examples of structures which cannot be identified with the descriptions of buildings in Articles 3.2.2.20. to 3.2.2.92. include grain elevators, refineries and towers. Publications that may be consulted to establish good engineering practice for the purposes of Article 3.2.2.2. include the NFPA Fire Protection Handbook, Factory Mutual Data Sheets, and publications of the Society for Fire Protection Engineering.

A-3.2.2.17.(1) Roof Assemblies in Gymnasiums, Swimming Pools, Arenas and Rinks.

The permission to waive the fire-resistance rating requirements for roof assemblies over gymnasiums, swimming pools, arenas and rinks that meet the conditions of Sentence 3.2.2.17.(1) includes the permission to waive the requirements relating to minimum size and construction details stated in Article 3.1.4.7. for wood elements in roof assemblies of heavy timber construction on buildings conforming to Articles 3.2.2.25. and 3.2.2.32. However, wood elements in roof assemblies of heavy timber construction on buildings conforming to Article 3.2.2.30. must nevertheless meet the requirements of Article 3.1.4.7.

A-3.2.2.18.(2) Sprinkler Extent.

A literal interpretation of Article 3.2.2.6. and Sentences 3.2.2.4.(1) and (2) could require installation of an automatic sprinkler system throughout all storeys of a building regardless of options in Articles 3.2.2.20. to 3.2.2.92. to construct one or more storeys without installation of sprinklers. It is the intent of the Code that all storeys below a storey in which an automatic sprinkler system is installed should also be protected by an automatic sprinkler system to ensure that a fire in a lower storey does not incapacitate the automatic sprinkler system or overwhelm an automatic sprinkler system in an upper storey. Persons in an upper storey in which waivers or reductions of other fire safety systems are permitted would be exposed to an increased risk from a fire on a lower storey. This concept also applies to situations in which an automatic sprinkler system has been installed within a floor area in order to modify other safety requirements applying within the floor area. If the uppermost storey or storeys of a building can be constructed without the installation of an automatic sprinkler system it is not necessary that an automatic sprinkler system required in a lower storey be extended into the upper storey or storeys.

A-3.2.2.35.(4) Sprinkler Requirements.

Spaces in a building of Group A, Division 4 occupancy that are intended to be equipped with sprinklers include, but are not limited to, dressing and changing rooms, concession stands and areas, toilet rooms, locker rooms, storage areas, service rooms, offices and other spaces that provide service to the building. The enclosure of seating areas with glazing needs special consideration in determining the requirements for sprinklers. For example, if the enclosed area is used for the consumption of food and beverages, it should be classified as Group A, Division 2 and the appropriate requirements of that classification applied. Enclosure of limited spaces above seating areas
for press and media purposes is not considered to require the installation of sprinklers.

a1 A-3.2.2.48.(4), 3.2.2.57.(3) and 3.2.2.93.(5) to (7) Occupancy Combinations in Buildings of Mixed Construction.

Buildings conforming to the building height and area limits and the other fire protection requirements of Article 3.2.2.48., 3.2.2.57. or 3.2.2.93. may be entirely constructed of encapsulated mass timber construction and incorporate the occupancies specifically permitted by Sentence 3.2.2.48.(4), 3.2.2.57.(3) or 3.2.2.93.(5) to (7): e.g., Group A, Division 2 major occupancies on the first to third storeys, Group E major occupancies on the first and second storeys, and a parking garage on the first to fourth storeys.

Alternatively, the requirements of Articles 3.2.2.4. to 3.2.2.8. for superimposed major occupancies can be applied, resulting in buildings of mixed construction conforming to the building height and area limits for encapsulated mass timber construction and in which the lower storeys are of noncombustible construction and the upper storeys are of encapsulated

mass timber construction. For example, a Group A, Division 2 or Group B, Division 3 major occupancy could be located on the first 4 storeys of a 12-storey Group C building constructed in accordance with Article 3.2.2.48., as long as these first 4 storeys were constructed of noncombustible construction in accordance with Article 3.2.2.23. or 3.2.2.38., as applicable. (See also Articles 3.2.2.6. and 3.2.2.7.)

A-3.2.2.51.(5) and 3.2.2.60.(4) Occupancy Combinations in Buildings of Mixed Construction.

Buildings conforming to the building height and area limits and the other fire protection requirements of Article 3.2.2.51. or 3.2.2.60. may be entirely constructed of combustible construction and incorporate the occupancies specifically permitted by Sentence 3.2.2.51.(5) or 3.2.2.60.(4): e.g., Group A, Division 2 and Group E major occupancies on the first and second storeys, and a parking garage on the first to third storeys.

Alternatively, the requirements of Articles 3.2.2.4. to 3.2.2.8. for superimposed major occupancies can be applied, resulting in buildings of mixed construction conforming to the building height and area limits of Article 3.2.2.51. or 3.2.2.60. and in which the lower storeys are of noncombustible construction and the upper storeys are of combustible construction. For example, a Group A, Division 2 or Group B, Division 3 major occupancy could be located on the first 4 storeys of a 6-storey Group C building constructed in accordance with Article 3.2.2.51., as long as these first 4 storeys were constructed of noncombustible construction in accordance with Article 3.2.2.23. or 3.2.2.38., as applicable. (See also Articles 3.2.2.6. and 3.2.2.7.)

a1 A-3.2.2.93.(1) and Table 3.2.2.93. Occupancy Combinations in Buildings of Mixed Encapsulation Ratings.

Buildings conforming to the building height and minimum encapsulation rating requirements and the other fire protection requirements of Article 3.2.2.93. may be entirely constructed of encapsulated mass timber construction and incorporate the multiple major occupancies otherwise permitted by Articles 3.2.2.4. to 3.2.2.6. This would also include permitting mixing of major occupancies that require different levels of encapsulation for structural mass timber elements in accordance with Table 3.2.2.93.

A-3.2.3. Fire Protection Related to Limiting Distance Versus Separation Between Buildings.

Building Code provisions that address protection against fire spread from building to building use the limiting distance (see definition in Article 1.4.1.2. of Division A) for a building rather than using the distance between adjacent buildings on separate properties, since this would result in situations where the design and construction of a building on one property affects the design and construction of a building on an adjacent property.

The Code requirements that deal with reducing the probability of building-to-building fire spread were originally developed based on the assumption that the exposing building faces of adjacent buildings are of similar size and configuration, and are equidistant from the shared property line. Where buildings are of different sizes, the smaller building may be subject to a higher heat flux in the event of a fire compared to the larger building. Where buildings are closely spaced and not equidistant from the property line, the construction of the building with the greater limiting distance does not recognize the proximity of the building with the lesser limiting distance.

The Building Code has more stringent requirements for buildings having lesser limiting distance with regards to the maximum area and spacing of unprotected openings, and the construction, cladding and fire resistance of walls. This increased stringency recognizes that the fire hazard is greater where the buildings are close together and that adjacent buildings may have exposing building faces of different sizes, configurations or limiting distances, which could further increase the hazard.

The authority having jurisdiction may also address limiting distances through legal agreements with the parties involved that stipulate that the limiting distance be measured to a line that is not the property line. Such agreements would normally be registered with the titles of both properties.

A-3.2.3.1.(4) Spatial Separation Design.

In the application of Sentences 3.2.3.1.(3) and (4), it is intended that Sentence (3) be used first to establish the basic requirements for the exterior wall in terms of fire-resistance rating, type of construction and type of cladding. The percentage of unprotected openings determined from the application of Sentence (3) would be unnecessarily restrictive if the actual unprotected openings occur in a plane that is set back from the front of the building face.

Sentence (4) applies to the calculation of the allowable percentage of unprotected openings based upon projection onto a plane that is in front of all unprotected openings. The application of these two Sentences is shown in Figure A-3.2.3.1.(4). The modifications permitted by Article 3.2.3.12. would be applied, if applicable, to the area of unprotected openings derived from Sentence (4).

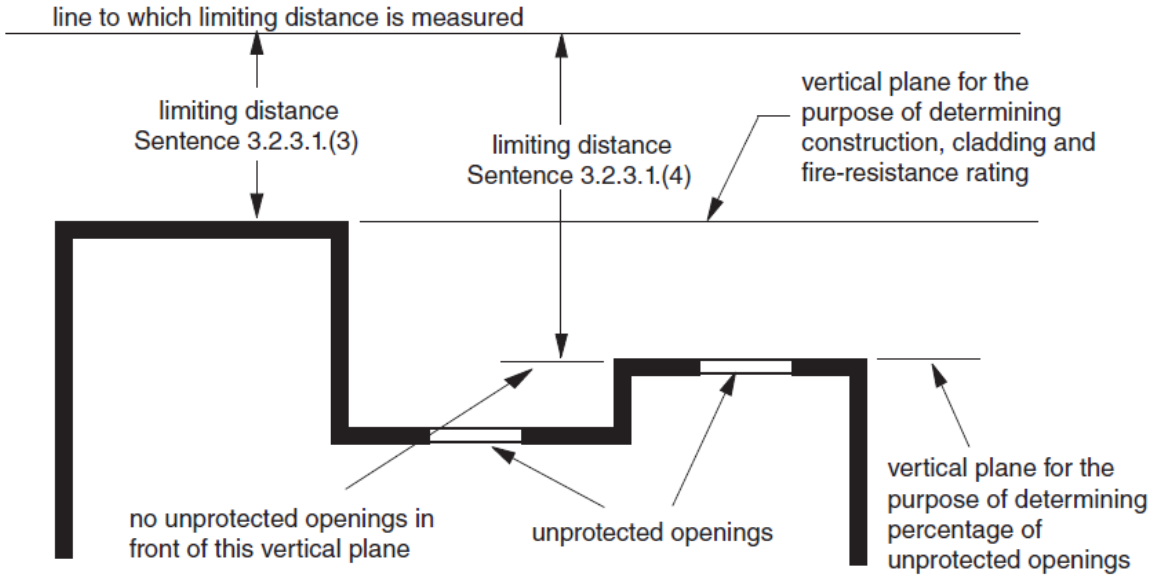

Figure A-3.2.3.1.(4)
Spatial Separation Design

A-3.2.3.6.(2) Protection of Roof Soffits Near Property Lines.

Sentences 3.2.3.6.(2) to (5) provide requirements for the protection of soffits where the soffit of the subject building is located close to the property line or to an imaginary line between two buildings on the same property. Fire from inside the roof space of the subject building can exit unprotected soffits and expose the adjacent building to flames.

A-3.2.3.7.(4)(d)(iv) Thickness of Cladding.

In the case of insulated vinyl siding, the maximum 2 mm thickness stated in Subclause 3.2.3.7.(4)(d)(iv) refers to the total thickness of the siding and the insulation, not of the siding alone.

A-3.2.3.12.(1) Increased Openings Permitted.

No increase of the maximum area of unprotected openings in an exposing building face should be applied until the requirements of Article 3.2.3.7. have been satisfied in determining the construction of the exposing building face.

A-3.2.3.14. Wall Exposed to Another Wall.

The intent of this Article is to ensure that the control of fire spread by the interior fire separations between adjacent fire compartments is not defeated through the spread of fire by thermal radiation outside the building. Minimum separations (D_o) are specified between unprotected openings in separate fire compartments of the building where the exterior faces of these compartments are deemed to expose each other to a thermal radiation hazard. This situation may arise where the angle, θ, between the intersecting planes of the exposing building faces is less than 135° and both of these faces have unprotected openings. The exterior walls of the fire compartments do not have to intersect in order to apply Article 3.2.3.14. Rather, the critical factor is the angle, θ, between the planes formed by the exterior walls. Examples are shown in Figures A-3.2.3.14.-A, A-3.2.3.14.-B and A-3.2.3.14.-C of situations which would be addressed by this Article.

A-9.1.1.9. Factory-Built Buildings.

e1 Manufactured buildings must comply with all appropriate Code requirements. Only those building components that are designed and constructed in manufacturing plants in accordance with the specified standards (CSA Z240.2.1 and CSA A277) are deemed to comply with the Code. Building components designed and constructed outside the place of manufacture (e.g. masonry chimneys, basement stairs, foundations, etc.) must conform to the requirements of the Code. The Code also applies to the site installation of manufactured buildings in terms of tie-down, spatial separation, grading, plumbing connections to street services, etc.

CSA standard CSA A277, "Procedure for certification of prefabricated buildings, modules, and panels", describes a procedure whereby an independent certification agency can review the quality control procedures of a housing factory and make periodic, unannounced inspections of its products and thus, through suitable labelling, provide assurance to authorities at the final site that the components that cannot be inspected on site comply with the code indicated on the label. It is not a building code, only a procedure for certifying compliance of factory-built components with a building code or other standard. If a factory-built house bears the label of a creditable certification agency indicating that compliance with the National Building Code has been certified using the A277 procedure, the accepting authority will have some assurance that the hidden components do not need to be inspected again on site.

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 reduced strength, greater porosity, and more propensity to shrinkage cracking. The ratio of water to cementing material is determined according to weight. For example, using Table 9.3.1.7., the maximum water-cement ratio of 0.45 for a 20 mm coarse aggregate would require 18 kg (or 18 L) of water (1 L of water weighs 1 kg).

A-9.3.2.1.(1) Grade Marking of Lumber.

Lumber is generally grouped for marketing into the species combinations contained in Table A-9.3.2.1.(1)-A. The maximum allowable spans for those combinations are listed in the span tables for joists, rafters and beams. Some species of lumber are also marketed individually. Since the allowable span for the northern species combination is based on the weakest species in the combination, the use of the span for this combination is permitted for any individual species not included in the Spruce-Pine-Fir, Douglas Fir-Larch and Hemlock-Fir combinations.

Facsimiles of typical grade marks of lumber associations and grading agencies accredited by the Canadian Lumber Standards (CLS) Accreditation Board to grade mark lumber in Canada are shown in Table A-9.3.2.1.(1)-B. Accreditation by the CLS Accreditation Board applies to the inspection, grading and grade marking of lumber, including mill supervisory service, in accordance with CSA O141, "Softwood Lumber". The grade mark of a CLS accredited agency on a piece of lumber indicates its assigned grade, species or species combination, moisture condition at the time of surfacing, the responsible grader or mill of origin and the CLS accredited agency under whose supervision the grading and marking was done.

Table A-9.3.2.1.(1)-A
Species Designations and Abbreviations

Commercial Designation of Species or Species Combination	Abbreviation Permitted on Grade Stamps	Species Included
Douglas Fir — Larch	D Fir — L (N)	Douglas Fir, Western Larch
Hemlock — Fir	Hem — Fir (N)	Western Hemlock, Amabilis Fir
Spruce — Pine — Fir	S — P — F or Spruce — Pine — Fir	White Spruce, Engelmann Spruce, Black Spruce, Red Spruce, Lodgepole Pine, Jack Pine, Alpine Fir, Balsam Fir
Northern Species	North Species	Any Canadian softwood covered by the NLGA Standard Grading Rules

Canadian lumber is graded to the NLGA Standard Grading Rules for Canadian Lumber, published by the National Lumber Grades Authority. The NLGA rules specify standard grade names and grade name abbreviations for use in grade marks to provide positive identification of lumber grades. In a similar fashion, standard species names or standard species abbreviations, symbols or marks are provided in the rules for use in grade marks.

Grade marks denote the moisture content of lumber at the time of surfacing. "S-Dry" in the mark indicates the lumber was surfaced at a moisture content not exceeding 19%. "MC 15" indicates a moisture content not exceeding 15%. "S-GRN" in the grade mark signifies that the lumber was surfaced at a moisture content higher than 19% at a size to allow for natural shrinkage during seasoning.

Each mill or grader is assigned a permanent number. The point of origin of lumber is identified in the grade mark by use of a mill or grader number or by the mill name or abbreviation. The CLS certified agency under whose supervision the lumber was grade marked is identified in the mark by the registered symbol of the agency.

In some assemblies, an airtight element in the air barrier system is the interior finish, such as gypsum board, which is sealed to framing members and adjacent components by gaskets, caulking, tape or other methods to complete the air barrier system. In such cases, special care in sealing joints in a separate vapour barrier is not critical. This approach often uses no separate vapour barrier but relies on appropriate paint coatings to give the interior finish sufficient resistance to water vapour diffusion that it can provide the required vapour diffusion protection.

Section 9.25. allows for such innovative techniques, as well as the more traditional approach of using a continuous sheet, such as polyethylene, to act as an "air/vapour barrier".

Further information is available in "Moisture Problems in Houses", by A.T. Hansen, Canadian Building Digest 231, available from the Institute for Research in Construction, National Research Council of Canada, Ottawa K1A 0R6.

a1 9.25.3.3.(9) Reserved.

A-9.25.4.2.(2) Vapour Barrier Materials in Foundation Wall Assemblies Enclosing Basements or Heated Crawl Spaces.

In the summer, solar heating can cause condensation to form on the wall-facing side of polyethylene membranes that are installed on the warm side of foundation wall assemblies enclosing a basement or heated crawl space. Moisture in the foundation wall due to wind-driven rain is driven to the interior when the above-ground portion of the wall is exposed to solar heating. Variable-permeance vapour barrier materials allow moisture to dissipate into the basement or heated crawl space during the summer and have thus been shown to minimize the formation of condensation in foundation wall assemblies. These materials have proven effective whether installed continuously over the full area of the foundation wall or continuously over not less than the top half of the full height of the wall area, starting from the above-ground portion, with a polyethylene membrane installed over the remaining bottom portion.

Sentence 9.25.4.2.(2) is not intended to preclude the use of variable-permeance vapour barriers in above-grade wall assemblies. However, when contemplating their use in such an application, consideration should be given to the climatic conditions at the building's location.

A-9.25.4.2.(3) Normal Conditions.

The requirement for a 60 ng/(Pa·s·m^2) vapour barrier stated in Sentence 9.25.4.2.(1) is based on the assumption that the building assembly is subjected to conditions that are considered normal for typical residential occupancies, and business and personal services occupancies. However, where the intended use of an occupancy includes facilities or activities that will generate a substantial amount of moisture indoors during the heating season, such as swimming pools, greenhouses, laundromats, and any continuous operation of hot tubs and saunas, the building envelope assemblies would have to demonstrate acceptable performance levels in accordance with the requirements in Part 5.

A-9.25.4.2.(6) Protection of Vapour Barriers.

The requirements of CAN/CGSB-51.33-M, "Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction," were developed for paper-based vapour barriers, which are not susceptible to deterioration under prolonged exposure to direct ultraviolet (UV) radiation. Since the publication of the last edition of this standard in 1989, non-polyethylene vapour barriers have become available that are susceptible to UV-induced deterioration. These vapour barriers must be protected by a covering or installed in locations where they will not be exposed to direct UV radiation after the completion of construction. In addition, the vapour barrier manufacturer's guidance regarding the maximum allowable time of exposure to direct UV radiation should be followed where provided. Exposure to direct UV radiation most commonly occurs around window openings.

A-9.25.4.3.(2) Location of Vapour Barriers.

Assemblies in which the vapour barrier is located partway through the insulation meet the intent of this Article provided it can be shown that the temperature of the vapour barrier will not fall below the dew point of the heated interior air.

A-9.25.5.1. Location of Low Permeance Materials.

Low Air- and Vapour-Permeance Materials and Implications for Moisture Accumulation

The location in a building assembly of a material with low air permeance is not critical; the material can restrict outward movement of indoor air whether it is located near the outer surface of the assembly, near the inner surface, or at some intermediate location, and such restriction of air movement is generally beneficial, whether or not the particular material is designated as part of the air barrier system. However, if such a material also has the characteristics of a vapour barrier (i.e., low permeability to water vapour) and low thermal resistance, its location must be chosen more carefully in order to avoid moisture accumulation.

Any moisture from the indoor air which diffuses through the inner layers of the assembly or is carried by air leakage through those layers may be prevented from diffusing or being transferred through the assembly by a low air- and vapour-permeance material. This moisture transfer will usually not cause a problem if the material is located where the temperature is above the dew point of the indoor air; the water vapour will remain as vapour, the humidity level in the assembly will come to equilibrium with that of the indoor air, further accumulation of moisture will cease or stabilize at a low rate, and no harm will be done.

But if the low air- and vapour-permeance material is located where the temperature is below the dew point of the air at that location, water vapour will condense and accumulate as water or ice, which will reduce the humidity level and encourage the movement of more water vapour into the assembly. If this temperature remains below the dew point for any length of time, significant moisture could accumulate. When warmer weather returns, the presence of a material with low water vapour permeance can retard drying of the accumulated moisture. Moisture which remains into warmer weather can support the growth of decay organisms.

Due consideration should be given to the properties and location of any material in the building envelope, including paints, liquid-applied or sprayed-on and trowelled-on materials. It is recognized that assemblies that include low air- and vapour-permeance materials are acceptable, but only where these materials are not susceptible to damage from moisture or where they can accommodate moisture (for example insulated concrete walls). Further information on the construction of basement walls may be found in

- Performance Guidelines for Basement Envelope Systems and Materials," published by NRC-IRC.
- Best Practice Guide Full-Height Basement Insulation Guide, 2008 published by MMAH

Cladding

Different cladding materials have different vapour permeances and different degrees of susceptibility to moisture deterioration. They are each installed in different ways that are more or less conducive to the release of moisture that may accumulate on the inner surface. Sheet or panel-type cladding materials, such as metal sheet, have a vapour permeance less than 60 ng/(Pa·s·m^2). Sheet metal cladding that has lock seams also has a low air leakage characteristic and so must be installed outboard of a drained and vented air space. Assemblies clad with standard residential vinyl or metal strip siding do not require additional protection as the joints are not so tight as to prevent the dissipation of moisture.

Table 3
Objectives and Functional Statements Attributed to the Acceptable Solutions in Part 3 of Division B

Acceptable Solutions	Objectives and Functional Statements
3.1.1.5.	**Radon**
(1)	[F40, F50-OH1.1]
3.1.1.6.	**Building in Flood Plains**
(1)	(a) [F20-OP2.1]
	(a) [F20-OS2.1, OS2.3]
	(a) [F61-OH1.3]
	(b) [F10, F12-OS3.1] [F10, F30-OS3.7]
3.1.3.1.	**Separation of Major Occupancies**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OS1.2]
(3)	[F02, F03, F06-OS1.2] [F10, F05-OS1.5]
	[F02, F03, F06-OP1.2]
3.1.3.2.	**Prohibition of Occupancy Combinations**
(1)	[F02, F03-OS1.2] [F10-OS1.5]
(2)	[F02, F03-OS1.2] [F10-OS1.5]
(3)	[F41-OH2.1]
(5)	[F02, F03-OS1.2] [F10-OS1.5]
3.1.4.2.	**Protection of Foamed Plastics**
(1)	[F01-OP1.1] [F02-OP1.2]
	[F01-OS1.1] [F02-OS1.2]
(1.1)	[F01-OP1.1] [F02-OP1.2]
	[F01-OS1.1] [F02-OS1.2]
(2)	[F01-OP1.1] [F02-OP1.2]
	[F01-OS1.1] [F02-OS1.2]
3.1.4.3.	**Wires and Cables**
(1)	[F02-OP1.2]
	[F02-OS1.2]
(2)	[F02-OP1.2]
	[F02-OS1.2]
(3)	[F02-OP1.2]
	[F02-OS1.2]
3.1.4.5.	**Fire-Retardant Treated Wood**
(1)	[F02-OP1.2]
	[F02-OS1.2]
3.1.4.8.	**Exterior Cladding**
(1)	[F02, F03-OP3.1]
(2)	[F02, F03-OP3.1]
3.1.5.1.	**Noncombustible Materials**
(1)	[F02-OP1.2]
	[F02-OS1.2]
3.1.5.5.	**Combustible Cladding for Exterior Walls**
(2)	[F02, F03-OP3.1]

Acceptable Solutions	Objectives and Functional Statements
3.1.5.21.	**Wires and Cables**
(2)	[F02-OP1.2]
	[F02-OS1.2]
(3)	[F02-OP1.2]
	[F02-OS1.2]
3.1.5.23.	**Wires in Computer Room Floors**
(1)	[F02-OP1.2]
	[F02-OS1.2]
(2)	[F02-OP1.2]
	[F02-OS1.2]
3.1.6.2.	**Materials Permitted**
(1)	[F02-OS1.2]
	[F02-OP1.2]
3.1.6.3.	**Structural Mass Timber Elements**
(2)	[F04-OS1.3]
	[F04-OP1.3]
(3)	[F02-OS1.2]
	[F02-OP1.2]
3.1.6.4.	**Encapsulation of Mass Timber Elements**
(1)	[F02-OS1.2]
	[F02-OP1.2]
(2)	[F02-OS1.2]
	[F02-OP1.2]
3.1.6.5.	**Determination of Encapsulation Ratings**
(1)	[F02-OS1.2]
	[F04-OS1.3]
	[F02-OP1.2]
	[F02-OP1.3]
3.1.6.9.	**Exterior Cladding**
(1)	[F02-OS1.2]
	[F02-OP1.2]
(7)	[F03-OS1.2]
	[F03-OP1.2]
(9)	[F02, F03-OP3.1] **r1**
3.1.6.17.	**Penetration by Outlet Boxes**
(3)	[F03-OS1.2]
	[F03-OP1.2]
3.1.7.1.	**Determination of Ratings**
(1)	[F03-OP1.2] [F04-OP1.3]
	[F03-OS1.2] [F04-OS1.3]
3.1.7.5.	**Rating of Supporting Construction**
(1)	[F04-OP1.3]
	[F04-OS1.3]
(3)	[F04-OP1.3]
	[F04-OS1.3]
3.1.8.1.	**General Requirements**
(1)	(a) [F03-OP1.2]
	(a) [F03-OS1.2]

Acceptable Solutions	Objectives and Functional Statements
(2)	[F03-OP1.2] Applies to the requirement that openings in *fire separations* be protected with *closures,* shafts or other means.
	[F03-OS1.2] Applies to the requirement that openings in *fire separations* be protected with *closures,* shafts or other means.
3.1.8.2.	**Combustible Construction Support**
(1)	[F04-OP1.2]
	[F04-OS1.2]
3.1.8.3.	**Continuity of Fire Separations**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F03-OP1.2]
	[F03-OS1.2]
(4)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.4.	**Determination of Ratings**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F03-OP1.2]
	[F03-OS1.2]
(4)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.5.	**Installation of Closures**
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F03-OP1.2]
	[F03-OS1.2]
(4)	[F81-OP1.2]
	[F81-OS1.2]
(6)	[F03-OP1.2]
	[F03-OS1.2]
(7)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.6.	**Maximum Openings**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.7.	**Location of Fire Dampers and Smoke Dampers**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.10.	**Installation of Fire Dampers**
(1)	[F04-OP1.2]
	[F04-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F04-OP1.2]
	[F04-OS1.2]
(4)	[F03-OP1.2]
	[F03-OS1.2]
(5)	[F82-OH1.2] Applies to portion of code text "A tightly fitted access door shall be installed for each *fire damper* to provide access for ... the resetting of the release device."
	[F82-OP1.2] Applies to portion of code text "A tightly fitted access door shall be installed for each *fire damper* to provide access for the inspection of the damper..."
	[F82-OS1.2] Applies to portion of code text "A tightly fitted access door shall be installed for each *fire damper* to provide access for the inspection of the damper..."
3.1.8.11.	**Installation of Smoke Dampers**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F03-OP1.2]
	[F03-OS1.2]
(4)	[F03-OP1.2]
	[F03-OS1.2]
(5)	[F82-OH1.2] Applies to portion of code text "A tightly fitted access door shall be installed for each *fire damper* to provide access for ... the resetting of the release device."
	[F82-OP1.2] Applies to portion of code text "A tightly fitted access door shall be installed for each *fire damper* to provide access for the inspection of the damper..."
	[F82-OS1.2] Applies to portion of code text "A tightly fitted access door shall be installed for each *fire damper* to provide access for the inspection of the damper..."
3.1.8.12.	**Twenty-Minute Closures**
(3)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.13.	**Self-Closing Devices**
(1)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.14.	**Hold-Open Devices**
(1)	[F03-OS1.2]
	[F03-OP1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F03-OP1.2]
	[F03-OS1.2]
(4)	[F03-OP1.2]
	[F03-OS1.2]
(5)	[F03-OP1.2]
	[F03-OS1.2]
3.1.8.15.	**Door Latches**
(1)	[F03-OP1.2]
	[F03-OS1.2]

Acceptable Solutions	Objectives and Functional Statements
	[F02-OS1.2]
(3)	[F02-OP1.2]
	[F02-OP3.1]
	[F02-OS1.2]
(4)	[F02-OP1.2]
	[F02-OP3.1]
	[F02-OS1.2]
3.1.16.1.	**Fabric Awnings, Canopies and Marquees**
(1)	[F02-OP1.2]
	[F02-OS1.2, OS1.5]
3.1.17.1.	**Occupant Load Determination**
(1)	[F10-OS3.7]
	[F72-OH2.1] [F71-OH2.3]
(2)	[F10-OS3.7]
	[F72-OH2.1] [F71-OH2.3]
(4)	[F10-OS3.7]
	[F72-OH2.1] [F71-OH2.3]
3.1.17.2.	**Public Pools**
(1)	[F10-OS3.7]
	[F72-OH2.1] [F71-OH2.3]
(2)	[F10-OS3.7]
	[F72-OH2.1] [F71-OH2.3]
3.1.18.1.	**Drainage**
(1)	[F60-OH1.1, OH1.2, OH1.3]
	[F60-OS2.3]
3.1.19.1.	**Clearance to Buildings**
(1)	[F01-OP1.1]
	[F01-OS1.1]
	[F32-OS3.3]
(2)	[F01-OP1.1]
	[F01-OS1.1]
	[F32-OS3.3]
(3)	[F01-OP1.1]
	[F01-OS1.1]
	[F32-OS3.3]
3.1.20.1.	**Glass**
(1)	[F30-OS2.3, OS3.1]
3.2.1.2.	**Storage Garage Considered as a Separate Building**
(1)	[F03-OP1.2]
	[F03-OS1.2]
(2)	[F03-OP1.2]
	[F03-OS1.2]
(3)	[F03-OP1.2]
	[F03-OS1.2]
3.2.1.4.	**Floor Assembly over Basement**
(1)	[F04-OP1.3]
	[F03-OS1.2] [F04-OS1.3]
(2)	[F04-OP1.2, OP1.3]
	[F04-OS1.2, OS1.3]
3.2.1.5.	**Fire Containment in Basements**
(1)	[F02-OP1.2, OP1.3]
	[F02-OS1.2, OS1.3]

Acceptable Solutions	Objectives and Functional Statements
3.2.2.2.	**Special and Unusual Structures**
(1)	[F02, F03, F04-OP1.2, OP1.3]
	[F02, F03, F04-OS1.2, OS1.3]
3.2.2.6.	**Multiple Major Occupancies**
(1)	[F02, F03, F04-OP1.2, OP1.3]
	[F02, F03, F04-OS1.2, OS1.3]
3.2.2.10.	**Streets**
(1)	[F12-OP1.2]
	[F12-OS1.2, OS1.5]
3.2.2.15.	**Storeys Below Ground**
(2)	(a) [F02, F04-OP1.2, OP1.3]
	(a) [F02, F04-OS1.2, OS1.3]
	(b), (c) [F03, F04-OP1.2] [F04-OP1.3]
	(b), (c) [F03, F04-OS1.2] [F04-OS1.3]
3.2.2.18.	**Automatic Sprinkler System Required** **r1**
(2)	[F02, F04-OS1.2, OS1.3]
	[F02, F04-OP1.2, OP1.3]
3.2.2.20.	**Group A, Division 1, Any Height, Any Area, Sprinklered**
(2)	[F02-OP1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *non-combustible construction,*" [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a) ... the *building* shall be *sprinklered* throughout,"
	[F02-OS1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *non-combustible construction,*" [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a) ... the *building* shall be *sprinklered* throughout,"
	(b), (d) [F03, F04-OP1.2] [F04-OP1.3]
	(b), (d) [F03, F04-OS1.2] [F04-OS1.3]
	(c) [F04-OP1.3]
	(c) [F04-OS1.3]
3.2.2.21.	**Group A, Division 1, One Storey, Limited Area, Sprinklered**
(1)	(a) [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout," (a) [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout,"
(2)	[F02-OP1.2] Applies to portion of Code text: "The *building* referred to in Sentence (1) is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination," [F03, F04-OP1.2] [F04-OP1.3] Applies to portion of Code text: "(a) floor assemblies shall be *fire separations,* (i) with a *fire-resistance rating* not less than 45 min," and to Clause (b).
	[F02-OS1.2] Applies to portion of Code text: "The *building* referred to in Sentence (1) is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination," [F03, F04-OS1.2] [F04-OS1.3] Applies to portion of Code text: "(a) floor assemblies shall be *fire separations*, (i) with a *fire-resistance rating* not less than 45 min," and to Clause (b).

Acceptable Solutions	Objectives and Functional Statements
3.2.2.22.	**Group A, Division 1, One Storey, Sprinklered**
(1)	(a) [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout," (a) [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout,"
(2)	(a) (d) [F03, F04-OP1.2] [F04-OP1.3]
	(a) (d) [F03, F04-OS1.2] [F04-OS1.3]
	(b), (c) [F04-OP1.3]
	(b), (c) [F04-OS1.3]
3.2.2.23.	**Group A, Division 2, Any Height, Any Area, Sprinklered**
(2)	[F02-OP1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction,*" [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a) ... the *building* shall be *sprinklered* throughout,"
	[F02-OS1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction,*" [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a) ... the *building* shall be *sprinklered* throughout,"
	(b), (d) [F03, F04-OP1.2] [F04-OP1.3]
	(b), (d) [F03, F04-OS1.2] [F04-OS1.3]
	(c) [F04-OP1.3]
	(c) [F04-OS1.3]
3.2.2.24.	**Group A, Division 2, up to 6 Storeys, Any Area, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered*, throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
(2)	[F02-OP1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction,*"
	[F02-OS1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction,*"
	(a), (c) [F03, F04-OP1.2] [F04-OP1.3]
	(a), (c) [F03, F04-OS1.2] [F04-OS1.3]
	(b) [F04-OP1.3]
	(b) [F04-OS1.3]
3.2.2.25.	**Group A, Division 2, up to 2 Storeys**
(2)	[F04-OP1.3] Applies to portion of Code text: "(c) roof assemblies shall have, if of *combustible construction,* a *fire-resistance rating* not less than 45 min," and to Clause (d).
	[F04-OS1.3] Applies to portion of Code text: "(c) roof assemblies shall have, if of *combustible construction,* a *fire-resistance rating* not less than 45 min," and to Clause (d).
	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a), (d) [F03, F04-OP1.2] [F04-OP1.3]
	(a), (d) [F03, F04-OS1.2] [F04-OS1.3]
	(b) [F04-OP1.3]
	(b) [F04-OS1.3]
3.2.2.26.	**Group A, Division 2, up to 2 Storeys, Increased Area, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
(2)	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a), (c) [F03, F04-OP1.2] [F04-OP1.3]
	(a), (c) [F03, F04-OS1.2] [F04-OS1.3]
	(b) [F04-OP1.3]
	(b) [F04-OS1.3]
3.2.2.27.	**Group A, Division 2, up to 2 Storeys, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a) the *building* is *sprinklered* throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a) the *building* is *sprinklered* throughout,"
3.2.2.28.	**Group A, Division 2, One Storey**
(2)	[F03-OP1.2]
	[F03-OS1.2]
3.2.2.29.	**Group A, Division 3, Any Height, Any Area**
(2)	[F02-OP1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction,*" [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a) ... the *building* shall be *sprinklered* throughout,"
	[F02-OS1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction,*" [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a) ... the *building* shall be *sprinklered* throughout,"
	(b), (e) [F03, F04-OP1.2] [F04-OP1.3]
	(b), (e) [F03, F04-OS1.2] [F04-OS1.3]
	(c) [F04-OP1.3]
	(c) [F04-OS1.3]
(3)	[F02-OP1.2] [F04-OP1.3]
	[F02-OS1.2] [F04-OS1.3]
3.2.2.30.	**Group A, Division 3, up to 2 Storeys**
(2)	[F02-OP1.2] Applies to portion of Code text: "Except as permitted by Clauses (c) and (d), the *building* referred to in Sentence (1) shall be of *noncombustible construction,*" [F04-OP1.3] Applies to portion of Code text: "(c) roof assemblies shall (i) have a *fire-resistance rating* not less than 45 min," and to Clause (d).
	[F02-OS1.2] Applies to portion of Code text: "Except as permitted by Clauses (c) and (d), the *building* referred to in Sentence (1) shall be of *noncombustible construction,*"

Acceptable Solutions	Objectives and Functional Statements
	(b), (d) [F03, F04-OP1.2] [F04-OP1.3]
	(b), (d) [F03, F04-OS1.2] [F04-OS1.3]
	(c) [F04-OP1.3]
	(c) [F04-OS1.3]
3.2.2.77.	**Group F, Division 2, up to 4 Storeys, Increased Area, Sprinklered**
(1)	(a) [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout,"
	(a) [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout,"
(2)	[F02-OS1.2] Applies to portion of Code text: "… the *building* referred to in Sentence (1) shall be of *noncombustible construction,*"
	[F02-OP1.2] Applies to portion of Code text: "… the *building* referred to in Sentence (1) shall be of *noncombustible construction,*"
	(a), (c) [F03-OS1.2] [F04-OS1.2, OS1.3]
	(a), (c) [F03-OP1.2] [F04-OP1.2, OP1.3]
	(b), (c) [F04-OS1.3]
	(b), (c) [F04-OP1.3]
3.2.2.78.	**Group F, Division 2, up to 3 Storeys**
(2)	(a), (e) [F03-OS1.2] [F04-OS1.2, OS1.3]
	(a), (e) [F03-OP1.2] [F04-OP1.2, OP1.3]
	(b), (d) [F04-OS1.3]
	(b), (d) [F04-OP1.3]
	[F04-OS1.3] Applies to portion of Code text: "… (c) roof assemblies shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min," and to Clause (d).
	[F04-OP1.3] Applies to portion of Code text: "… (c) roof assemblies shall have, if of *combustible construction*, a *fire-resistance rating* not less than 45 min," and to Clause (d).
3.2.2.79.	**Group F, Division 2, up to 4 Storeys, Sprinklered**
(1)	(a) [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "… the *building* is sprinklered throughout,"
	(a) [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "… the *building* is *sprinklered* throughout,"
(2)	(a), (d) [F03-OS1.2] [F04-OS1.2, OS1.3]
	(a), (d) [F03-OP1.2] [F04-OP1.2, OP1.3]
	(b), (c) [F04-OS1.3]
	(b), (c) [F04-OP1.3]
3.2.2.80.	**Group F, Division 2, up to 2 Storeys**
(2)	[F03, F04-OP1.2] [F04-OP1.3]
	[F03, F04-OS1.2] [F04-OS1.3]
	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
3.2.2.81.	**Group F, Division 2, up to 2 Storeys, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
(2)	[F03, F04-OP1.2] [F04-OP1.3]
	[F03, F04-OS1.2] [F04-OS1.3]
	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible floor* assemblies be *fire separations*.
3.2.2.82.	**Group F, Division 3, Any Height, Any Area, Sprinklered**
(2)	[F02-OS1.2] Applies to portion of Code text: "… the *building* referred to in Sentence (1) shall be of noncombustible construction,"
	[F02-OP1.2] Applies to portion of Code text: "… the *building* referred to in Sentence (1) shall be of *noncombustible construction,*"
	(a) [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "… the *building* shall be *sprinklered* throughout,"
	(a) [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "… the *building* shall be *sprinklered* throughout,"
	(b), (d) [F03-OS1.2] [F04-OS1.2, OS1.3]
	(b), (d) [F03-OP1.2] [F04-OP1.2, OP1.3]
	(c), (d) [F04-OS1.3]
	(c), (d) [F04-OP1.3]
3.2.2.83.	**Group F, Division 3, up to 6 Storeys**
(2)	[F02-OP1.2] Applies to portion of Code text: "The *building* referred to in Sentence (1) shall be of *noncombustible construction*,"
	[F02-OS1.2] Applies to portion of Code text: "The *building* referred to in Sentence (1) shall be of *noncombustible construction*,"
	(a), (d) [F03-OS1.2] [F04-OS1.2, OS1.3]
	(a), (d) [F03-OP1.2] [F04-OP1.2, OP1.3]
	(b), (d) [F04-OS1.3]
	(b), (d) [F04-OP1.3]
	(c), (d) [F04-OS1.3]
	(c), (d) [F04-OP1.3]
3.2.2.84.	**Group F, Division 3, up to 6 Storeys, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
(2)	[F02-OP1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be of *noncombustible construction*,"
	[F02-OS1.2] Applies to portion of Code text: "... the *building* referred to in Sentence (1) shall be *of noncombustible construction*,"
	(a), (c) [F03, F04-OP1.2] [F04-OP1.3]
	(a), (c) [F03, F04-OS1.2] [F04-OS1.3]
	(b) [F04–OP1.3]
	(b) [F04-OS1.3]

Acceptable Solutions	Objectives and Functional Statements
3.2.2.85.	**Group F, Division 3, up to 4 Storeys**
(2)	[F04-OP1.3] Applies to portion of Code text: "(c) roof assemblies shall have, if of *combustible construction, a fire-resistance rating* not less than 45 min," and to Clause (d).
	[F04-OS1.3] Applies to portion of Code text: "(c) roof assemblies shall have, if of *combustible construction,* a *fire-resistance rating* not less than 45 min," and to Clause (d).
	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a), (d) [F03, F04-OP1.2] [F04-OP1.3]
	(a), (d) [F03, F04-OS1.2] [F04-OS1.3]
	(b) [F04-OP1.3]
	(b) [F04-OS1.3]
3.2.2.86.	**Group F, Division 3, up to 4 Storeys, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a) the *building* is *sprinklered* throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a) the *building* is *sprinklered* throughout,"
(2)	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a), (c) [F03, F04-OP1.2] [F04-OP1.3]
	(a), (c) [F03, F04-OS1.2] [F04-OS1.3]
	(b) [F04-OP1.3]
	(b) [F04-OS1.3]
3.2.2.87.	**Group F, Division 3, up to 2 Storeys**
(2)	[F03, F04-OP1.2] [F04-OP1.3]
	[F03, F04-OS1.2] [F04-OS1.3]
	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
3.2.2.88.	**Group F, Division 3, up to 2 Storeys, Sprinklered**
(1)	[F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
	[F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a)... the *building* is *sprinklered* throughout,"
(2)	[F03, F04-OP1.2] [F04-OP1.3]
	[F03, F04-OS1.2] [F04-OS1.3]
	(a) [F03-OP1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
	(a) [F03-OS1.2] Applies to the requirement that *noncombustible* floor assemblies be *fire separations*.
3.2.2.89.	**Group F, Division 3, One Storey**
(1)	[F02-OP1.2] Applies to portion of Code text: "A *building* classified as Group F, Division 3 is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination,"
	[F02-OS1.2] Applies to portion of Code text: "A *building* classified as Group F, Division 3 is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination,"
3.2.2.90.	**Group F, Division 3, One Storey, Sprinklered**
(1)	[F02-OP1.2] Applies to portion of Code text: "A *building* classified as Group F, Division 3 is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination," [F02, F04-OP1.2, OP1.3] Applies to portion of Code text: "a) ... the *building* is *sprinklered* throughout,"
	[F02-OS1.2] Applies to portion of Code text: "A *building classified* as Group F, Division 3 is permitted to be of *heavy timber construction* or *noncombustible construction* used singly or in combination," [F02, F04-OS1.2, OS1.3] Applies to portion of Code text: "(a) ... the *building* is *sprinklered* throughout,"
3.2.2.91.	**Group F, Division 3, One Storey, Any Area, Low Fire Load Occupancy**
(2)	[F02-OP1.2]
	[F02-OS1.2]
3.2.2.92.	**Group F, Division 3, Storage Garages up to 22 m High**
(1)	[F02-OP1.2] Applies to portion of Code text: "A *building* used as a *storage garage* with all *storeys* constructed as *open-air storeys* and having on other *occupancy* above it is permitted to have its floor, wall, ceiling and roof assemblies constructed without a *fire-resistance rating* provided it is a) of *noncombustible construction*,"
	[F02-OS1.2] Applies to portion of Code text: "A *building* used as a *storage garage* with all *storeys* constructed as *open-air storeys* and having on other *occupancy* above it is permitted to have its floor, wall, ceiling and roof assemblies constructed without a *fire-resistance rating* provided it is a) of *noncombustible construction*,"
3.2.2.93.	**Encapsulated Mass Timber Construction, Various Occupancies, Heights and Areas, Sprinklered** r_1
(2)	(b), (c) [F04-OS1.3]
	(b), (c) [F04-OP1.3]
	(a), (c) [F03-OS1.2] [F04-OS1.2, OS1.3]
	(a), (c) [F03-OP1.2] [F04-OP1.2, OP1.3]
3.2.3.1.	**Limiting Distance and Area of Unprotected Openings**
(1), (5), (6), (8) to (10)	[F03-OP3.1] e_1
3.2.3.5.	**Wall with Limiting Distance Less Than 1.2 m**
(1)	[F03-OP3.1]
(2)	[F03-OP3.1]
3.2.3.6.	**Combustible Projections**
(1) to (3)	[F03-OP3.1] e_1
(5)	[F03-OP3.1]
3.2.3.7.	**Construction of Exposing Building Face**
(1)	[F02, F03-OP3.1]
(2)	[F02, F03-OP3.1]
(3)	[F02, F03-OP3.1]

Acceptable Solutions	Objective and Functional Statements
	(e) [F101-OH6]
	(f), (g) [F50-OH1.1]
	(f), (g) [F42-OH2.5]
8.3.3.1.	**Construction Requirements**
(1)	(a) [F110, F112-OE]
	(a) [F110, F112-OH5]
	(b) [F20-OS2.2]
	(b), (d) [F113-OH2.6]
	(c) [F112-OE]
	(c) [F112-OH5]
	(d) [F110-OE]
8.3.4.1.	**Construction Requirements**
(1)	(a) [F40-OH2.4] [F113-OH2.6]
	(b) [F113-OH2.6]
	(c) [F111-OE]
	(c) [F111-OH5]
8.3.5.1.	**Construction Requirements**
(1)	(a) [F113-OH2.6]
	(b) [F40-OH2.4]
	(c) [F20-OS2.1]
8.4.1.2.	**Application**
(1)	[F110-OE]
	[F110-OH5]
8.4.2.1.	**Construction Requirements**
(1)	[F110, F112-OE]
	[F110, F112-OH5]
(2)	[F113-OH2.6]
	[F20-OS2.2]
(3)	[F112-OE]
	[F112-OH5]
(4)	[F82-OE]
	[F42-OH2.5] [F113-OH2.6]
	[F82-OH5]
	[F30-OS3.1]
(5)	[F113-OH2.6]
(6)	[F111-OE]
	[F111-OH5]
(7)	[F112-OE]
	[F112-OH5]
8.4.2.2.	**Maximum Sewage Flow**
(1)	[F110, F112-OE]
	[F110, F112-OH5]
8.4.2.3.	**Sizing**
(1)	[F110, F112-OE]
	[F110, F112-OH5]
8.5.1.2.	**Application**
(1)	[F110, F112-OE]
	[F110, F112-OH5]
(2)	[F112-OE]
	[F112-OH5]

Acceptable Solutions	Objective and Functional Statements
8.5.2.1.	**Construction Requirements**
(1)	[F110, F112-OE]
	[F110, F112-OH5]
(2)	[F113-OH2.6]
	[F20-OS2.2]
(3)	[F112-OE]
	[F112-OH5]
(4)	[F82-OE]
	[F42-OH2.5] [F113-OH2.6]
	[F82-OH5]
	[F30-OS3.1]
(5)	[F30-OS3.1]
(6)	[F113-OH2.6]
(7)	[F111-OE]
	[F111-OH5]
(8)	[F112-OE]
	[F112-OH5]
8.6.1.2.	**General Requirements**
(1)	[F112-OE]
	[F112-OH5]
8.6.1.3.	**Pumps and Siphons**
(1)	[F110, F111, F112-OE]
	[F110, F111, F112-OH2.1]
	[F110, F111, F112-OH5]
(2)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(3)	[F110, F111, F112-OE]
	[F110, F111, F112-OH5]
(4)	[F111, F113-OE]
	[F111, F113-OH5]
(5)	[F112-OE]
	[F112-OH5]
(6)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.6.2.1.	**Septic Tank Systems**
(1)	[F110, F111-OE]
	[F110, F111-OH5]
(2)	[F110, F111-OE]
	[F110, F111-OH5]
(3)	[F82-OE]
	[F82-OH2.1]
8.6.2.2.	**Other Treatment Units**
(1)	[F110-OE]
	[F110-OH5]
(2)	[F110, F111-OE]
	[F110, F111-OH5]
(3)	[F111-OE]
	[F111-OH2.1]
	[F111-OH5]

Acceptable Solutions	Objective and Functional Statements
(4)	[F111-OE]
	[F111-OH2.1]
	[F111-OH5]
(6)	[F82, F111-OE]
	[F82, F111-OH2.1]
	[F82, F111-OH5]
8.7.1.1.	**Application Scope**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.7.1.2.	**Limitation on Installation**
(1)	[F110, F111, F112-OE]
	[F110, F111, F112-OH2.1]
	[F110, F111, F112-OH5]
8.7.2.1.	**General Requirements**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(2)	[F104, F110, F111-OE]
	[F104, F110, F111-OH2.1]
	[F104, F110, F111-OH5]
	[F104, F110, F111-OR2]
(3)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(4)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(5)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.7.2.2.	**Distribution Pipes within Leaching Beds**
(2)	[F111-OE]
8.7.2.3.	**Leaching Chambers within Leaching Beds**
(3)	[F111, F112-OE]
	[F111, F112-OH2.1]
	[F111, F112-OH5]
(4)	[F111-OE]
8.7.3.1.	**Length of Distribution Pipe**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(2)	[F110-OE]
	[F110-OH5]
(3)	[F110-OE]
	[F110-OH5]
(4)	[F110-OE]
	[F110-OH5]
8.7.3.2.	**Length of Leaching Chamber**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(2)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(3)	[F110-OE]
	[F110-OH2.1]
	[F110-OH5]
(4)	[F110-OE]
	[F110-OH5]
8.7.3.3.	**Absorption Trenches**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(2)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.7.3.4.	**Distribution Pipe**
(1)	[F111-OE]
	[F111-OH5]
(2)	[F111-OE]
	[F111-OH5]
(3)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(4)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.7.3.5.	**Leaching Chamber**
(1)	[F111-OE]
	[F111-OH5]
(2)	[F111-OE]
	[F111-OH5]
(3)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.7.4.1.	**Loading Requirements**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
8.7.4.2.	**Construction Requirements**
(1)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(2)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(3)	[F110, F111-OE]
	[F110, F111-OH2.1]
	[F110, F111-OH5]
(5)	[F110, F111-OE]
	[F110, F111-OH2.1]

e1 e1 e1 e1

MMAH Supplementary Standard SB-7

Guards for Housing and Small Buildings

January 1, 2024

Issued November 4, 2024

COMMENCEMENT

MMAH Supplementary Standard SB-7 comes into force on the 1st day of January 2025.

EDITORIAL

e1 Editorial correction issued for January 1st, 2025.

Appendix A

Explanatory Material for SB-7

Appendix A to this Supplementary Standard is included for explanatory purposes only and does not form part of the requirements. The bold-faced reference numbers that introduce each item apply to the requirements in this Supplementary Standard.

e1 **A-1.1.1. Scope.** A guard constructed in conformance with this Supplementary Standard is deemed to satisfy the requirements of Sentence 9.8.8.2.(6) of Division B.

Guard design in this Supplementary Standard is based on a height of 1 070 mm and a maximum clear spacing of 100 mm between pickets or balusters.

A-1.1.1.(2) Guards located on the exterior of a building are subject to deterioration as a result of hygrothermal, electrochemical or biochemical action.

A-1.2.1. Cantilever Action. Where guards incorporate wood posts that are continuous from the top of the guard to the ground, or where the tops of the posts are attached to a superstructure that is connected to the building, the cantilever assumption in the Supplementary Standards is no longer valid. An example of a continuous post is shown in Figure A-1.2.1.

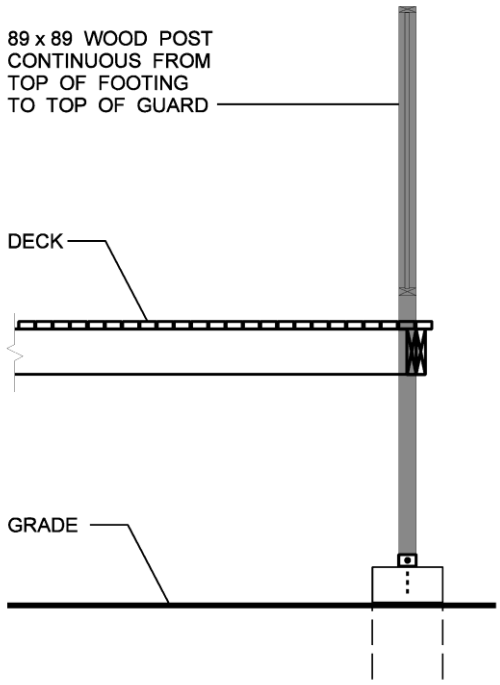

Figure A-1.2.1.
Typical Continuous Post

A-1.2.2. Classification. A Post and Rail System consists of a top rail that transfers horizontal loads to posts. The posts transfer the loads from the rail to the floor system. This system may incorporate a bottom rail that is anchored at each end to the posts. Infill panels or infill pickets are installed between the top rail and the floor or bottom rail. Examples of Post and Rail Systems are shown in Figure A-1.2.2.A.

The term "infill pickets" refers to an assembly of vertically oriented elements that span between the floor or bottom rail and the top rail. For the purpose of this Supplementary Standard, the words "picket" and "baluster" both relate to these individual elements.

The spacing of the posts in a Post and Rail System is detailed in this Supplementary Standard and is dictated by the ability of the posts to accept the design loads. The maximum spanning capacity of the rails is often not realised because it is dictated by the post spacing.

A Cantilevered Picket System consists of a top rail that transfers horizontal loads to pickets. The pickets transfer the loads from the top rail to the floor system. An example of a Cantilevered Picket System is shown in Figure A-1.2.2.B.

A guard classified as a Post and Rail System or a Cantilevered Picket System need not always terminate at a post if:
(a) the top rail is connected adequately to an element capable of accepting the forces applied to it, or
(b) the guard changes direction and the rails are adequately fastened at the return.

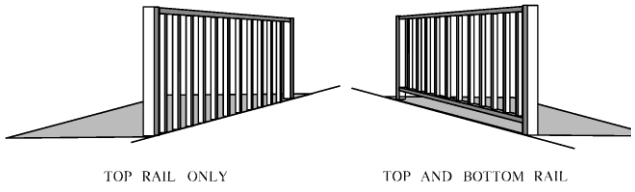

Figure A-1.2.2.A
Typical Post and Rail Systems

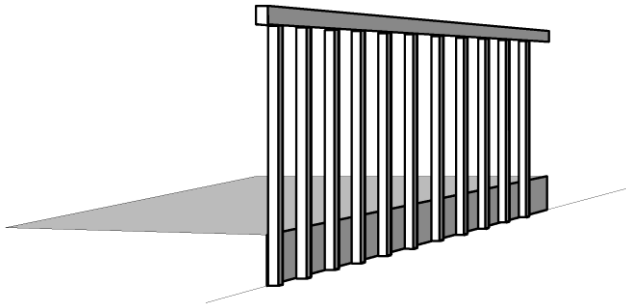

Figure A-1.2.2.B
Cantilevered Picket System

A-2.1.1. Lumber Grades. Whereas Northern Species is specified as the minimum lumber grade, Spruce-Pine-Fir, Douglas Fir-Larch and Hem-Fir may also be used since their structural properties exceed those of Northern Species. Cedar falls within the classification of Northern Species Group.

A-2.1.3. Floor Construction. The lateral loads acting on a guard are transferred from either the posts or the pickets to the floor system. Therefore, the floor system must be sufficiently strong to transfer these loads.

A-2.1.4. Connectors. Pre-drilling of wood elements may be required in order to avoid splitting of structural wood elements. Where a glued joint is required, an adhesive conforming to CSA Standard O112.4-M1977 (Polyvinyl Adhesives for Wood) and CSA Standard O112.8-M1977 (Polyvinyl Adhesives - Cross Linking, for Wood) is acceptable.

A-2.1.5. Decay-Resistant Lumber. Cedar is a species considered resistant to decay.