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Proposed Change 2096

Code Reference(s):	**NBC20 Div.B 1.3.1.2. (first printing), NFC20 Div.B 1.3.1.2. (first printing), NPC20 Div.B 1.3.1.2. (first printing), NECB20 Div.B 1.3.1.2. (first printing)**
Subject:	Referenced Documents
Title:	Updates to Referenced Documents

PROPOSED CHANGE

Please note that corresponding French editions of some updated documents had not yet been published at the time this table was compiled.

Issuing Agency	Document Number	Title of Document	Code Reference
AAMA (American Architectural Manufacturers Association)	501-05	Methods of Test for Exterior Walls	NBC A-5.9.3. CNB A-5.9.3.
AAMA (American Architectural Manufacturers Association)	501.1-05	Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure	NBC A-5.9.3. CNB A-5.9.3.
AAMA (American Architectural Manufacturers Association)	501.2-09	Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems	NBC A-5.9.3. CNB A-5.9.3.
AAMA (American Architectural Manufacturers Association)	501.4-09	Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind-Induced Inter-Story Drifts	NBC A-5.9.3. CNB A-5.9.3.
AAMA (American Architectural Manufacturers Association)	501.5-07	Test Method for Thermal Cycling of Exterior Walls	NBC A-5.9.3. NBC A-5.9.3.3.(1) CNB A-5.9.3. CNB A-5.9.3.3. 1) NECB 3.2.4.3.(3) CNÉB 3.2.4.3. 3)
AAMA (American Architectural Manufacturers Association)	501.6-09	Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from a Wall System	NBC A-4.1.8.18.(14) and (15) NBC A-5.9.3. CNB A-4.1.8.18. 14) et 15) CNB A-5.9.3.

Issuing Agency	Document Number	Title of Document	Code Reference
ACGIH (American Conference of Governmental Industrial Hygienists)	28th Edition	Industrial Ventilation: A Manual of Recommended Practice for Design	NBC 2.4.2.5.(1) NBC 6.2.1.1.(1) NBC 6.3.2.14.(2) NBC A-6.3.1.5. CNB 2.4.2.5. 1) CNB 6.2.1.1. 1) CNB 6.3.2.14. 2) CNB A-6.3.1.5. NFC A-3.2.7.3.(1)(b) CNPI A-3.2.7.3. 1)b)
ACI (American Concrete Institute)	355.2-19	Qualification of Post-Installed Mechanical Anchors in Concrete (ACI 355.2-19) and Commentary	NBC 4.1.8.18.(7) CNB 4.1.8.18. 7)
ACI (American Concrete Institute)	355.4M-19	Qualification of Post-Installed Adhesive Anchors in Concrete (ACI 355.4M-19) and Commentary	NBC 4.1.8.18.(7) CNB 4.1.8.18. 7)
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	AHRI 310/380-2014/CSA C744-14	Packaged Terminal Air-Conditioners and Heat Pumps	NECB Table 5.2.12.1.G
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	AHRI 310/380-2014/CSA C744-14	Conditionneurs d'air et thermopompes monoblocs	CNÉB Tableau 5.2.12.1.-G
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 1500 (2015)	Performance Rating of Commercial Space Heating Boilers	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10.
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 210/240-2008	Performance Rating of Unitary Air-Conditioning and Air-Source Heat Pump Equipment	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10. NECB Table 5.2.12.1.C CNÉB Tableau 5.2.12.1.-C
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 340/360-2007	Performance Rating of Commercial and Industrial Unitary Air-Conditioning and Heat Pump Equipment	NECB Table 5.2.12.1.A NECB Table 5.2.12.1.C CNÉB Tableau 5.2.12.1.-A CNÉB Tableau 5.2.12.1.-C
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 366 (SI/2009)	Performance Rating of Commercial and Industrial Unitary Air-Conditioning Condensing Units	NECB Table 5.2.12.1.D CNÉB Tableau 5.2.12.1.-D
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 460-2005	Performance Rating of Remote Mechanical-Draft Air-Cooled Refrigerant Condensers	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.

Issuing Agency	Document Number	Title of Document	Code Reference
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 551/591 (SI/2018)	Performance Rating of Water-chilling and Heat Pump Water-heating Packages Using the Vapor Compression Cycle	NECB Table 5.2.12.1.L NECB Table 5.2.12.1.M CNÉB Tableau 5.2.12.1.-L CNÉB Tableau 5.2.12.1.-M
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	ANSI/AHRI 921 (SI/2015)	Performance Rating of DX-Dedicated Outdoor Air System Units	NECB Table 5.2.12.1.J CNÉB Tableau 5.2.12.1.-J
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	CAN/ANSI/AHRI 1330-2015	Performance Rating for Radiant Output of Gas Fired Infrared Heaters	NECB Table 5.2.12.1.P
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	CAN/ANSI/AHRI 1330-2015	Détermination des Caractéristiques de Performance Relatives à la Puissance Rayonnée des Appareils de Chauffage à Infrarouges au Gaz	CNÉB Tableau 5.2.12.1.-P
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	1060 (I-P/2013)	Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment	NBC 9.36.3.8.(4) CNB 9.36.3.8. 4)
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	1061 (SI/2013)	Performance Rating of Air-to-Air Exchangers for Energy Recovery Ventilation Equipment	NECB 5.2.10.1.(5) NECB A-5.2.10.1.(4) CNÉB 5.2.10.1. 5) CNÉB A-5.2.10.1. 4)
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	1160 (I-P/2014)	Performance Rating of Heat Pump Pool Heaters (with Addendum 1)	NECB Table 6.2.2.1. CNÉB Tableau 6.2.2.1.
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	1230-2014	Performance Rating of Variable Refrigerant Flow (VRF) Multi-Split Air-Conditioning and Heat Pump Equipment (with Addendum 1)	NECB Table 5.2.12.1.I CNÉB Tableau 5.2.12.1.-I
AHRI (Air-Conditioning, Heating and Refrigeration Institute)	1361 (SI/2017)	Performance Rating of Computer and Data Processing Room Air Conditioners	NECB Table 5.2.12.1.H CNÉB Tableau 5.2.12.1.-H
AISI (American Iron and Steel Institute)	~~S201~~S220-~~12~~20	North American Standard for Cold-Formed Steel Nonstructural Framing ~~- Product Data 2012~~2020 Edition	NBC 9.24.1.2.(1) CNB 9.24.1.2. 1)
AMCA (Air Movement and Control Association)	ANSI/AMCA 500-D-12	Methods of Testing Dampers for Rating	NECB 5.2.4.2.(2) CNÉB 5.2.4.2. 2)
AMCA (Air Movement and Control Association)	ANSI/AMCA 500-L-12	Methods of Testing Louvers for Rating	NECB 5.2.4.2.(2) CNÉB 5.2.4.2. 2)
ANSI (American National Standards Institute)	A135.6-2012	Engineered Wood Siding	NBC 9.27.9.1.(1) NBC Table 5.9.1.1. CNB 9.27.9.1. 1) CNB Tableau 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
ANSI (American National Standards Institute)	A208.1-2009	Particleboard	NBC 9.23.15.2.(3) NBC 9.29.9.1.(1) NBC 9.30.2.2.(1) NBC D-3.1.1. CNB 9.23.15.2. 3) CNB 9.29.9.1. 1) CNB 9.30.2.2. 1) CNB D-3.1.1.
ANSI (American National Standards Institute)/CSA (Canadian Standards Association)	ANSI Z21.10.3-2017/CSA 4.3-2017	Gas-fired water heaters, volume III, storage water heaters with input ratings above 75,000 Btu per hour, circulating and instantaneous	NBC Table 9.36.4.2. CNB Tableau 9.36.4.2. NECB Table 6.2.2.1. CNÉB Tableau 6.2.2.1.
ANSI (American National Standards Institute)/CSA (Canadian Standards Association)	ANSI Z21.22-2015/CSA 4.4-2015	Relief Valves For Hot Water Supply Systems	NPC 2.2.10.11.(1) CNP 2.2.10.11. 1)
ANSI (American National Standards Institute)/CSA (Canadian Standards Association)	ANSI Z21.47-2016/CSA 2.3-2016	Gas-fired central furnaces	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10. NECB Table 5.2.12.1.O CNÉB Tableau 5.2.12.1.-O
ANSI (American National Standards Institute)/CSA (Canadian Standards Association)	ANSI Z21.50-2016/CSA 2.22-2016	Vented decorative gas appliances	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10.
ANSI (American National Standards Institute)/CSA (Canadian Standards Association)	ANSI Z21.56-2017/CSA 4.7-2017	Gas-fired pool heaters	NBC Table 9.36.4.2. CNB Tableau 9.36.4.2. NECB Table 6.2.2.1. CNÉB Tableau 6.2.2.1.
ANSI (American National Standards Institute)/CSA (Canadian Standards Association)	ANSI Z83.8-2016/CSA 2.6-2016	Gas unit heaters, gas packaged heaters, gas utility heaters and gas-fired duct furnaces	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10. NECB Table 5.2.12.1.O CNÉB Tableau 5.2.12.1.-O
APA (APA – The Engineered Wood Association)	ANSI/APA PRG 320-2018	Standard for Performance-Rated Cross-Laminated Timber	NBC 3.1.6.3.(3) CNB 3.1.6.3. 3)
API (American Petroleum Institute)	RP 1604 (1996)	Closure of Underground Petroleum Storage Tanks	NFC A-4.3.16.1.(1) CNPI A-4.3.16.1. 1)
API (American Petroleum Institute)	RP 2003 (2008)	Protection Against Ignitions Arising Out of Static, Lightning, and Stray Currents	NFC A-4.7.4.5. CNPI A-4.7.4.5.

Issuing Agency	Document Number	Title of Document	Code Reference
API (American Petroleum Institute)	RP 2009 (2002)	Safe Welding, Cutting and Hot Work Practices in the Petroleum and Petrochemical Industries	NFC A-5.2.3.4.(1)(b) CNPI A-5.2.3.4. 1)b)
API (American Petroleum Institute)	RP 2200 (2010)	Repairing Crude Oil, Liquefied Petroleum Gas, and Product Pipelines	NFC A-4.5.10.7.(6) CNPI A-4.5.10.7. 6)
API (American Petroleum Institute)	RP 2201 (2003)	Safe Hot Tapping Practices in the Petroleum and Petrochemical Industries	NFC A-4.5.10.7.(6) NFC A-5.2.3.4.(1)(b) CNPI A-4.5.10.7. 6) CNPI A-5.2.3.4. 1)b)
API (American Petroleum Institute)	RP 2207 (2007)	Preparing Tank Bottoms for Hot Work	NFC A-5.2.3.4.(1)(b) CNPI A-5.2.3.4. 1)b)
API (American Petroleum Institute)	SPEC 12B (2008)	Specification for Bolted Tanks for Storage of Production Liquids	NFC 4.3.1.2.(1) NFC A-4.3.1.2.(2)(b) CNPI 4.3.1.2. 1) CNPI A-4.3.1.2. 2)b)
API (American Petroleum Institute)	SPEC 12D (2008)	Specification for Field Welded Tanks for Storage of Production Liquids	NFC 4.3.1.2.(1) NFC A-4.3.1.2.(2)(b) CNPI 4.3.1.2. 1) CNPI A-4.3.1.2. 2)b)
API (American Petroleum Institute)	SPEC 12F (2008)	Specification for Shop Welded Tanks for Storage of Production Liquids	NFC 4.3.1.2.(1) NFC A-4.3.1.2.(2)(b) CNPI 4.3.1.2. 1) CNPI A-4.3.1.2. 2)b)
API (American Petroleum Institute)	SPEC 5L (2012)	Line Pipe	NFC 4.5.2.1.(4) CNPI 4.5.2.1. 4)
API (American Petroleum Institute)	STD 1104 (2013)	Welding of Pipelines and Related Facilities	NFC 4.5.5.2.(1) NFC A-4.5.10.7.(6) CNPI 4.5.5.2. 1) CNPI A-4.5.10.7. 6)
API (American Petroleum Institute)	STD 2000 (2009)	Venting Atmospheric and Low-Pressure Storage Tanks	NFC 4.3.1.2.(2) NFC 4.3.4.1.(1) NFC A-4.3.13.10.(1) CNPI 4.3.1.2. 2) CNPI 4.3.4.1. 1) CNPI A-4.3.13.10. 1)
API (American Petroleum Institute)	STD 2015 (2001)	Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks, Planning and Managing Tank Entry From Decommissioning Through Recommissioning	NFC A-5.2.3.4.(1)(b) CNPI A-5.2.3.4. 1)b)
API (American Petroleum Institute)	STD 620 (2013)	Design and Construction of Large, Welded, Low-Pressure Storage Tanks	NFC 4.3.1.3.(1) CNPI 4.3.1.3. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
API (American Petroleum Institute)	STD 650 (2013)	Welded Tanks for Oil Storage	NFC 4.3.1.2.(1) CNPI 4.3.1.2. 1)
API (American Petroleum Institute)	STD 653 (2009)	Tank Inspection, Repair, Alteration, and Reconstruction	NFC 4.3.1.10.(2) NFC Table 4.4.1.2.B CNPI 4.3.1.10. 2) CNPI Tableau 4.4.1.2.B
ARPM (Association for Rubber Products Manufacturers)	IP-2-2014	Hose Handbook	NFC A-4.8.8.1.(1)(a) CNPI A-4.8.8.1. 1)a)
ASABE (American Society of Agricultural and Biological Engineers)	ANSI/ASABE AD11684:1995	Tractors, machinery for agricultural and forestry, powered lawn and garden equipment — Safety signs and hazard pictorials — General principles	NFC A-2.14.2. CNPI A-2.14.2.
ASCE (American Society of Civil Engineers)	ASCE/SEI (49-12)	Wind Tunnel Testing for Buildings and Other Structures	NBC 4.1.7.14.(1) CNB 4.1.7.14. 1)
ASCE (American Society of Civil Engineers)	ASCE/SEI (7-10)	Minimum Design Loads for Buildings and Other Structures	NBC A-4.1.8.18.(14) and (15) NBC A-9.4.2.1. and 9.4.2.2. CNB A-4.1.8.18. 14) et 15) CNB A-9.4.2.1. et 9.4.2.2.
ASCE (American Society of Civil Engineers)	ASCE/SEI (8-02)	Specification for the Design of Cold-Formed Stainless Steel Structural Members	NBC A-4.3.4.2.(1) CNB A-4.3.4.2. 1)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 111-2008	Testing, Adjusting, and Balancing of Building HVAC Systems	NECB A-5.2.5.2.(1) CNÉB A-5.2.5.2. 1)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 140-~~2011~~2023	~~Standard~~ Method of Test for ~~the Evaluation of~~Evaluating Building ~~Energy~~Performance ~~Analysis~~Simulation ~~Computer Programs~~Software	NECB 8.4.2.2.(4) CNÉB 8.4.2.2. 4)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 140-2011	Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs	NBC 9.36.5.4.(8) CNB 9.36.5.4. 8)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 188-2015	Legionellosis: Risk Management for Building Water Systems	NBC A-6.2.1.1. CNB A-6.2.1.1.
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 55-2013	Thermal Environmental Conditions for Human Occupancy	NECB A-5.2.8.3.(1) CNÉB A-5.2.8.3. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 62.1-2016	Ventilation for Acceptable Indoor Air Quality	NBC 6.3.1.1.(2) NBC 6.3.1.1.(3) NBC 6.3.2.2.(1) CNB 6.3.1.1. 2) CNB 6.3.1.1. 3) CNB 6.3.2.2. 1) NECB A-5.2.3.4.(1) CNÉB A-5.2.3.4. 1)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 62-2001	Ventilation for Acceptable Indoor Air Quality (except Addendum n)	NBC A-9.25.5.2.
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 62-2001	Ventilation for Acceptable Indoor Air Quality (sauf l'addenda n)	CNB A-9.25.5.2.
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	ANSI/ASHRAE 84-2013	Method of Testing Air-to-Air Heat/Energy Exchangers	NECB 5.2.10.1.(5) CNÉB 5.2.10.1. 5)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	Guideline 12-2000	Minimizing the Risk of Legionellosis Associated with Building Water Systems	NBC 6.2.1.1.(1) NBC 6.3.2.15.(9) NBC 6.3.2.16.(1) CNB 6.2.1.1. 1) CNB 6.3.2.15. 9) CNB 6.3.2.16. 1)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	RP-1365-2011	Thermal Performance of Building Envelope Details for Mid- and High-Rise Buildings	NECB A-3.1.1.5.(5)(a) CNÉB A-3.1.1.5. 5)a)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	1997	ASHRAE Handbook – Fundamentals	NBC A-9.32.3.11. CNB A-9.32.3.11.
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	2011	ASHRAE Handbook – HVAC Applications	NBC A-2.4.2.1.(1) CNB A-2.4.2.1. 1) NPC A-2.6.3.1.(2) CNP A-2.6.3.1. 2) NECB A-6.2.4.1.(1) CNÉB A-6.2.4.1. 1)
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)	2013	ASHRAE Handbook – Fundamentals	NBC A-9.36.2.4.(1) NBC Table A-9.36.2.4.(1)D CNB A-9.36.2.4. 1) CNB Tableau A-9.36.2.4. 1)D NPC A-2.6.3.1.(2) CNP A-2.6.3.1. 2) NECB 3.1.1.5.(4) NECB 3.1.1.5.(5) NECB A-8.4.4.4.(1) CNÉB 3.1.1.5. 4) CNÉB 3.1.1.5. 5) CNÉB A-8.4.4.4. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)/IES (Illuminating Engineering Society)	ANSI/ASHRAE/IES 90.1-2013	Energy Standard for Buildings Except Low-Rise Residential Buildings	NECB A-5.2.3.4.(2) NECB A-Table 3.2.2.2. CNÉB A-5.2.3.4. 2) CNÉB A-Tableau 3.2.2.2.
ASHRAE (American Society of Heating, Refrigerating and Air-Conditioning Engineers)/IES (Illuminating Engineering Society)	90.1-2013	User's Manual	NECB A-5.2.10.1.(4) NECB A-5.2.10.4.(5) NECB A-6.2.3.1.(1) CNÉB A-5.2.10.1. 4) CNÉB A-5.2.10.4. 5) CNÉB A-6.2.3.1. 1)
ASME (American Society of Mechanical Engineers)	BPVC-~~2017~~2023	Boiler and Pressure Vessel Code	NFC 4.3.1.3.(1) NFC 4.5.9.5.(2) NFC 4.5.9.6.(1) CNPI 4.3.1.3. 1) CNPI 4.5.9.5. 2) CNPI 4.5.9.6. 1)
ASME (American Society of Mechanical Engineers)	B16.12-2009	Cast Iron Threaded Drainage Fittings	NPC 2.2.6.3.(1) CNP 2.2.6.3. 1)
ASME (American Society of Mechanical Engineers)	B16.15-2018	Cast Copper Alloy Threaded Fittings: Classes 125 and 250	NPC 2.2.7.3.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.3. 1) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.18-2018	Cast Copper Alloy Solder-Joint Pressure Fittings	NPC 2.2.7.6.(1) NPC 2.2.7.6.(2) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.6. 1) CNP 2.2.7.6. 2) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.22-2018	Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings	NPC 2.2.7.6.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.6. 1) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.23-~~2016~~2021	Cast Copper Alloy Solder Joint Drainage Fittings: DWV	NPC 2.2.7.5.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.5. 1) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.24-~~2016~~2021	Cast Copper Alloy Pipe Flanges, Flanged Fittings, and Valves: Classes 150, 300, 600, 900, 1500, and 2500	NPC 2.2.7.2.(1) CNP 2.2.7.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASME (American Society of Mechanical Engineers)	B16.26-2018	Cast Copper Alloy Fittings for Flared Copper Tubes	NPC 2.2.7.7.(1) NPC 2.2.7.7.(2) CNP 2.2.7.7. 1) CNP 2.2.7.7. 2)
ASME (American Society of Mechanical Engineers)	B16.29-~~2017~~2022	Wrought Copper and Wrought Copper Alloy Solder-Joint Drainage Fittings – DWV	NPC 2.2.7.5.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.5. 1) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.3-2016	Malleable Iron Threaded Fittings: Classes 150 and 300	NPC 2.2.6.6.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.6.6. 1) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.4-2016	Gray Iron Threaded Fittings: Classes 125 and 250	NPC 2.2.6.5.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.6.5. 1) CNP A-2.2.5. à 2.2.8.
ASME (American Society of Mechanical Engineers)	B16.5-2017	Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch Standard	NFC 4.5.5.3.(1) CNPI 4.5.5.3. 1) NPC 2.2.6.12.(1) CNP 2.2.6.12. 1)
ASME (American Society of Mechanical Engineers)	B16.9-2018	Factory-Made Wrought Buttwelding Fittings	NPC 2.2.6.11.(1) NPC 2.2.6.14.(1) CNP 2.2.6.11. 1) CNP 2.2.6.14. 1)
ASME (American Society of Mechanical Engineers)	B18.6.1-1981	Wood Screws (Inch Series)	NBC 9.23.3.1.(3) NBC A-9.23.3.1.(3) NBC Table 5.9.1.1. CNB 9.23.3.1. 3) CNB A-9.23.3.1. 3) CNB Tableau 5.9.1.1.
ASME (American Society of Mechanical Engineers)	B31.3-~~2016~~2022	Process Piping	NFC 4.5.2.1.(5) CNPI 4.5.2.1. 5)
ASME (American Society of Mechanical Engineers)	B31.9-2017	Building Services Piping	NPC 2.3.2.8.(1) CNP 2.3.2.8. 1)
ASME (American Society of Mechanical Engineers)	B36.~~19M~~19-~~2018~~2022	**Welded and Seamless Wrought** Stainless Steel Pipe	NPC 2.2.6.10.(1) CNP 2.2.6.10. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.18.1-2018/CSA B125.1-18	Plumbing Supply Fittings	NPC 2.2.10.6.(1) NPC 2.2.10.7.(1) CNP 2.2.10.6. 1) CNP 2.2.10.7. 1) NECB 6.2.6.1.(1) NECB 6.2.6.2.(1) CNÉB 6.2.6.1. 1) CNÉB 6.2.6.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.18.2-2015/CSA B125.2-15	Plumbing Waste Fittings	NPC 2.2.10.6.(6) NPC 2.2.3.3.(1) CNP 2.2.10.6. 6) CNP 2.2.3.3. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.18.6-2017/CSA B125.6-17	Flexible water connectors	NPC 2.2.10.18.(1) CNP 2.2.10.18. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.19.1-~~2018~~2024/CSA B45.2-~~18~~:24	Enamelled ~~Cast~~cast ~~Iron~~iron and ~~Enamelled~~enamelled ~~Steel~~steel ~~Plumbing~~plumbing ~~Fixtures~~fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.19.2-2018/CSA B45.1-18	Ceramic Plumbing Fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.19.3-~~2017~~2022/CSA B45.4-~~17~~:22	Stainless ~~Steel~~steel ~~Plumbing~~plumbing ~~Fixtures~~fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.19.7-2012/CSA B45.10-12	Hydromassage Bathtub Systems	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.3.4-2018/CSA B45.9-18	Macerating Toilet Systems and Waste-Pumping Systems for Plumbing Fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.4.14-~~2017~~2022/CSA B125.14-~~17~~:22	Manually ~~Operated~~or ~~Valves~~automatically operated valves for ~~Use~~use in ~~Plumbing~~plumbing ~~Systems~~systems	NPC 2.2.10.6.(7) CNP 2.2.10.6. 7)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A112.4.2-~~2015~~2021/CSA B45.16-~~15~~:21	Personal hygiene devices for water closets	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME (American Society of Mechanical Engineers)/CSA (Canadian Standards Association)	ASME A17.1-~~2016~~2022/CSA B44-~~16~~22	Safety Code for Elevators and Escalators	NBC 3.2.6.7.(2) NBC 3.5.2.1.(1) NBC 3.5.2.1.(2) NBC 3.5.2.1.(3) NBC 3.5.4.1.(2) NBC 3.5.4.2.(1) NBC A-3.5.2.1.(1) NBC Table 4.1.5.11. NBC Table 4.1.8.18. NFC 7.2.2.1.(2)
ASME (American Society of Mechanical Engineers)/CSA (Association canadienne de normalisation/Canadian Standards Association)	ASME A17.1-~~2016~~2022/CSA B44-~~16~~22	Safety Code ~~de~~for ~~sécurité~~Elevators ~~sur~~and ~~les ascenseurs ou monte-charges et les escaliers mécaniques~~Escalators	CNB 3.2.6.7. 2) CNB 3.5.2.1. 1) CNB 3.5.2.1. 2) CNB 3.5.2.1. 3) CNB 3.5.4.1. 2) CNB 3.5.4.2. 1) CNB A-3.5.2.1. 1) CNB Tableau 4.1.5.11. CNB Tableau 4.1.8.18. CNPI 7.2.2.1. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
ASPE (American Society of Plumbing Engineers)	2010	Plumbing Engineering Design Handbook, Volume 2	NPC A-2.6.3.1.(2) CNP A-2.6.3.1. 2)
ASPE (American Society of Plumbing Engineers)	~~2012~~2016	Plumbing Engineering Design Handbook~~, Volume 4, Chapter 8, Grease Interceptors~~	NPC A-2.4.4.3.(1) CNP A-2.4.4.3. 1)
ASPE (American Society of Plumbing Engineers)/ANSI (American National Standards Institute)	63-2013	Rainwater Catchment Systems	NPC A-2.7.2.4.(1) CNP A-2.7.2.4. 1)
ASSE (American Society of Sanitary Engineering)	ANSI/ASSE 1010-2004	Water Hammer Arresters	NPC 2.2.10.15.(1) CNP 2.2.10.15. 1)
ASSE (American Society of Sanitary Engineering)	1051-2009	Individual and Branch Type Air Admittance Valves for Sanitary Drainage Systems	NPC 2.2.10.16.(1) CNP 2.2.10.16. 1)
ASSE (American Society of Sanitary Engineering)/CSA (Canadian Standards Association)	ASSE 1002-~~2015~~2020/ASME A112.1002-~~2015~~2020/CSA B125.12-~~15~~:20	Anti-siphon fill valves for water closet tanks	NPC 2.2.10.10.(2) CNP 2.2.10.10. 2)
ASSE (American Society of Sanitary Engineering)/CSA (Canadian Standards Association)	ASSE 1016-2017/ASME A112.1016-2017/CSA B125.16-17	Performance Requirements for Automatic Compensating Valves for Individual Showers and Tub/Shower Combinations	NPC 2.2.10.7.(1) NPC A-2.2.10.6.(3) CNP 2.2.10.7. 1) CNP A-2.2.10.6. 3)
ASSE (American Society of Sanitary Engineering)/CSA (Canadian Standards Association)	ASSE 1037-~~2015~~2020/ASME A112.1037-~~2015~~2020/CSA B125.37-~~15~~:20	Performance requirements for pressurized flushing devices for plumbing fixtures	NPC 2.2.10.8.(1) CNP 2.2.10.8. 1)
ASSE (American Society of Sanitary Engineering)/CSA (Canadian Standards Association)	ASSE 1070-~~2015~~2020/ASME A112.1070-~~2015~~2020/CSA B125.70-~~15~~:20	Performance requirements for water temperature limiting devices	NPC 2.2.10.7.(2) CNP 2.2.10.7. 2)
ASTM (American Society for Testing and Materials International)	A1008/A1008M-18	Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable	NBC 4.2.3.8.(1) CNB 4.2.3.8. 1)
ASTM (American Society for Testing and Materials International)	A1011/A1011M-18a	Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength	NBC 4.2.3.8.(1) CNB 4.2.3.8. 1)
ASTM (American Society for Testing and Materials International)	A123/A123M-17	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products	NBC Table 5.9.1.1. NBC Table 9.20.16.1. CNB Tableau 5.9.1.1. CNB Tableau 9.20.16.1.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	A153/A153M-16a	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware	NBC 9.23.2.4.(2) NBC Table 5.9.1.1. NBC Table 9.20.16.1. CNB 9.23.2.4. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.20.16.1.
ASTM (American Society for Testing and Materials International)	A182/A182M-19	Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service	NPC 2.2.6.12.(1) NPC 2.2.6.13.(1) CNP 2.2.6.12. 1) CNP 2.2.6.13. 1)
ASTM (American Society for Testing and Materials International)	A193/A193M-17	Standard Specification for Alloy-Steel and Stainless Steel Bolting for High Temperature or High Pressure Service and Other Special Purpose Applications	NFC 4.5.5.4.(1) CNPI 4.5.5.4. 1)
ASTM (American Society for Testing and Materials International)	A252-10	Standard Specification for Welded and Seamless Steel Pipe Piles	NBC 4.2.3.8.(1) CNB 4.2.3.8. 1)
ASTM (American Society for Testing and Materials International)	A269/A269M-15a	Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service	NPC 2.2.6.14.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.6.14. 1) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	A283/A283M-18	Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates	NBC 4.2.3.8.(1) CNB 4.2.3.8. 1)
ASTM (American Society for Testing and Materials International)	A312/A312M-18a	Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes	NPC 2.2.6.10.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.6.10. 1) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	A351/A351M-18	Standard Specification for Castings, Austenitic, for Pressure-Containing Parts	NPC 2.2.6.13.(1) CNP 2.2.6.13. 1)
ASTM (American Society for Testing and Materials International)	A390-06	Standard Specification for Zinc-Coated (Galvanized) Steel Poultry Fence Fabric (Hexagonal and Straight Line)	NBC Table 9.10.3.1.-B CNB Tableau 9.10.3.1.-B
ASTM (American Society for Testing and Materials International)	A403/A403M-~~19~~22b	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	NPC 2.2.6.11.(1) CNP 2.2.6.11. 1)
ASTM (American Society for Testing and Materials International)	A518/A518M-99	Standard Specification for Corrosion-Resistant High-Silicon Iron Castings	NPC 2.2.8.1.(1) CNP 2.2.8.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	A53/A53M-~~18~~22	Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless	NFC 4.5.2.1.(4) CNPI 4.5.2.1. 4) NPC 2.2.6.7.(4) NPC A-2.2.5. to 2.2.8. CNP 2.2.6.7. 4) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	A653/A653M-~~18~~22	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process	NBC 9.23.2.4.(1) NBC 9.3.3.2.(1) NBC Table 5.9.1.1. CNB 9.23.2.4. 1) CNB 9.3.3.2. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	A792/A792M-~~10~~22	Standard Specification for Steel Sheet, 55% Aluminum-Zinc Alloy-Coated by the Hot-Dip Process	NBC 9.3.3.2.(1) CNB 9.3.3.2. 1)
ASTM (American Society for Testing and Materials International)	B306-13	Standard Specification for Copper Drainage Tube (DWV)	NPC 2.2.7.4.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.4. 1) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	B32-08	Standard Specification for Solder Metal	NPC 2.2.9.2.(1) CNP 2.2.9.2. 1)
ASTM (American Society for Testing and Materials International)	B42-15a	Standard Specification for Seamless Copper Pipe, Standard Sizes	NPC 2.2.7.1.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.1. 1) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	B43-15	Standard Specification for Seamless Red Brass Pipe, Standard Sizes	NPC 2.2.7.1.(2) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.1. 2) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	B813-16	Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube	NPC 2.2.9.2.(3) CNP 2.2.9.2. 3)
ASTM (American Society for Testing and Materials International)	B828-16	Standard Specification for Making Capillary Joints by Soldering of Copper and Copper Alloy Tube and Fittings	NPC 2.3.2.4.(1) CNP 2.3.2.4. 1)
ASTM (American Society for Testing and Materials International)	B88-~~16~~22	Standard Specification for Seamless Copper Water Tube	NPC 2.2.7.4.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.7.4. 1) CNP A-2.2.5. à 2.2.8.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	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	NBC 9.24.1.4.(1) NBC 9.29.5.7.(1) NBC Table 5.9.1.1. CNB 9.24.1.4. 1) CNB 9.29.5.7. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1053-00	Standard Specification for Borosilicate Glass Pipe and Fittings for Drain, Waste, and Vent (DWV) Applications	NPC 2.2.8.1.(1) CNP 2.2.8.1. 1)
ASTM (American Society for Testing and Materials International)	C1055-03	Standard Guide for Heated System Surface Conditions that Produce Contact Burn Injuries	NBC A-6.5.1.1.(3) CNB A-6.5.1.1. 3)
ASTM (American Society for Testing and Materials International)	C1177/C1177M-17	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing	NBC 3.1.5.14.(6) NBC 3.1.5.15.(4) NBC A-9.27.14.2.(2)(a) NBC Table 5.9.1.1. NBC Table 9.23.17.2.A CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB A-9.27.14.2. 2)a) CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A
ASTM (American Society for Testing and Materials International)	C1178/C1178M-18	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel	NBC 3.1.5.14.(6) NBC 3.1.5.15.(4) NBC 9.29.5.2.(1) NBC Table 5.9.1.1. CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 9.29.5.2. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1184-18e1	Standard Specification for Structural Silicone Sealants	NBC 9.27.4.2.(2) NBC Table 5.9.1.1. CNB 9.27.4.2. 2) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1193-16	Standard Specification for Use of Joint Sealants	NBC A-9.27.4.2.(1) NBC A-Table 5.9.1.1. CNB A-9.27.4.2. 1) CNB A-Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C126-13	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	NBC 9.20.2.1.(1) NBC Table 5.9.1.1. CNB 9.20.2.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1280-13	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing	NBC Table 5.9.1.1. CNB Tableau 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	C1299-03	Standard Guide for Use in Selection of Liquid-Applied Sealants	NBC A-9.27.4.2.(1) CNB A-9.27.4.2. 1)
ASTM (American Society for Testing and Materials International)	C1311-14	Standard Specification for Solvent Release Sealants	NBC 9.27.4.2.(2) NBC Table 5.9.1.1. CNB 9.27.4.2. 2) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1330-18	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants	NBC 9.27.4.2.(3) NBC Table 5.9.1.1. CNB 9.27.4.2. 3) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1363-11	Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus	NBC 9.36.2.2.(4) NBC A-5.9.4.1.(1) CNB 9.36.2.2. 4) CNB A-5.9.4.1. 1) NECB 3.1.1.5.(4) NECB 3.1.1.5.(5) CNÉB 3.1.1.5. 4) CNÉB 3.1.1.5. 5)
ASTM (American Society for Testing and Materials International)	C1396/C1396M-17	Standard Specification for Gypsum Board	NBC 3.1.5.14.(6) NBC 3.1.5.15.(4) NBC 3.1.6.15.(1) NBC 3.1.6.6.(2) NBC 9.29.5.2.(1) NBC D-1.5.1. NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC Table 9.29.5.3. CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 3.1.6.15. 1) CNB 3.1.6.6. 2) CNB 9.29.5.2. 1) CNB D-1.5.1. CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB Tableau 9.29.5.3.
ASTM (American Society for Testing and Materials International)	C1472-16	Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width	NBC A-9.27.4.2.(1) NBC A-Table 5.9.1.1. CNB A-9.27.4.2. 1) CNB A-Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C1658/C1658M-18	Standard Specification for Glass Mat Gypsum Panels	NBC 3.1.5.14.(6) NBC Table 5.9.1.1. CNB 3.1.5.14. 6) CNB Tableau 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	C177-19	Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus	NBC 9.36.2.2.(1) CNB 9.36.2.2. 1) NECB 3.1.1.5.(1) CNÉB 3.1.1.5. 1)
ASTM (American Society for Testing and Materials International)	C212-17	Standard Specification for Structural Clay Facing Tile	NBC 9.20.2.1.(1) NBC Table 5.9.1.1. CNB 9.20.2.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C260/C260M-10a	Standard Specification for Air-Entraining Admixtures for Concrete	NBC 9.3.1.8.(1) CNB 9.3.1.8. 1)
ASTM (American Society for Testing and Materials International)	C27-98	Standard Classification of Fireclay and High-Alumina Refractory Brick	NBC 9.21.3.4.(1) CNB 9.21.3.4. 1)
ASTM (American Society for Testing and Materials International)	C330/C330M-17	Standard Specification for Lightweight Aggregates for Structural Concrete	NBC D-1.4.3. CNB D-1.4.3.
ASTM (American Society for Testing and Materials International)	C335/C335M-17	Standard Test Method for Steady-State Heat Transfer Properties of Pipe Insulation	NECB 5.2.5.3.(6) NECB 6.2.3.1.(4) CNÉB 5.2.5.3. 6) CNÉB 6.2.3.1. 4)
ASTM (American Society for Testing and Materials International)	C4-04	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile	NBC 9.14.3.1.(1) NBC Table 5.9.1.1. CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C411-19	Standard Specification for Hot-Surface Performance of High-Temperature Thermal Insulation	NBC 3.6.5.4.(4) NBC 3.6.5.5.(1) NBC 9.33.6.4.(4) NBC 9.33.8.2.(2) CNB 3.6.5.4. 4) CNB 3.6.5.5. 1) CNB 9.33.6.4. 4) CNB 9.33.8.2. 2)
ASTM (American Society for Testing and Materials International)	C412M-15	Standard Specification for Concrete Drain Tile	NBC 9.14.3.1.(1) NBC Table 5.9.1.1. CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C444M-17	Standard Specification for Perforated Concrete Pipe	NBC 9.14.3.1.(1) NBC Table 5.9.1.1. CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C494/C494M-~~17~~19e1	Standard Specification for Chemical Admixtures for Concrete	NBC 9.3.1.8.(1) CNB 9.3.1.8. 1)
ASTM (American Society for Testing and Materials International)	C516-08e1	Standard Specification for Vermiculite Loose Fill Thermal Insulation	NBC A-9.25.2.4.(5) CNB A-9.25.2.4. 5)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	C518-17	Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus	NBC 9.36.2.2.(1) CNB 9.36.2.2. 1) NECB 3.1.1.5.(1) CNÉB 3.1.1.5. 1)
ASTM (American Society for Testing and Materials International)	C553-13	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications	NBC Table 5.9.1.1. CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C612-14	Standard Specification for Mineral Fiber Block and Board Thermal Insulation	NBC Table 5.9.1.1. CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C700-18	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated	NBC 9.14.3.1.(1) NBC Table 5.9.1.1. CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C726-17	Standard Specification for Mineral Wool Roof Insulation Board	NBC 9.25.2.2.(1) NBC Table 5.9.1.1. CNB 9.25.2.2. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C73-17	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)	NBC 9.20.2.1.(1) NBC Table 5.9.1.1. CNB 9.20.2.1. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C754-18	Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products	NBC Table A-9.11.1.4.A NBC Table A-9.11.1.4.B NBC Table A-9.11.1.4.C NBC Table A-9.11.1.4.D CNB Tableau A-9.11.1.4.A CNB Tableau A-9.11.1.4.B CNB Tableau A-9.11.1.4.C CNB Tableau A-9.11.1.4.D
ASTM (American Society for Testing and Materials International)	C834-17	Standard Specification for Latex Sealants	NBC 9.27.4.2.(2) NBC Table 5.9.1.1. CNB 9.27.4.2. 2) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	C840-18b	Standard Specification for Application and Finishing of Gypsum Board	NBC 3.1.6.6.(2) NBC 9.29.5.1.(3) NBC A-9.29.5.1.(3) NBC D-2.3.9. NBC Table 5.9.1.1. CNB 3.1.6.6. 2) CNB 9.29.5.1. 3) CNB A-9.29.5.1. 3) CNB D-2.3.9. CNB Tableau 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	C920-18	Standard Specification for Elastomeric Joint Sealants	NBC 9.27.4.2.(2) NBC Table 5.9.1.1. CNB 9.27.4.2. 2) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	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	NBC 9.24.1.4.(1) CNB 9.24.1.4. 1)
ASTM (American Society for Testing and Materials International)	C991-16	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings	NBC Table 5.9.1.1. CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	D1037-12	Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials	NBC A-9.23.15.2.(4) CNB A-9.23.15.2. 4)
ASTM (American Society for Testing and Materials International)	D1143/D1143M-07	Standard Test Methods for Deep Foundations Under Static Axial Compressive Load	NBC A-4.2.7.2.(2) CNB A-4.2.7.2. 2)
ASTM (American Society for Testing and Materials International)	D1227/D1227M-13	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	NBC 9.13.2.2.(2) NBC 9.13.3.2.(2) NBC Table 5.9.1.1. CNB 9.13.2.2. 2) CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	D1761-12	Standard Test Methods for Mechanical Fasteners in Wood and Wood-Based Materials	NBC A-9.27.5.4.(2) CNB A-9.27.5.4. 2)
ASTM (American Society for Testing and Materials International)	D2178/D2178M-13a	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing	NBC Table 5.9.1.1. CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	D2466-17	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40	NPC 2.2.5.7.(2) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.7. 2) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	D2467-15	Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80	NPC 2.2.5.7.(2) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.7. 2) CNP A-2.2.5. à 2.2.8.

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ASTM (American Society for Testing and Materials International)	D2898-10	Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing	NBC 3.1.4.8.(3) NBC 3.1.5.24.(1) NBC 3.1.5.5.(3) NBC 3.1.6.9.(6) NBC 3.2.3.7.(4) NBC 9.10.14.5.(3) NBC 9.10.15.5.(3) NBC D-6.1.1. CNB 3.1.4.8. 3) CNB 3.1.5.24. 1) CNB 3.1.5.5. 3) CNB 3.1.6.9. 6) CNB 3.2.3.7. 4) CNB 9.10.14.5. 3) CNB 9.10.15.5. 3) CNB D-6.1.1.
ASTM (American Society for Testing and Materials International)	D3019/D3019M-17	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
ASTM (American Society for Testing and Materials International)	D3138-04	Standard Specification for Solvent Cements for Transition Joints Between Acrylonitrile-Butadiene-Styrene (ABS) and Poly(Vinyl Chloride) (PVC) Non-Pressure Piping Components	NPC A-2.2.5.9. to 2.2.5.11. CNP A-2.2.5.9. à 2.2.5.11.
ASTM (American Society for Testing and Materials International)	D323-15a	Standard Test Method for Vapor Pressure of Petroleum Products (Reid Method)	NBC 1.4.1.2.(1) of Division A CNB 1.4.1.2. 1) de la division A NFC 1.4.1.2.(1) of Division A CNPI 1.4.1.2. 1) de la division A
ASTM (American Society for Testing and Materials International)	D3261-16	Standard Specification for Butt Heat Fusion Polyethylene (PE) Plastic Fittings for Polyethylene (PE) Plastic Pipe and Tubing	NPC 2.2.5.4.(3) CNP 2.2.5.4. 3)
ASTM (American Society for Testing and Materials International)	D3278-96	Standard Test Methods for Flash Point of Liquids by Small Scale Closed-Cup Apparatus	NFC 4.1.3.1.(4) NFC A-4.1.3.1. CNPI 4.1.3.1. 4) CNPI A-4.1.3.1.
ASTM (American Society for Testing and Materials International)	D3679-17	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	NBC 9.27.12.1.(1) CNB 9.27.12.1. 1)
ASTM (American Society for Testing and Materials International)	D3828-16a	Standard Test Methods for Flash Point by Small Scale Closed Cup Tester	NFC 4.1.3.1.(3) CNPI 4.1.3.1. 3)
ASTM (American Society for Testing and Materials International)	D4359-90	Standard Test Method for Determining Whether a Material Is a Liquid or a Solid	NFC A-4.1.3.1. CNPI A-4.1.3.1.

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ASTM (American Society for Testing and Materials International)	D4477-16	Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit	NBC 9.27.12.1.(3) CNB 9.27.12.1. 3)
ASTM (American Society for Testing and Materials International)	D4479/D4479M-07e1	Standard Specification for Asphalt Roof Coatings – Asbestos-Free	NBC 9.13.2.2.(2) NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B CNB 9.13.2.2. 2) CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
ASTM (American Society for Testing and Materials International)	D4637/D4637M-15	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
ASTM (American Society for Testing and Materials International)	D4811/D4811M-16	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
ASTM (American Society for Testing and Materials International)	D5/D5M-19	Standard Test Method for Penetration of Bituminous Materials	NFC A-4.1.3.1. CNPI A-4.1.3.1.
ASTM (American Society for Testing and Materials International)	D5456-19	Standard Specification for Evaluation of Structural Composite Lumber Products	NBC 3.1.11.7.(5) CNB 3.1.11.7. 5)
ASTM (American Society for Testing and Materials International)	D56-~~16a~~-22	Standard Test Method for Flash Point by Tag Closed Cup Tester	NFC 4.1.3.1.(1) CNPI 4.1.3.1. 1)
ASTM (American Society for Testing and Materials International)	D6878/D6878M-11a	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
ASTM (American Society for Testing and Materials International)	D7254-17	Standard Specification for Polypropylene (PP) Siding	NBC 9.27.13.1.(1) CNB 9.27.13.1. 1)
ASTM (American Society for Testing and Materials International)	D7793-17	Standard Specification for Insulated Vinyl Siding	NBC 9.27.12.1.(2) CNB 9.27.12.1. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM (American Society for Testing and Materials International)	D8052/D8052M-~~17~~22	Standard Test Method for Quantification of Air Leakage in Low-Sloped Membrane Roof Assemblies	NBC A-5.4.1.2.(1) CNB A-5.4.1.2. 1)
ASTM (American Society for Testing and Materials International)	D92-18	Standard Test Method for Flash and Fire Points by Cleveland Open Cup Tester	NFC A-4.1.2.2. CNPI A-4.1.2.2.
ASTM (American Society for Testing and Materials International)	D93-18	Standard Test Methods for Flash Point by Pensky-Martens Closed Cup Tester	NFC 4.1.3.1.(2) CNPI 4.1.3.1. 2)
ASTM (American Society for Testing and Materials International)	E1007-19	Standard Test Method for Field Measurement of Tapping Machine Impact Sound Transmission Through Floor-Ceiling Assemblies and Associated Support Structures	NBC A-9.11. CNB A-9.11.
ASTM (American Society for Testing and Materials International)	E1105-15	Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference	NBC A-5.9.2.3.(1) NBC A-5.9.3.5.(2) CNB A-5.9.2.3. 1) CNB A-5.9.3.5. 2)
ASTM (American Society for Testing and Materials International)	E1186-17	Standard Practices for Air Leakage Site Detection in Building Envelopes and Air Barrier Systems	NBC A-5.4.1.2.(2) CNB A-5.4.1.2. 2)
ASTM (American Society for Testing and Materials International)	E1300-16	Standard Practice for Determining Load Resistance of Glass in Buildings	NBC 4.3.6.1.(1) NBC 9.6.1.3.(1) CNB 4.3.6.1. 1) CNB 9.6.1.3. 1)
ASTM (American Society for Testing and Materials International)	E2190-19	Standard Specification for Insulating Glass Unit Performance and Evaluation	NBC 9.6.1.2.(1) NBC Table 5.9.1.1. CNB 9.6.1.2. 1) CNB Tableau 5.9.1.1.
ASTM (American Society for Testing and Materials International)	E2307-15b	Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-storey Test Apparatus	NBC 3.1.8.3.(4) NBC 9.10.9.2.(4) NBC A-3.1.8.3.(2) CNB 3.1.8.3. 4) CNB 9.10.9.2. 4) CNB A-3.1.8.3. 2)
ASTM (American Society for Testing and Materials International)	E2357-18	Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies	NBC 9.36.2.9.(1) NBC A-5.4.1.1.(3) NBC A-9.36.2.9.(1) CNB 9.36.2.9. 1) CNB A-5.4.1.1. 3) CNB A-9.36.2.9. 1)

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ASTM (American Society for Testing and Materials International)	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	NBC 5.9.3.4.(2) NBC A-5.9.3.4.(2) CNB 5.9.3.4. 2) CNB A-5.9.3.4. 2) NECB 3.2.4.3.(3) NECB 3.2.4.3.(6) NECB 3.2.4.3.(7) NECB 3.2.4.3.(8) NECB 3.2.4.3.(9) CNÉB 3.2.4.3. 3) CNÉB 3.2.4.3. 6) CNÉB 3.2.4.3. 7) CNÉB 3.2.4.3. 8) CNÉB 3.2.4.3. 9)
ASTM (American Society for Testing and Materials International)	E3158-18	Standard Test Method for Measuring the Air Leakage Rate of a Large or Multizone Building	NECB 3.2.4.2.(1) CNÉB 3.2.4.2. 1)
ASTM (American Society for Testing and Materials International)	E330/E330M-14	Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference	NBC A-5.9.3.2.(1) CNB A-5.9.3.2. 1)
ASTM (American Society for Testing and Materials International)	E331-00	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference	NBC 5.9.3.5.(2) NBC A-5.9.3.5.(2) CNB 5.9.3.5. 2) CNB A-5.9.3.5. 2)
ASTM (American Society for Testing and Materials International)	E336-11	Standard Test Method for Measurement of Airborne Sound Attenuation between Rooms in Buildings	NBC 5.8.1.2.(2) NBC 5.8.1.4.(7) NBC 9.11.1.2.(2) NBC A-9.11. CNB 5.8.1.2. 2) CNB 5.8.1.4. 7) CNB 9.11.1.2. 2) CNB A-9.11.
ASTM (American Society for Testing and Materials International)	E413-16	Classification for Rating Sound Insulation	NBC 5.8.1.2.(1) NBC 5.8.1.2.(2) NBC 5.8.1.4.(7) NBC 5.8.1.5.(3) NBC 9.11.1.2.(1) NBC 9.11.1.2.(2) NBC A-1.4.1.2.(1) of Division A CNB 5.8.1.2. 1) CNB 5.8.1.2. 2) CNB 5.8.1.4. 7) CNB 5.8.1.5. 3) CNB 9.11.1.2. 1) CNB 9.11.1.2. 2) CNB A-1.4.1.2. 1) de la division A
ASTM (American Society for Testing and Materials International)	E492-~~09e1~~22	Standard Test Method for Laboratory Measurement of Impact Sound Transmission Through Floor-Ceiling Assemblies Using the Tapping Machine	NBC A-9.11. CNB A-9.11.

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ASTM (American Society for Testing and Materials International)	E547-00	Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference	NBC 5.9.3.5.(2) NBC A-5.9.3.5.(2) CNB 5.9.3.5. 2) CNB A-5.9.3.5. 2)
ASTM (American Society for Testing and Materials International)	E597-95	Practice for Determining a Single Number Rating of Airborne Sound Insulation for Use in Multi-Unit Building Specifications	NBC A-9.11. CNB A-9.11.
ASTM (American Society for Testing and Materials International)	E736/E736M-17	Standard Test Method for Cohesion/Adhesion of Sprayed Fire-Resistive Materials Applied to Structural Members	NBC Table 9.10.3.1.-B CNB Tableau 9.10.3.1.-B
ASTM (American Society for Testing and Materials International)	E779-10	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	NECB 8.4.2.9.(2) CNÉB 8.4.2.9. 2)
ASTM (American Society for Testing and Materials International)	E783-02	Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors	NBC A-5.4.1.2.(2) NBC A-5.9.2.3.(1) NBC A-5.9.3.4.(2) CNB A-5.4.1.2. 2) CNB A-5.9.2.3. 1) CNB A-5.9.3.4. 2)
ASTM (American Society for Testing and Materials International)	E90-09	Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements	NBC 5.8.1.2.(1) NBC 5.8.1.4.(1) NBC 9.11.1.2.(1) CNB 5.8.1.2. 1) CNB 5.8.1.4. 1) CNB 9.11.1.2. 1)
ASTM (American Society for Testing and Materials International)	E96/E96M-16	Standard Test Methods for Water Vapor Transmission of Materials	NBC 5.5.1.2.(3) NBC 9.13.2.2.(2) NBC 9.25.4.2.(1) NBC 9.25.4.2.(2) NBC 9.25.5.1.(1) NBC 9.30.1.2.(1) CNB 5.5.1.2. 3) CNB 9.13.2.2. 2) CNB 9.25.4.2. 1) CNB 9.25.4.2. 2) CNB 9.25.5.1. 1) CNB 9.30.1.2. 1)
ASTM (American Society for Testing and Materials International)	F1667-18a	Standard Specification for Driven Fasteners: Nails, Spikes, and Staples	NBC 9.23.3.1.(1) NBC 9.26.2.3.(1) NBC 9.29.5.6.(1) CNB 9.23.3.1. 1) CNB 9.26.2.3. 1) CNB 9.29.5.6. 1)
ASTM (American Society for Testing and Materials International)	F2090-17	Standard Specification for Window Fall Prevention Devices With Emergency Escape (Egress) Release Mechanisms	NBC A-9.8.8.1.(4) CNB A-9.8.8.1. 4)
ASTM (American Society for Testing and Materials International)	F3128-19	Standard Specification for Poly(Vinyl Chloride) (PVC) Schedule 40 Drain, Waste, and Vent Pipe with a Cellular Core	NPC 2.2.5.16.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.16. 1) CNP A-2.2.5. à 2.2.8.

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ASTM (American Society for Testing and Materials International)	F476-14	Standard Test Methods for Security of Swinging Door Assemblies	NBC 9.7.5.2.(2) NBC A-9.7.5.2.(2) CNB 9.7.5.2. 2) CNB A-9.7.5.2. 2)
ASTM (American Society for Testing and Materials International)	F628-12e2	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe With a Cellular Core	NPC 2.2.5.11.(1) NPC 2.2.5.9.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.11. 1) CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	F714-13	Standard Specification for Polyethylene (PE) Plastic Pipe (DR-PR) Based on Outside Diameter	NPC 2.2.5.5.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.5. 1) CNP A-2.2.5. à 2.2.8.
ASTM (American Society for Testing and Materials International)	G115-10	Standard Guide for Measuring and Reporting Friction Coefficients	NBC 4.1.8.18.(18) CNB 4.1.8.18. 18)
AWS (American Welding Society)	ANSI/AWS A5.8M/A5.8:**2011**2019	Specification for Filler Metals for Brazing and Braze Welding	NPC 2.2.9.2.(4) CNP 2.2.9.2. 4)
AWWA (American Water Works Association)	ANSI/AWWA C104/A21.4-13	Cement-Mortar Lining for Ductile-Iron Pipe and Fittings	NPC 2.2.6.4.(2) CNP 2.2.6.4. 2)
AWWA (American Water Works Association)	ANSI/AWWA C110/A21.10-12	Ductile-Iron and Gray-Iron Fittings	NPC 2.2.6.4.(3) CNP 2.2.6.4. 3)
AWWA (American Water Works Association)	ANSI/AWWA C111/A21.11-12	Rubber-Gasket Joints for Ductile-Iron Pressure Pipe and Fittings	NPC 2.2.6.4.(4) CNP 2.2.6.4. 4)
AWWA (American Water Works Association)	ANSI/AWWA C151/A21.51-09	Ductile-Iron Pipe, Centrifugally Cast	NPC 2.2.6.4.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.6.4. 1) CNP A-2.2.5. à 2.2.8.
AWWA (American Water Works Association)	ANSI/AWWA C228-08	Stainless-Steel Pipe Flanges for Water Service – Sizes 2 in. through 72 in. (50 mm through 1,800 mm)	NPC 2.2.6.12.(1) CNP 2.2.6.12. 1)
AWWA (American Water Works Association)	M14-2004	Recommended Practice for Backflow Prevention and Cross-Connection Control	NPC A-2.6.2.4.(2) CNP A-2.6.2.4. 2)
BC Hydro (BC Hydro and Power Authority)	2014	Building Envelope Thermal Bridging Guide	NECB A-3.1.1.5.(5)(a) CNÉB A-3.1.1.5. 5)a)
BNQ (Bureau de normalisation du Québec)	BNQ 3624-115/2016	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage	NBC 9.14.3.1.(1) NBC Table 5.9.1.1.
BNQ (Bureau de normalisation du Québec)	BNQ 3624-115/2016	Tuyaux et raccords en polyéthylène (PE) pour le drainage des sols et des fondations	CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1.
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 30620	Code national du bâtiment – Canada 1990	CNPI A-2.1.2.1. 1)

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CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 30630	Supplément du Code national du bâtiment du Canada 1990	CNB D-7.2. CNB D-7.3.
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 35952	Lignes directrices pour l'application aux bâtiments existants de la partie 3 du Code national du bâtiment du Canada	CNB A-1.1.1.1. 1) de la division A
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 38730F	Code modèle national de l'énergie pour les habitations – Canada 1997	CNB A-9.36.3.10. 1) CNB A-9.36.4.2. 1)
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 38732F	Code national de construction des bâtiments agricoles – Canada 1995	CNB 1.1.1.1. 3) de la division A CNB A-5.1.2.1. 1)
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 40383F	Guide de l'utilisateur – CNB 1995, Protection contre l'incendie, sécurité des occupants et accessibilité (Partie 3)	CNB A-1.1.1.1. 1) de la division A CNPI 7.1.1.2. 2) CNPI 7.2.3.1. 1) CNPI 7.2.3.3. 1) CNPI 7.3.10.1. 1) CNPI 7.3.11.1. 1) CNPI 7.3.12.1. 1) CNPI 7.3.13.1. 1) CNPI 7.3.14.1. 1) CNPI 7.3.15.1. 1) CNPI 7.3.2.1. 1) CNPI 7.3.3.1. 1) CNPI 7.3.4.1. 1) CNPI 7.3.5.1. 1) CNPI 7.3.6.1. 1) CNPI 7.3.7.1. 1) CNPI 7.3.8.1. 1) CNPI 7.3.9.1. 1)
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 43963F	Guide de l'utilisateur – CNB 1995, Application de la partie 9 aux bâtiments existants	CNB A-1.1.1.1. 1) de la division A
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 47666F	Code national du bâtiment – Canada 2005	CNPI A-2.1.3.1. 1)
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	CNRC 56190F	Code national du bâtiment – Canada 2015	CNB A-4.1.8.4. 3) CNB C
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 30619	National Building Code of Canada 1990	NFC A-2.1.2.1.(1)
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 30629	Supplement to the National Building Code of Canada 1990	NBC D-7.2. NBC D-7.3.
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 35951	Guidelines for Application of Part 3 of the National Building Code of Canada to Existing Buildings	NBC A-1.1.1.1.(1) of Division A

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CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 38730	Model National Energy Code of Canada for Houses 1997	NBC A-9.36.3.10.(1) NBC A-9.36.4.2.(2)
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 38732	National Farm Building Code of Canada 1995	NBC 1.1.1.1.(3) of Division A NBC A-5.1.2.1.(1)
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 40383	User's Guide – NBC 1995, Fire Protection, Occupant Safety and Accessibility (Part 3)	NBC A-1.1.1.1.(1) of Division A NFC 7.1.1.2.(2) NFC 7.2.3.1.(1) NFC 7.2.3.3.(1) NFC 7.3.10.1.(1) NFC 7.3.11.1.(1) NFC 7.3.12.1.(1) NFC 7.3.13.1.(1) NFC 7.3.14.1.(1) NFC 7.3.15.1.(1) NFC 7.3.2.1.(1) NFC 7.3.3.1.(1) NFC 7.3.4.1.(1) NFC 7.3.5.1.(1) NFC 7.3.6.1.(1) NFC 7.3.7.1.(1) NFC 7.3.8.1.(1) NFC 7.3.9.1.(1)
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 43963	User's Guide – NBC 1995, Application of Part 9 to Existing Buildings	NBC A-1.1.1.1.(1) of Division A
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 47666	National Building Code of Canada 2005	NFC A-2.1.3.1.(1)
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC 56190	National Building Code of Canada 2015	NBC A-4.1.8.4.(3) NBC C

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CCBFC (Canadian Commission on Building and Fire Codes)	NRCC-CONST-56435E	National Building Code of Canada 2020	NFC 1.3.3.2.(1) of Division A NFC 1.4.1.2.(1) of Division A NFC 2.1.2.1.(1) NFC 2.1.3.1.(1) NFC 2.1.3.2.(1) NFC 2.1.3.3.(1) NFC 2.1.3.4.(1) NFC 2.1.3.7.(1) NFC 2.10.1.1.(1) NFC 2.11.1.1.(1) NFC 2.13.2.1.(1) NFC 2.14.3.1.(1) NFC 2.14.3.2.(1) NFC 2.14.3.2.(2) NFC 2.2.1.1.(1) NFC 2.2.1.1.(2) NFC 2.2.1.1.(3) NFC 2.2.2.1.(1) NFC 2.2.2.1.(2) NFC 2.2.2.4.(2) NFC 2.2.3.1.(1) NFC 2.3.1.1.(1) NFC 2.3.1.2.(1) of Division C NFC 2.3.1.4.(1) NFC 2.4.1.2.(1) NFC 2.5.1.1.(1) NFC 2.6.1.1.(1) NFC 2.6.1.5.(1) NFC 2.6.1.9.(1) NFC 2.6.2.1.(1) NFC 2.7.1.1.(1) NFC 2.7.1.2.(1) NFC 2.7.1.4.(2) NFC 2.7.3.1.(1) NFC 2.8.1.1.(1) NFC 2.8.2.12.(2) NFC 2.8.2.2.(1) NFC 2.8.3.1.(1) NFC 2.8.3.2.(1) NFC 2.9.1.1.(1) NFC 2.9.3.6.(1) NFC 3.1.4.1.(1) NFC 3.2.4.2.(1) NFC 3.2.6.2.(1) NFC 3.2.7.12.(3) NFC 3.2.7.5.(6) NFC 3.2.7.5.(7) NFC 3.2.7.8.(1) NFC 3.2.8.2.(1) NFC 3.2.8.3.(1) NFC 3.2.9.2.(1) NFC 3.2.9.2.(2) NFC 3.2.9.2.(3) NFC 3.2.9.2.(4) NFC 3.2.9.2.(5) NFC 3.3.2.5.(1) NFC 4.1.7.1.(1) NFC 4.2.11.3.(1) NFC 4.2.12.1.(1) NFC 4.2.4.3.(2)

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			NFC 4.2.7.5.(2) NFC 4.2.9.5.(1) NFC 4.3.2.4.(2) NFC 4.3.3.2.(1) NFC 4.5.6.10.(2) NFC 4.5.8.2.(3) NFC 4.6.3.3.(2) NFC 4.6.3.3.(3) NFC 4.9.3.2.(1) NFC 5.1.3.1.(1) NFC 5.3.3.4.(1) NFC 5.5.2.2.(1) NFC 5.5.4.1.(1) NFC 5.5.4.2.(1) NFC 5.5.4.3.(1) NFC 5.5.4.4.(1) NFC 5.6.1.20.(1) NFC 5.6.1.6.(1) NFC 5.6.1.6.(2) NFC 5.6.1.8.(2) NFC 5.6.3.1.(1) NFC 5.6.3.4.(2) NFC 5.6.3.5.(1) NFC 5.6.3.7.(1) NFC 5.6.3.7.(3) NFC 5.6.3.8. NFC 5.6.4.1.(1) NFC 5.6.4.3.(1) NFC 5.6.4.3.(3) NFC 7.1.1.1.(1) NFC 7.1.1.2.(1) NFC 7.1.1.2.(2) NFC 7.1.1.4.(2) NFC A-1.1.1.1.(1) of Division A NFC A-1.4.1.2.(1) of Division A NFC A-2.1.3.1.(1) NFC A-2.1.3.4.(1) NFC A-2.2.1.1.(1) of Division A NFC A-2.7.1.3.(1) NFC A-2.7.1.4.(2) NFC A-2.7.3.1.(1) NFC A-2.8.1.2.(2) NFC A-2.9.3.5.(1) NFC A-3.2.1.1.(1) of Division A NFC A-3.2.2.3.(5) NFC A-3.2.7.12.(3) NFC A-3.2.7.9.(1) NFC A-3.2.9.2.(5) NFC A-4.1.7.1.(1) NFC A-4.2.7.5.(2) NFC A-5.6.1.2.(1) NFC A-5.6.1.4.(4) NFC A-5.6.1.6. NFC A-5.6.1.8. NFC A-6.1.1.2.(1) NPC 1.1.1.1.(3) of Division A NPC 1.4.1.2.(1) of Division A

Issuing Agency	Document Number	Title of Document	Code Reference
			NPC 2.1.3.1.(1) NPC 2.1.4.1.(1) NPC 2.2.5.11.(2) NPC 2.2.5.11.(3) NPC 2.2.6.7.(3) NPC 2.4.10.4.(1) NPC 2.4.3.1.(1) NPC A-2.2.1.1.(1) of Division A NPC A-2.2.5. to 2.2.8. NPC A-2.4.10. NPC A-2.4.10.4.(1) NPC A-3.2.1.1.(1) of Division A NECB 1.1.1.1.(1) of Division A NECB 1.1.1.3.(1) of Division A NECB 1.1.1.3.(2) of Division A NECB 1.4.1.2.(1) of Division A NECB 3.1.1.5.(1) NECB 5.2.1.1.(1) NECB 5.2.2.1.(1) NECB 5.2.2.8.(2) NECB 5.2.5.1.(1) NECB A-3.2.1.1.(1) of Division A NECB A-3.2.3.1.(3) NECB A-5.2.10.4.(1) NECB A-5.2.10.4.(5) NECB A-5.2.2.8.(2) NECB A-5.2.8.4.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	NRCC-CONST-56435F	Code national du bâtiment – Canada 2020	CNPI 1.3.3.2. 1) de la division A CNPI 1.4.1.2. 1) de la division A CNPI 2.1.2.1. 1) CNPI 2.1.3.1. 1) CNPI 2.1.3.2. 1) CNPI 2.1.3.3. 1) CNPI 2.1.3.4. 1) CNPI 2.1.3.7. 1) CNPI 2.10.1.1. 1) CNPI 2.11.1.1. 1) CNPI 2.13.2.1. 1) CNPI 2.14.3.1. 1) CNPI 2.14.3.2. 1) CNPI 2.14.3.2. 2) CNPI 2.2.1.1. 1) CNPI 2.2.1.1. 2) CNPI 2.2.1.1. 3) CNPI 2.2.2.1. 1) CNPI 2.2.2.1. 2) CNPI 2.2.2.4. 2) CNPI 2.2.3.1. 1) CNPI 2.3.1.1. 1) CNPI 2.3.1.2. 1) de la division C CNPI 2.3.1.4. 1) CNPI 2.4.1.2. 1) CNPI 2.5.1.1. 1) CNPI 2.6.1.1. 1) CNPI 2.6.1.5. 1) CNPI 2.6.1.9. 1) CNPI 2.6.2.1. 1) CNPI 2.7.1.1. 1) CNPI 2.7.1.2. 1) CNPI 2.7.1.4. 2) CNPI 2.7.3.1. 1) CNPI 2.8.1.1. 1) CNPI 2.8.2.12. 2) CNPI 2.8.2.2. 1) CNPI 2.8.3.1. 1) CNPI 2.8.3.2. 1) CNPI 2.9.1.1. 1) CNPI 2.9.3.6. 1) CNPI 3.1.4.1. 1) CNPI 3.2.4.2. 1) CNPI 3.2.6.2. 1) CNPI 3.2.7.12. 3) CNPI 3.2.7.5. 6) CNPI 3.2.7.5. 7) CNPI 3.2.7.8. 1) CNPI 3.2.8.2. 1) CNPI 3.2.8.3. 1) CNPI 3.2.9.2. 1) CNPI 3.2.9.2. 2) CNPI 3.2.9.2. 3) CNPI 3.2.9.2. 4) CNPI 3.2.9.2. 5) CNPI 3.3.2.5. 1) CNPI 4.1.7.1. 1) CNPI 4.2.11.3. 1) CNPI 4.2.12.1. 1) CNPI 4.2.4.3. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
			CNPI 4.2.7.5. 2) CNPI 4.2.9.5. 1) CNPI 4.3.2.4. 2) CNPI 4.3.3.2. 1) CNPI 4.5.6.10. 2) CNPI 4.5.8.2. 3) CNPI 4.6.3.3. 2) CNPI 4.6.3.3. 3) CNPI 4.9.3.2. 1) CNPI 5.1.3.1. 1) CNPI 5.3.3.4. 1) CNPI 5.5.2.2. 1) CNPI 5.5.4.1. 1) CNPI 5.5.4.2. 1) CNPI 5.5.4.3. 1) CNPI 5.5.4.4. 1) CNPI 5.6.1.20. 1) CNPI 5.6.1.6. 1) CNPI 5.6.1.6. 2) CNPI 5.6.1.8. 2) CNPI 5.6.3.1. 1) CNPI 5.6.3.4. 2) CNPI 5.6.3.5. 1) CNPI 5.6.3.7. 1) CNPI 5.6.3.7. 3) CNPI 5.6.3.8. CNPI 5.6.4.1. 1) CNPI 5.6.4.2. 1) CNPI 5.6.4.2. 3) CNPI 7.1.1.1. 1) CNPI 7.1.1.2. 1) CNPI 7.1.1.2. 2) CNPI 7.1.1.4. 2) CNPI A-1.1.1.1. 1) de la division A CNPI A-1.4.1.2. 1) de la division A CNPI A-2.1.3.1. 1) CNPI A-2.1.3.4. 1) CNPI A-2.2.1.1. 1) de la division A CNPI A-2.7.1.3. 1) CNPI A-2.7.1.4. 2) CNPI A-2.7.3.1. 1) CNPI A-2.8.1.2. 2) CNPI A-2.9.3.5. 1) CNPI A-3.2.1.1. 1) de la division A CNPI A-3.2.2.3. 5) CNPI A-3.2.7.12. 3) CNPI A-3.2.7.9. 1) CNPI A-3.2.9.2. 5) CNPI A-4.1.7.1. 1) CNPI A-4.2.7.5. 2) CNPI A-5.6.1.2. 1) CNPI A-5.6.1.4. 4) CNPI A-5.6.1.6. CNPI A-5.6.1.8. CNPI A-6.1.1.2. 1) CNP 1.1.1.1. 3) de la division A CNP 1.4.1.2. 1) de la division A

Issuing Agency	Document Number	Title of Document	Code Reference
			CNP 2.1.3.1. 1) CNP 2.1.4.1. 1) CNP 2.2.5.11. 2) CNP 2.2.5.11. 3) CNP 2.2.6.7. 3) CNP 2.4.10.4. 1) CNP 2.4.3.1. 1) CNP A-2.2.1.1. 1) de la division A CNP A-2.2.5. à 2.2.8. CNP A-2.4.10. CNP A-2.4.10.4. 1) CNP A-3.2.1.1. 1) de la division A CNÉB 1.1.1.1. 1) de la division A CNÉB 1.1.1.3. 1) de la division A CNÉB 1.1.1.3. 2) de la division A CNÉB 1.4.1.2. 1) de la division A CNÉB 3.1.1.5. 1) CNÉB 5.2.1.1. 1) CNÉB 5.2.2.1. 1) CNÉB 5.2.2.8. 2) CNÉB 5.2.5.1. 1) CNÉB A-3.2.1.1. 1) de la division A CNÉB A-3.2.3.1. 3) CNÉB A-5.2.10.4. 1) CNÉB A-5.2.10.4. 5) CNÉB A-5.2.2.8. 2) CNÉB A-5.2.8.4. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC-CONST-56436E	National Plumbing Code of Canada 2020	NBC 2.1.1.2.(4) of Division A NBC 5.6.2.2.(2) NBC 6.3.2.15.(10) NBC 6.3.2.15.(8) NBC 6.3.2.16.(6) NBC 7.1.2.1.(1) NBC 9.31.6.2.(1) NBC 9.36.3.11.(2) NBC 9.36.4.3.(2) NBC A-2.2.1.1.(1) of Division A NBC A-3.2.1.1.(1) of Division A NBC A-4.1.6.4.(3) NBC A-9.36.5.8.(5) NBC C NFC A-2.2.1.1.(1) of Division A NFC A-3.2.1.1.(1) of Division A NFC A-4.1.6.2.(2) NECB 6.2.1.1.(1) NECB A-3.2.1.1.(1) of Division A NECB A-5.2.10.4.(1) NECB A-6.2.6.1.(1) NECB A-8.4.4.20.(6) NECB A-8.4.4.20.(7)

Issuing Agency	Document Number	Title of Document	Code Reference
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	NRCC-CONST-56436F	Code national de la plomberie – Canada 2020	CNB 2.1.1.2. 4) de la division A CNB 5.6.2.2. 2) CNB 6.3.2.15. 10) CNB 6.3.2.15. 8) CNB 6.3.2.16. 6) CNB 7.1.2.1. 1) CNB 9.31.6.2. 1) CNB 9.36.3.11. 2) CNB 9.36.4.3. 2) CNB A-2.2.1.1. 1) de la division A CNB A-3.2.1.1. 1) de la division A CNB A-4.1.6.4. 3) CNB A-9.36.5.8. 5) CNB C CNPI A-2.2.1.1. 1) de la division A CNPI A-3.2.1.1. 1) de la division A CNPI A-4.1.6.2. 2) CNÉB 6.2.1.1. 1) CNÉB A-3.2.1.1. 1) de la division A CNÉB A-5.2.10.4. 1) CNÉB A-6.2.6.1. 1) CNÉB A-8.4.4.20. 7) CNÉB A-8.4.4.20. 6)

Issuing Agency	Document Number	Title of Document	Code Reference
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC-CONST-56437E	National Fire Code of Canada 2020	NBC 1.1.4.1.(1) NBC 1.4.1.2.(1) of Division A NBC 2.1.1.2.(4) of Division A NBC 2.2.4.3.(1) NBC 2.2.6.11.(1) NBC 2.2.8.1.(1) NBC 2.2.8.1.(4) NBC 2.2.8.7.(1) NBC 2.4.2.3.(4) NBC 3.1.13.1.(1) NBC 3.2.3.21.(1) NBC 3.2.5.16.(1) NBC 3.3.1.10.(1) NBC 3.3.1.2.(1) NBC 3.3.2.16.(1) NBC 3.3.2.3.(1) NBC 3.3.4.3.(4) NBC 3.3.5.2.(1) NBC 3.3.6.1.(1) NBC 3.3.6.3.(1) NBC 3.3.6.3.(2) NBC 3.3.6.4.(1) NBC 3.3.6.4.(2) NBC 3.3.6.6.(1) NBC 3.7.3.1.(1) NBC 6.3.4.2.(3) NBC 6.3.4.3.(1) NBC 6.3.4.4.(1) NBC 6.9.1.2.(1) NBC 8.1.1.1.(3) NBC 8.1.1.3.(1) NBC 9.10.20.4.(1) NBC 9.10.21.8.(1) NBC A-1.1.1.1.(1) of Division A NBC A-2.2.1.1.(1) of Division A NBC A-2.2.8.4.(1) NBC A-3.1.2.3.(1) NBC A-3.2.1.1.(1) of Division A NBC A-3.2.4.6.(2) NBC A-3.2.6. NBC A-3.2.7.8.(3) NBC A-3.3. NBC A-3.3.1.7.(1) NBC A-3.3.3.1.(1) NBC A-3.3.6.1.(1) NBC A-3.9.3.1.(1) NBC A-9.10.2.2. NPC 2.5.5.2. NPC A-2.2.1.1.(1) of Division A NPC A-3.2.1.1.(1) of Division A NECB 1.4.1.2.(1) of Division A NECB A-3.2.1.1.(1) of Division A

Issuing Agency	Document Number	Title of Document	Code Reference
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	NRCC-CONST-56437F	Code national de prévention des incendies – Canada 2020	CNB 1.1.4.1. 1) CNB 1.4.1.2. 1) de la division A CNB 2.1.1.2. 4) de la division A CNB 2.2.4.3. 1) CNB 2.2.6.11. 1) CNB 2.2.8.1. 1) CNB 2.2.8.1. 4) CNB 2.2.8.7. 1) CNB 2.4.2.3. 4) CNB 3.1.13.1. 1) CNB 3.2.3.21. 1) CNB 3.2.5.16. 1) CNB 3.3.1.10. 1) CNB 3.3.1.2. 1) CNB 3.3.2.16. 1) CNB 3.3.2.3. 1) CNB 3.3.4.3. 4) CNB 3.3.5.2. 1) CNB 3.3.6.1. 1) CNB 3.3.6.3. 1) CNB 3.3.6.3. 2) CNB 3.3.6.4. 1) CNB 3.3.6.4. 2) CNB 3.3.6.6. 1) CNB 3.7.3.1. 1) CNB 6.3.4.2. 3) CNB 6.3.4.3. 1) CNB 6.3.4.4. 1) CNB 6.9.1.2. 1) CNB 8.1.1.1. 3) CNB 8.1.1.3. 1) CNB 9.10.20.4. 1) CNB 9.10.21.8. 1) CNB A-1.1.1.1. 1) de la division A CNB A-2.2.1.1. 1) de la division A CNB A-2.2.8.4. 1) CNB A-3.1.2.3. 1) CNB A-3.2.1.1. 1) de la division A CNB A-3.2.4.6. 2) CNB A-3.2.6. CNB A-3.2.7.8. 3) CNB A-3.3. CNB A-3.3.1.7. 1) CNB A-3.3.3.1. 1) CNB A-3.3.6.1. 1) CNB A-3.9.3.1. 1) CNB A-9.10.2.2. CNP 2.5.5.2. CNP A-2.2.1.1. 1) de la division A CNP A-3.2.1.1. 1) de la division A CNÉB 1.4.1.2. 1) de la division A CNÉB A-3.2.1.1. 1) de la division A

Issuing Agency	Document Number	Title of Document	Code Reference
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC-CONST-56438E	National Energy Code of Canada for Buildings 2020	NBC 9.36.1.3.(1) NBC 9.36.1.3.(5) NBC 9.36.3.1.(2) NBC 9.36.4.1.(2) NBC 9.36.8.10.(2) NBC 9.36.8.9.(2) NBC A-2.1.1.2.(6) of Division A NBC A-2.2.1.1.(1) of Division A NBC A-2.2.8.1.(1) of Division C NBC A-3.2.1.1.(1) of Division A NBC A-5.4.1. NBC A-9.36.1.3. NBC A-9.36.2.4.(1) NBC A-9.36.3.10.(1) NBC A-9.36.4.2.(2) NBC A-9.36.5.2. NBC Table 9.36.3.10. NFC A-2.2.1.1.(1) of Division A NFC A-3.2.1.1.(1) of Division A NPC A-2.2.1.1.(1) of Division A NPC A-3.2.1.1.(1) of Division A
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	NRCC-CONST-56438F	Code national de l'énergie pour les bâtiments – Canada 2020	CNB 9.36.1.3. 1) CNB 9.36.1.3. 5) CNB 9.36.3.1. 2) CNB 9.36.4.1. 2) CNB 9.36.8.10. 2) CNB 9.36.8.9. 2) CNB A-2.1.1.2. 6) de la division A CNB A-2.2.1.1. 1) de la division A CNB A-2.2.8.1. 1) de la division C CNB A-3.2.1.1. 1) de la division A CNB A-5.4.1. CNB A-9.36.1.3. CNB A-9.36.2.4. 1) CNB A-9.36.3.10. 1) CNB A-9.36.4.2. 1) CNB A-9.36.5.2. CNB Tableau 9.36.3.10. CNPI A-2.2.1.1. 1) de la division A CNPI A-3.2.1.1. 1) de la division A CNP A-2.2.1.1. 1) de la division A CNP A-3.2.1.1. 1) de la division A

Issuing Agency	Document Number	Title of Document	Code Reference
CCBFC (Canadian Commission on Building and Fire Codes)	NRCC-CONST-56529E	Structural Commentaries (User's Guide – NBC 2020: Part 4 of Division B)	NBC A-1.1.1.1.(1) of Division A NBC A-2.3.1.1.(1) NBC A-2.3.4. NBC A-2.3.4.1.(1)(b) NBC A-4.1.1.3.(1) NBC A-4.1.1.3.(2) NBC A-4.1.2.1. NBC A-4.1.2.1.(1) NBC A-4.1.3. NBC A-4.1.3.2.(2) NBC A-4.1.3.2.(4) NBC A-4.1.3.2.(5) NBC A-4.1.3.3.(2) NBC A-4.1.3.4.(1) NBC A-4.1.3.5.(1) NBC A-4.1.3.5.(3) NBC A-4.1.3.6.(1) NBC A-4.1.3.6.(2) NBC A-4.1.3.6.(3) NBC A-4.1.3.6.(4) NBC A-4.1.5.17. NBC A-4.1.5.5. NBC A-4.1.5.8. NBC A-4.1.6.1.(1) NBC A-4.1.6.16. NBC A-4.1.6.2. NBC A-4.1.6.3.(2) NBC A-4.1.6.4.(1) NBC A-4.1.7.13. NBC A-4.1.7.2.(2) NBC A-4.1.7.3.(10) NBC A-4.1.7.3.(5)(c) NBC A-4.1.7.7.(2) NBC A-4.1.7.9.(1) NBC A-4.1.8.10.(10)(a) NBC A-4.1.8.10.(5) and (6) NBC A-4.1.8.10.(7) NBC A-4.1.8.10.(9) NBC A-4.1.8.11.(3) NBC A-4.1.8.12.(1)(a) NBC A-4.1.8.12.(1)(b) NBC A-4.1.8.12.(3) NBC A-4.1.8.12.(4)(a) NBC A-4.1.8.13.(4) NBC A-4.1.8.15.(1) NBC A-4.1.8.15.(3) NBC A-4.1.8.15.(4) NBC A-4.1.8.15.(5) NBC A-4.1.8.15.(6) NBC A-4.1.8.15.(7) NBC A-4.1.8.15.(8) NBC A-4.1.8.16.(1) NBC A-4.1.8.16.(10) NBC A-4.1.8.16.(4)

Issuing Agency	Document Number	Title of Document	Code Reference
			NBC A-4.1.8.16.(6)(a) NBC A-4.1.8.16.(7) NBC A-4.1.8.16.(8)(a) NBC A-4.1.8.17.(1) NBC A-4.1.8.18. NBC A-4.1.8.18.(13) and 4.4.3.1.(1) NBC A-4.1.8.18.(14) and (15) NBC A-4.1.8.18.(16) NBC A-4.1.8.18.(7)(e) NBC A-4.1.8.19.(3)(a) NBC A-4.1.8.19.(4) and 4.1.8.21.(5) NBC A-4.1.8.2.(1) NBC A-4.1.8.21.(4)(a) NBC A-4.1.8.3.(4) NBC A-4.1.8.3.(6) NBC A-4.1.8.3.(7)(b) and (c) NBC A-4.1.8.3.(8) NBC A-4.1.8.4.(2) and (3) NBC A-4.1.8.4.(3) NBC A-4.1.8.7.(1) NBC A-4.1.8.9.(4) NBC A-4.1.8.9.(5) NBC A-4.2.4.1.(3) NBC A-4.2.4.1.(5) NBC A-4.2.5.1.(1) NBC A-4.2.6.1.(1) NBC A-4.2.7.2.(1) NBC A-4.3.6.1.(1) NBC A-4.4.2.1.(1) NBC A-5.1.4.2. NBC A-5.2.2.2.(4) NBC A-Table 4.1.2.1. NBC A-Table 4.1.3.4. NBC A-Table 4.1.8.5.-A NBC A-Table 4.1.8.6. NBC Table C-3

Issuing Agency	Document Number	Title of Document	Code Reference
CCCBPI (Commission canadienne des codes du bâtiment et de prévention des incendies)	NRCC-CONST-56529F	Commentaires sur le calcul des structures (Guide de l'utilisateur – CNB 2020 : Partie 4 de la division B)	CNB A-1.1.1.1. 1) de la division A CNB A-2.3.1.1. 1) CNB A-2.3.4. CNB A-2.3.4.1. 1)b) CNB A-4.1.1.3. 1) CNB A-4.1.1.3. 2) CNB A-4.1.2.1. CNB A-4.1.2.1. 1) CNB A-4.1.3. CNB A-4.1.3.2. 2) CNB A-4.1.3.2. 4) CNB A-4.1.3.2. 5) CNB A-4.1.3.3. 2) CNB A-4.1.3.4. 1) CNB A-4.1.3.5. 1) CNB A-4.1.3.5. 3) CNB A-4.1.3.6. 2) CNB A-4.1.3.6. 1) CNB A-4.1.3.6. 3) CNB A-4.1.3.6. 4) CNB A-4.1.5.17. CNB A-4.1.5.5. CNB A-4.1.5.8. CNB A-4.1.6.1. 1) CNB A-4.1.6.16. CNB A-4.1.6.2. CNB A-4.1.6.3. 2) CNB A-4.1.6.4. 1) CNB A-4.1.7.13. CNB A-4.1.7.2. CNB A-4.1.7.3. 10) CNB A-4.1.7.3. 5)c) CNB A-4.1.7.7. 2) CNB A-4.1.7.9. 1) CNB A-4.1.8.10. 10)a) CNB A-4.1.8.10. 5) et 6) CNB A-4.1.8.10. 7) CNB A-4.1.8.10. 9) CNB A-4.1.8.11. 3) CNB A-4.1.8.12. 1)a) CNB A-4.1.8.12. 1)b) CNB A-4.1.8.12. 3) CNB A-4.1.8.12. 4)a) CNB A-4.1.8.13. 4) CNB A-4.1.8.15. 3) CNB A-4.1.8.15. 1) CNB A-4.1.8.15. 4) CNB A-4.1.8.15. 5) CNB A-4.1.8.15. 6) CNB A-4.1.8.15. 7) CNB A-4.1.8.15. 8) CNB A-4.1.8.16. 1) CNB A-4.1.8.16. 4) CNB A-4.1.8.16. 10) CNB A-4.1.8.16. 6)a)

Issuing Agency	Document Number	Title of Document	Code Reference
			CNB A-4.1.8.16. 7) CNB A-4.1.8.16. 8)a) CNB A-4.1.8.17. 1) CNB A-4.1.8.18. CNB A-4.1.8.18. 14) et 15) CNB A-4.1.8.18. 16) CNB A-4.1.8.18. 13) et 4.4.3.1. 1) CNB A-4.1.8.18. 7)e) CNB A-4.1.8.19. 3)a) CNB A-4.1.8.19. 4) et 4.1.8.21. 5) CNB A-4.1.8.2. 1) CNB A-4.1.8.21. 4)a) CNB A-4.1.8.3. 4) CNB A-4.1.8.3. 6) CNB A-4.1.8.3. 7)b) et c) CNB A-4.1.8.3. 8) CNB A-4.1.8.4. 2) et 3) CNB A-4.1.8.4. 3) CNB A-4.1.8.7. 1) CNB A-4.1.8.9. 4) CNB A-4.1.8.9. 5) CNB A-4.2.4.1. 3) CNB A-4.2.4.1. 5) CNB A-4.2.5.1. 1) CNB A-4.2.6.1. 1) CNB A-4.2.7.2. 1) CNB A-4.3.6.1. 1) CNB A-4.4.2.1. 1) CNB A-5.1.4.2. CNB A-5.2.2.2. 4) CNB A-Tableau 4.1.2.1. CNB A-Tableau 4.1.3.4. CNB A-Tableau 4.1.8.5.-A CNB A-Tableau 4.1.8.6. CNB Tableau C-3
CCME (Canadian Council of Ministers of the Environment)	PN 1326 (2003)	Environmental Code of Practice for Aboveground and Underground Storage Tank Systems Containing Petroleum and Allied Petroleum Products	NFC A-4.3.16.1.(1) NFC A-4.4.2.1.(3)
CCME (Conseil canadien des ministres de l'environnement)	PN 1327 (2003)	Code de recommandations techniques pour la protection de l'environnement applicable aux systèmes de stockage hors sol et souterrains de produits pétroliers et de produits apparentés	CNPI A-4.3.16.1. 1) CNPI A-4.4.2.1. 3)

Issuing Agency	Document Number	Title of Document	Code Reference
CFA (Canadian Fuels Association)	1990	Using the Canadian Fuels Colour-Symbol System to Mark Equipment and Vehicles For Product Identification	NFC 4.3.1.7.(1) NFC 4.5.4.1.(3) NFC 4.5.7.6.(1)
ACC (Association canadienne des carburants)	1990	Système d'encodage par couleurs pour identifier les produits pétroliers contenus dans le matériel ou les véhicules	CNPI 4.3.1.7. 1) CNPI 4.5.4.1. 3) CNPI 4.5.7.6. 1)
CGA (Compressed Gas Association)	P-1 (2008)	Standard for Safe Handling of Compressed Gases in Containers	NFC A-3.1.1.4.(1)(a) CNPI A-3.1.1.4. 1)a)
CGSB (Canadian General Standards Board)	CAN/CGSB-10.3-92	Air Setting Refractory Mortar	NBC 9.21.3.4.(2) NBC 9.21.3.9.(1) NBC 9.22.2.2.(2)
ONGC (Office des normes générales du Canada)	CAN/CGSB-10.3-92	Mortier réfractaire durcissant à l'air	CNB 9.21.3.4. 2) CNB 9.21.3.9. 1) CNB 9.22.2.2. 2)
CGSB (Canadian General Standards Board)	CAN/CGSB-11.3-M87	Hardboard	NBC 9.29.7.1.(1) NBC 9.30.2.2.(1) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-11.3-M87	Panneaux de fibres durs	CNB 9.29.7.1. 1) CNB 9.30.2.2. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-12.10-M76	Glass, Light and Heat Reflecting	NBC 9.6.1.2.(1)
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.10-M76	Verre réflecteur de lumière et de chaleur	CNB 9.6.1.2. 1)
CGSB (Canadian General Standards Board)	CAN/CGSB-12.11-M90	Wired Safety Glass	NBC 3.3.1.20.(3) NBC 3.4.6.15.(1) NBC 3.4.6.15.(3) NBC 9.6.1.2.(1) NBC 9.6.1.4.(1) NBC 9.8.8.7.(1)
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.11-M90	Verre de sécurité armé	CNB 3.3.1.20. 3) CNB 3.4.6.15. 1) CNB 3.4.6.15. 3) CNB 9.6.1.2. 1) CNB 9.6.1.4. 1) CNB 9.8.8.7. 1)
CGSB (Canadian General Standards Board)	CAN/CGSB-12.1-2017	Safety Glazing	NBC 3.3.1.20.(3) NBC 3.3.2.17.(1) NBC 3.3.2.17.(2) NBC 3.4.6.15.(1) NBC 3.4.6.15.(3) NBC 3.7.2.4.(1) NBC 9.6.1.2.(1) NBC 9.6.1.4.(1) NBC 9.6.1.4.(6) NBC 9.8.8.7.(1) NBC Table 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.1-2017	Vitrage de sécurité	CNB 3.3.1.20. 3) CNB 3.3.2.17. 1) CNB 3.3.2.17. 2) CNB 3.4.6.15. 1) CNB 3.4.6.15. 3) CNB 3.7.2.4. 1) CNB 9.6.1.2. 1) CNB 9.6.1.4. 1) CNB 9.6.1.4. 6) CNB 9.8.8.7. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-12.2-M91	Flat, Clear Sheet Glass	NBC 9.6.1.2.(1) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.2-M91	Verre à vitres plat et clair	CNB 9.6.1.2. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-12.20-M89	Structural Design of Glass for Buildings	NBC 4.3.6.1.(1) NBC 9.6.1.3.(1) NBC A-9.6.1.3.(2)
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.20-M89	Règles de calcul du verre à vitre pour le bâtiment	CNB 4.3.6.1. 1) CNB 9.6.1.3. 1) CNB A-9.6.1.3. 2)
CGSB (Canadian General Standards Board)	CAN/CGSB-12.3-M91	Flat, Clear Float Glass	NBC 9.6.1.2.(1) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.3-M91	Verre flotté, plat et clair	CNB 9.6.1.2. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-12.4-M91	Heat Absorbing Glass	NBC 9.6.1.2.(1) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.4-M91	Verre athermane	CNB 9.6.1.2. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-12.8-97	Insulating glass units	NBC 9.6.1.2.(1) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.8-97	Vitrages isolants	CNB 9.6.1.2. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-12.9-M91	Spandrel glass	NBC 9.6.1.2.(1) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-12.9-M91	Verre de tympan	CNB 9.6.1.2. 1) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-149.10-~~2019~~2024	Determination of the airtightness of building envelopes by the fan depressurization method	NBC 9.36.6.3.(1) NBC 9.36.6.3.(2)
ONGC (Office des normes générales du Canada)	CAN/CGSB-149.10-~~2019~~2024	Détermination de l'étanchéité à l'air des enveloppes de bâtiment par la méthode de dépressurisation au moyen d'un ventilateur	CNB 9.36.6.3. 1) CNB 9.36.6.3. 2)
CGSB (Canadian General Standards Board)	CAN/CGSB-1.501-M89	Method for Permeance of Coated Wallboard	NBC 5.5.1.2.(2) NBC 9.25.4.2.(7)

Issuing Agency	Document Number	Title of Document	Code Reference
ONGC (Office des normes générales du Canada)	CAN/CGSB-1.501-M89	Méthode de détermination de la perméance des panneaux muraux revêtus	CNB 5.5.1.2. 2) CNB 9.25.4.2. 7)
CGSB (Canadian General Standards Board)	CAN/CGSB-19.22-M89	Mildew-Resistant Sealing Compound for Tubs and Tiles	NBC 9.29.10.5.(1)
ONGC (Office des normes générales du Canada)	CAN/CGSB-19.22-M89	Mastic d'étanchéité, résistant à la moisissure, pour baignoires et carreaux	CNB 9.29.10.5. 1)
CGSB (Canadian General Standards Board)	CAN/CGSB-37.50-M89	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
ONGC (Office des normes générales du Canada)	CAN/CGSB-37.50-M89	Bitume caoutchouté, appliqué à chaud, pour le revêtement des toitures et l'imperméabilisation à l'eau	CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CGSB (Canadian General Standards Board)	CAN/CGSB-37.51-M90	Application for Hot-Applied Rubberized Asphalt for Roofing and Waterproofing	NBC 9.26.15.1.(1)
ONGC (Office des normes générales du Canada)	CAN/CGSB-37.51-M90	Application à chaud du bitume caoutchouté pour le revêtement des toitures et pour l'imperméabilisation à l'eau	CNB 9.26.15.1. 1)
CGSB (Canadian General Standards Board)	CAN/CGSB-37.54-95	Polyvinyl Chloride Roofing and Waterproofing Membrane	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
ONGC (Office des normes générales du Canada)	CAN/CGSB-37.54-95	Membrane de poly(chlorure de vinyle) pour le revêtement de toitures et l'imperméabilisation à l'eau	CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CGSB (Canadian General Standards Board)	CAN/CGSB-37.58-M86	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
ONGC (Office des normes générales du Canada)	CAN/CGSB-37.58-M86	Membrane d'élastomère obtenue par liquide appliqué à froid, pour l'utilisation protégée dans le revêtement des toitures et l'imperméabilisation	CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CGSB (Canadian General Standards Board)	CAN/CGSB-41.24-95	Rigid Vinyl Siding, Soffits and Fascia	NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-41.24-95	Bardages, soffites et bordures de toit en vinyle rigide	CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-4.129-93	Carpet for Commercial Use	NBC D-3.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-4.129-93	Tapis pour utilisation commerciale	CNB D-3.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-51.25-M87	Thermal Insulation, Phenolic, Faced	NBC 9.25.2.2.(1) NBC Table 9.23.17.2.A

Issuing Agency	Document Number	Title of Document	Code Reference
ONGC (Office des normes générales du Canada)	CAN/CGSB-51.25-M87	Isolant thermique phénolique, avec revêtement	CNB 9.25.2.2. 1) CNB Tableau 9.23.17.2.A
CGSB (Canadian General Standards Board)	CAN/CGSB-51.32-M77	Sheathing, Membrane, Breather Type	NBC 9.20.13.9.(1) NBC 9.27.3.2.(1) NBC Table 5.9.1.1. NBC Table 9.26.2.1.A
ONGC (Office des normes générales du Canada)	CAN/CGSB-51.32-M77	Membrane de revêtement, perméable à la vapeur d'eau	CNB 9.20.13.9. 1) CNB 9.27.3.2. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.A
CGSB (Canadian General Standards Board)	CAN/CGSB-51.33-M89	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction	NBC 9.25.4.2.(5) NBC A-9.25.4.2.(6) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-51.33-M89	Pare-vapeur en feuille, sauf en polyéthylène, pour bâtiments	CNB 9.25.4.2. 5) CNB A-9.25.4.2. 6) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-51.34-M86	Vapour Barrier, Polyethylene Sheet for Use in Building Construction	NBC 9.13.2.2.(2) NBC 9.18.6.2.(1) NBC 9.25.3.2.(2) NBC 9.25.3.6.(1) NBC 9.25.4.2.(4) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-51.34-M86	Pare-vapeur en feuille de polyéthylène pour bâtiments	CNB 9.13.2.2. 2) CNB 9.18.6.2. 1) CNB 9.25.3.2. 2) CNB 9.25.3.6. 1) CNB 9.25.4.2. 4) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-51.71-2005	Depressurization Test	NBC 9.32.3.8.(7)
ONGC (Office des normes générales du Canada)	CAN/CGSB-51.71-2005	Essai de dépressurisation	CNB 9.32.3.8. 7)
CGSB (Canadian General Standards Board)	CAN/CGSB-71.26-M88	Adhesive for Field-Gluing Plywood to Lumber Framing for Floor Systems	NBC A-9.23.4.2.(2) NBC Table A-9.23.4.2.(2)C
ONGC (Office des normes générales du Canada)	CAN/CGSB-71.26-M88	Adhésif pour coller sur le chantier des contreplaqués à l'ossature en bois de construction des planchers	CNB A-9.23.4.2. 2) CNB Tableau A-9.23.4.2. 2)C
CGSB (Canadian General Standards Board)	CAN/CGSB-7.2-94	Adjustable Steel Columns	NBC 9.17.3.4.(1) NBC A-9.17.3.4.
ONGC (Office des normes générales du Canada)	CAN/CGSB-7.2-94	Poteaux d'acier réglables	CNB 9.17.3.4. 1) CNB A-9.17.3.4.
CGSB (Canadian General Standards Board)	CAN/CGSB-82.6-M86	Doors, Mirrored Glass, Sliding or Folding, Wardrobe	NBC 9.6.1.2.(2) NBC A-9.6.1.2.(2)
ONGC (Office des normes générales du Canada)	CAN/CGSB-82.6-M86	Portes-miroirs coulissantes ou pliantes pour placards	CNB 9.6.1.2. 2) CNB A-9.6.1.2. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
CGSB (Canadian General Standards Board)	CAN/CGSB-92.2-M90	Trowel or Spray Applied Acoustical Material	NBC D-2.3.4.
ONGC (Office des normes générales du Canada)	CAN/CGSB-92.2-M90	Matières acoustiques appliquées à la truelle ou au vaporisateur	CNB D-2.3.4.
CGSB (Canadian General Standards Board)	CAN/CGSB-93.1-M85	Sheet, Aluminum Alloy, Prefinished, Residential	NBC 9.27.11.1.(3) NBC A-9.27.11.1.(2) and (3) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-93.1-M85	Tôle d'alliage d'aluminium préfinie, pour bâtiments résidentiels	CNB 9.27.11.1. 3) CNB A-9.27.11.1. 2) et 3) CNB Tableau 5.9.1.1.
CGSB (Canadian General Standards Board)	CAN/CGSB-93.2-M91	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use	NBC 3.2.3.6.(5) NBC 9.10.14.5.(12) NBC 9.10.14.5.(8) NBC 9.10.15.5.(11) NBC 9.10.15.5.(7) NBC 9.27.11.1.(2) NBC A-9.27.11.1.(2) and (3) NBC Table 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN/CGSB-93.2-M91	Bardage, soffites et bordures de toit en aluminium préfini pour bâtiments résidentiels	CNB 3.2.3.6. 5) CNB 9.10.14.5. 12) CNB 9.10.14.5. 8) CNB 9.10.15.5. 11) CNB 9.10.15.5. 7) CNB 9.27.11.1. 2) CNB A-9.27.11.1. 2) et 3) CNB Tableau 5.9.1.1.
ONGC (Office des normes générales du Canada)	CAN2-4.162-FM80 (anciennement CAN/CGSB-4.162-M80)	Textiles utilisés dans les hôpitaux – Exigences de résistance à l'inflammabilité	CNPI 2.3.2.3. 1)
CGSB (Canadian General Standards Board)	CAN2-4.162-M80 (formerly CAN/CGSB-4.162-M80)	Hospital Textiles – Flammability Performance Requirements	NFC 2.3.2.3.(1)
CGSB (Canadian General Standards Board)	37-GP-55M-1979	Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane	NBC 9.26.16.1.(1)
ONGC (Office des normes générales du Canada)	37-GP-55M-1979	Application de la membrane en feuilles souples de poly(chlorure de vinyle) pour le revêtement des toitures	CNB 9.26.16.1. 1)
CGSB (Canadian General Standards Board)	37-GP-56M-1985	Membrane, Modified, Bituminous, Prefabricated, and Reinforced for Roofing	NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B
ONGC (Office des normes générales du Canada)	37-GP-56M-1985	Membrane bitumineuse modifiée, préfabriquée et renforcée, pour le revêtement des toitures	CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B

Issuing Agency	Document Number	Title of Document	Code Reference
CGSB (Canadian General Standards Board)	37-GP-9Ma-1983	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.A
ONGC (Office des normes générales du Canada)	37-GP-9Ma-1983	Bitume non fillerisé pour couche de base des revêtements de toitures et pour l'imperméabilisation à l'humidité et à l'eau	CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.A
CGSB (Canadian General Standards Board)	4-GP-36M-1978	Carpet Underlay, Fiber Type	NBC D-3.1.1.
ONGC (Office des normes générales du Canada)	4-GP-36M-1978	Thibaude, type fibre	CNB D-3.1.1.
CGSB (Canadian General Standards Board)	51-GP-27M-1979	Thermal Insulation, Polystyrene, Loose Fill	NBC 9.25.2.2.(1)
ONGC (Office des normes générales du Canada)	51-GP-27M-1979	Isolant thermique, polystyrène, à bourrage lâche	CNB 9.25.2.2. 1)
CISC (Canadian Institute of Steel Construction)	2018	Crane-Supporting Steel Structures: Design Guide (Third Edition)	NBC A-4.1.3.2.(2) CNB A-4.1.3.2. 2)
CMHC (Canada Mortgage and Housing Corporation)	1988	Air Permeance of Building Materials	NBC Table A-9.25.5.1.(1)
SCHL (Société canadienne d'hypothèques et de logement)	1988	Perméance des matériaux de construction à l'air	CNB Tableau A-9.25.5.1. 1)
CMHC (Canada Mortgage and Housing Corporation)	1993	Testing of Fresh Air Mixing Devices	NBC A-9.32.3.4.
SCHL (Société canadienne d'hypothèques et de logement)	1993	Essais de mélangeurs d'air frais	CNB A-9.32.3.4.
CCSN (Commission canadienne de sûreté nucléaire [remplace la Commission de contrôle de l'énergie atomique])	L.C. 1997, ch. 9	Loi sur la sûreté et la réglementation nucléaires	CNPI 3.1.1.2. 1)
CNSC (Canadian Nuclear Safety Commission (formerly AECB – Atomic Energy Control Board))	S.C. 1997, c. 9	Nuclear Safety and Control Act	NFC 3.1.1.2.(1)
CSA (Canadian Standards Association)	AAMA/WDMA/CSA 101/I.S.2/A440-~~17~~:22	North American Fenestration Standard/Specification for windows, doors, and skylights	NBC 5.9.2.2.(1) NBC 9.36.2.9.(3) NBC 9.7.4.1.(1) NBC 9.7.4.2.(1) NBC 9.7.5.1.(1) NBC 9.7.5.3.(1) NBC A-5.3.1.2. NBC A-5.9.2.3.(1) NBC A-5.9.3.1.(1) NBC A-9.7.4.2.(1) NBC Table 9.7.3.3. NECB 3.2.4.3.(4) NECB 3.2.4.3.(5)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Association canadienne de normalisation/Canadian Standards Association)	AAMA/WDMA/CSA 101/I.S.2/A440~~-17~~:22	Norme nord-américaine sur les fenêtres/Spécification relative aux fenêtres, aux portes et aux lanterneaux	CNB 5.9.2.2. 1) CNB 9.36.2.9. 3) CNB 9.7.4.1. 1) CNB 9.7.4.2. 1) CNB 9.7.5.1. 1) CNB 9.7.5.3. 1) CNB A-5.3.1.2. CNB A-5.9.2.3. 1) CNB A-5.9.3.1. 1) CNB A-9.7.4.2. 1) CNB Tableau 9.7.3.3. CNÉB 3.2.4.3. 4) CNÉB 3.2.4.3. 5)
CSA (Canadian Standards Association)	CSA/ANSI/~~CSA-~~ B149.6~~-15~~:20	Code for digester gas, landfill gas, and biogas generation and utilization	NBC 2.2.8.1.(3)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CSA/ANSI/~~CSA-~~ B149.6~~-15~~:20	Code ~~visant~~sur la production et l'utilisation des gaz de digestion, des gaz d'enfouissement et des biogaz	CNB 2.2.8.1. 3)
CSA (Canadian Standards Association)	A123.17-05	Asphalt Glass Felt Used in Roofing and Waterproofing	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	A123.22-08	Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection	NBC Table 9.26.2.1.B CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	A123.23-15	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	A123.23-15	Spécification de produit pour les feuilles en bitume modifié par polymère, préfabriquées et armées	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	A123.3-05	Asphalt Saturated Organic Roofing Felt	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	A123.3-05	Feutre organique à toiture imprégné à coeur de bitume	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	A123.51-14	Asphalt shingle application on roof slopes 1:6 and steeper	NBC 9.26.1.3.(1) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A123.51-14	Pose de bardeaux d'asphalte sur des pentes de toit de 1:6 et plus	CNB 9.26.1.3. 1) CNB Tableau 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	A123.5:16	Asphalt shingles made from glass felt and surfaced with mineral granules	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	A123.5:16	Bardeaux d'asphalte en feutre de fibres de verre et à surfaçage minéral	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	A165.1-14	Concrete block masonry units	NBC 9.15.2.2.(1) NBC 9.17.5.1.(1) NBC 9.20.2.1.(1) NBC 9.20.2.6.(1) NBC D-2.1.1. NBC Table 5.9.1.1. NBC Table A-9.11.1.4.A NBC Table A-9.11.1.4.C
CSA (Association canadienne de normalisation/Canadian Standards Association)	A165.1-14	Éléments de maçonnerie en bloc de béton	CNB 9.15.2.2. 1) CNB 9.17.5.1. 1) CNB 9.20.2.1. 1) CNB 9.20.2.6. 1) CNB D-2.1.1. CNB Tableau 5.9.1.1. CNB Tableau A-9.11.1.4.A CNB Tableau A-9.11.1.4.C
CSA (Canadian Standards Association)	A165.2-14	Concrete Brick Masonry Units	NBC 9.20.2.1.(1) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A165.2-14	Briques en béton	CNB 9.20.2.1. 1) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	A165.3-14	Prefaced concrete masonry units	NBC 9.20.2.1.(1) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A165.3-14	Éléments de maçonnerie en béton glacés	CNB 9.20.2.1. 1) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	A23.1:~~19~~24	Concrete materials and methods of concrete construction	NBC 2.3.2.5.(5) NBC 4.2.3.6.(1) NBC 4.2.3.9.(1) NBC 9.3.1.1.(1) NBC 9.3.1.1.(4) NBC 9.3.1.3.(1) NBC 9.3.1.4.(1) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A23.1:~~19~~24	~~Béton : constituants~~Concrete ~~et~~materials ~~exécution~~and ~~des~~methods ~~travaux~~of concrete construction	CNB 2.3.2.5. 5) CNB 4.2.3.6. 1) CNB 4.2.3.9. 1) CNB 9.3.1.1. 1) CNB 9.3.1.1. 4) CNB 9.3.1.3. 1) CNB 9.3.1.4. 1) CNB Tableau 5.9.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	A23.1:~~19~~24/A23.2:~~19~~24	Concrete materials and methods of concrete construction/Test methods and standard practices for concrete	NBC D-1.4.3.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A23.1:~~19~~24/A23.2:~~19~~24	~~Béton : constituants~~Concrete ~~et~~materials ~~exécution~~and ~~des~~methods ~~travaux~~of concrete construction/~~Procédures~~Test ~~d'essai~~methods ~~et~~and ~~pratiques~~standard ~~normalisées~~practices ~~pour~~for ~~le béton~~concrete	CNB D-1.4.3.
CSA (Canadian Standards Association)	A23.3:~~19~~24	Design of concrete structures	NBC 4.1.8.18.(7) NBC 4.3.3.1.(1) NBC A-4.1.3.2.(4) NBC A-4.1.8.16.(1) NBC A-4.1.8.16.(4) NBC A-4.3.3.1.(1) NBC D-2.1.5. NBC D-2.6.6. NBC D-2.8.2. NBC Table 4.1.8.9.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A23.3:~~19~~24	~~Calcul~~Design ~~des~~of ~~ouvrages~~concrete ~~en béton~~structures	CNB 4.1.8.18. 7) CNB 4.3.3.1. 1) CNB A-4.1.3.2. 4) CNB A-4.1.8.16. 1) CNB A-4.1.8.16. 4) CNB A-4.3.3.1. 1) CNB D-2.1.5. CNB D-2.6.6. CNB D-2.8.2. CNB Tableau 4.1.8.9.
CSA (Canadian Standards Association)	A23.4-16	Precast concrete – Materials and construction	NBC A-4.3.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	A23.4-16	Béton préfabriqué – Constituants et exécution des travaux	CNB A-4.3.3.1. 1)
CSA (Canadian Standards Association)	A257.1:19	Non-reinforced circular concrete culvert, storm drain, sewer pipe, and fittings	NPC 2.2.5.2.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.2. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	A257.2:19	Reinforced circular concrete culvert, storm drain, sewer pipe, and fittings	NPC 2.2.5.2.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.2. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	A257.3:19	Joints for circular concrete sewer and culvert pipe, manhole sections, and fittings using rubber gaskets	NPC 2.2.5.2.(2) CNP 2.2.5.2. 2)
CSA (Canadian Standards Association)	A257.4:19	Precast reinforced circular concrete manhole sections, catch basins, and fittings	NPC 2.2.5.2.(5) CNP 2.2.5.2. 5)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	A277-16	Procedure for certification of prefabricated buildings, modules, and panels	NBC A-1.1.1.1.(2) of Division A
CSA (Association canadienne de normalisation/Canadian Standards Association)	A277-16	Mode opératoire visant la certification des bâtiments, des modules et des panneaux préfabriqués	CNB A-1.1.1.1. 2) de la division A
CSA (Canadian Standards Association)	A3001~~-18~~:23	Cementitious Materials for Use in Concrete	NBC 9.28.2.1.(1) NBC 9.3.1.2.(1) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A3001~~-18~~:23	~~Matériaux~~Compendium des matériaux liants ~~utilisés dans le béton~~	CNB 9.28.2.1. 1) CNB 9.3.1.2. 1) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	A440S1:19	Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-17, North American Fenestration Standard/Specification for windows, doors, and skylights	NBC 5.9.2.2.(1) NBC 5.9.3.5.(3) NBC 9.36.2.9.(3) NBC 9.7.4.2.(1) NBC A-5.9.2.2. NBC A-5.9.3.5.(3) NBC A-9.7.4.2.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	A440S1:19	Supplément canadien à AAMA/WDMA/CSA 101/I.S.2/A440-17, Norme nord-américaine sur les fenêtres/Spécification relative aux fenêtres, aux portes et aux lanterneaux	CNB 5.9.2.2. 1) CNB 5.9.3.5. 3) CNB 9.36.2.9. 3) CNB 9.7.4.2. 1) CNB A-5.9.2.2. CNB A-5.9.3.5. 3) CNB A-9.7.4.2. 1)
CSA (Canadian Standards Association)	A440.2:19	Fenestration energy performance	NBC A-5.3.1.2. NBC A-5.9.3.3.(1) NBC A-9.7.4.2.(1) NBC Table 9.36.8.6.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A440.2:19	Rendement énergétique des systèmes de fenêtrage	CNB A-5.3.1.2. CNB A-5.9.3.3. 1) CNB A-9.7.4.2. 1) CNB Tableau 9.36.8.6.
CSA (Canadian Standards Association)	A440.2:~~19~~22/A440.3:~~19~~22	Fenestration energy performance/User ~~guide~~Guide to CSA A440.2:~~19~~22, Fenestration energy performance	NBC 9.36.2.2.(3) NBC A-Table 9.36.2.7.-A NBC Table 9.7.3.3. NECB 3.1.1.5.(3) NECB A-3.1.1.6.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	A440.2:~~19~~22/A440.3:~~19~~22	Rendement énergétique des systèmes de fenêtrage/Guide d'utilisation de CSA A440.2:~~19~~22, Rendement énergétique des systèmes de fenêtrage	CNB 9.36.2.2. 3) CNB A-Tableau 9.36.2.7.-A CNB Tableau 9.7.3.3. CNÉB 3.1.1.5. 3) CNÉB A-3.1.1.6. 1)
CSA (Canadian Standards Association)	A440.3:19	User guide to CSA A440.2:19, Fenestration energy performance	NBC A-5.3.1.2.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A440.3:19	Guide d'utilisation de CSA A440.2:19, Rendement énergétique des systèmes de fenêtrage	CNB A-5.3.1.2.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	A440.4:19	Window, door, and skylight installation	NBC 9.7.6.1.(1) NBC A-5.9.2.3.(1) NBC A-9.7.4.2.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	A440.4:19	Installation des fenêtres, des portes et des lanterneaux	CNB 9.7.6.1. 1) CNB A-5.9.2.3. 1) CNB A-9.7.4.2. 1)
CSA (Canadian Standards Association)	A60.1-M1976	Vitrified Clay Pipe	NPC 2.2.5.3.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	A60.1-M1976	Tuyaux en grès vitrifié	CNP 2.2.5.3. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	A60.3-M1976	Vitrified Clay Pipe Joints	NPC 2.2.5.3.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	A60.3-M1976	Joints des tuyaux en grès vitrifié	CNP 2.2.5.3. 2)
CSA (Canadian Standards Association)	A660-10	Certification of manufacturers of steel building systems	NBC 4.3.4.3.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	A660-10	Certification des fabricants de systèmes de bâtiment en acier	CNB 4.3.4.3. 1)
CSA (Canadian Standards Association)	A82.22-M1977	Gypsum Plasters	NBC D-3.1.1. CNB D-3.1.1.
CSA (Canadian Standards Association)	A82.30-M1980	Interior Furring, Lathing and Gypsum Plastering	NBC 9.29.4.1.(1) NBC D-1.7.2. NBC D-2.3.9. NBC D-2.5.1. CNB 9.29.4.1. 1) CNB D-1.7.2. CNB D-2.3.9. CNB D-2.5.1.
CSA (Canadian Standards Association)	A82.31-M1980	Gypsum Board Application	NBC 3.2.3.6.(5) NBC 9.10.12.4.(3) NBC 9.10.14.5.(12) NBC 9.10.14.5.(8) NBC 9.10.15.5.(11) NBC 9.10.15.5.(7) NBC 9.10.9.2.(5) NBC 9.29.5.1.(2) NBC Table 9.10.3.1.-A
CSA (Association canadienne de normalisation/Canadian Standards Association)	A82.31-M1980	Pose des plaques de plâtre	CNB 3.2.3.6. 5) CNB 9.10.12.4. 3) CNB 9.10.14.5. 12) CNB 9.10.14.5. 8) CNB 9.10.15.5. 11) CNB 9.10.15.5. 7) CNB 9.10.9.2. 5) CNB 9.29.5.1. 2) CNB Tableau 9.10.3.1.-A

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	B108-~~18~~:23 PACKAGE	~~Natural~~Consists of CSA B108.1:23, Compressed natural gas refuelling stations installation code and CSA B108.2:23, Liquefied natural gas refueling stations installation code	NFC 4.6.1.1.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	COLLECTION B108-~~18~~:23	Contient CSA B108.1:23, Code d'installation ~~de~~des centres de ravitaillement en gaz naturel comprimé et CSA B108.2:23, Code d'installation des centres de ravitaillement en gaz naturel liquéfié	CNPI 4.6.1.1. 2)
CSA (Canadian Standards Association)	B111-1974	Wire Nails, Spikes and Staples	NBC 9.23.3.1.(1) NBC 9.26.2.3.(1) NBC 9.29.5.6.(1) NBC A-Table 9.23.3.5.-B CNB 9.23.3.1. 1) CNB 9.26.2.3. 1) CNB 9.29.5.6. 1) CNB A-Tableau 9.23.3.5.-B
CSA (Canadian Standards Association)	B125.3-~~18~~:22	Plumbing fittings	NPC 2.2.10.6.(1) NPC 2.2.10.7.(2) NPC 2.2.10.7.(3) NPC A-2.6.1.11.(1) CNP 2.2.10.6. 1) CNP 2.2.10.7. 2) CNP 2.2.10.7. 3) CNP A-2.6.1.11. 1)
CSA (Canadian Standards Association)	B137.10-~~17~~:23	Crosslinked polyethylene/aluminum/crosslinked polyethylene (PEX-AL-PEX) composite pressure-pipe systems	NPC 2.2.5.12.(4) NPC 2.2.5.13.(1) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.13.(1) CNP 2.2.5.12. 4) CNP 2.2.5.13. 1) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.13. 1)
CSA (Canadian Standards Association)	B137.11-~~17~~:23	Polypropylene (PP-R and PP-RCT) pipe and fittings for pressure applications	NPC 2.2.5.14.(1) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.14.(1) CNP 2.2.5.14. 1) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.14. 1)
CSA (Canadian Standards Association)	B137.1-~~17~~:23	Polyethylene (PE) pipe, tubing, and fittings for cold-water pressure services	NPC 2.2.5.4.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.4. 1) CNP A-2.2.5. à 2.2.8.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	B137.18-~~17~~:23	Polyethylene of raised temperature resistance (PE-RT) tubing systems for pressure applications	NPC 2.2.5.15.(1) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.15.(1) CNP 2.2.5.15. 1) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.15. 1)
CSA (Canadian Standards Association)	B137.2-~~17~~:23	Polyvinylchloride (PVC) injection-moulded gasketed fittings for pressure applications	NPC 2.2.5.7.(3) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.7. 3) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B137.3-~~17~~:23	Rigid polyvinylchloride (PVC) pipe and fittings for pressure applications	NPC 2.2.5.7.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.7. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B137.5-~~17~~:23	Crosslinked polyethylene (PEX) tubing systems for pressure applications	NPC 2.2.5.6.(1) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.6.(1) CNP 2.2.5.6. 1) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.6. 1)
CSA (Canadian Standards Association)	B137.6-~~17~~:23	Chlorinated polyvinylchloride (CPVC) pipe, tubing, and fittings for hot- and cold-water distribution systems	NPC 2.2.5.8.(1) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.9. to 2.2.5.11. CNP 2.2.5.8. 1) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.9. à 2.2.5.11.
CSA (Canadian Standards Association)	B137.9-~~17~~:23	Polyethylene/aluminum/polyethylene (PE-AL-PE) composite pressure-pipe systems	NPC 2.2.5.12.(1) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.12.(1) CNP 2.2.5.12. 1) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.12. 1)
CSA (Canadian Standards Association)	B139 Series:~~19~~24	Installation code for oil-burning equipment	NBC 6.2.1.5.(1) NBC 9.31.6.2.(2) NBC 9.33.5.2.(1) NFC 4.1.1.1.(3) NFC 4.3.13.6.(1) NFC 5.6.1.10.(1) NFC A-4.1.1.1.(3)(b) NFC A-4.3.13.4.(1)(b)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Association canadienne de normalisation/Canadian Standards Association)	B139 Série:~~19~~24	Code d'installation des appareils de combustion au mazout	CNB 6.2.1.5. 1) CNB 9.31.6.2. 2) CNB 9.33.5.2. 1) CNPI 4.1.1.1. 3) CNPI 4.3.13.6. 1) CNPI 5.6.1.10. 1) CNPI A-4.1.1.1. 3)b) CNPI A-4.3.13.4. 1)b)
CSA (Canadian Standards Association)	B140.12-~~03~~:22	Oil-~~Burning~~fired ~~Equipment:~~ ~~Service~~service ~~Water~~water ~~Heaters~~heaters for ~~Domestic~~domestic ~~Hot~~hot ~~Water~~water, ~~Space~~space ~~Heating~~heating, and ~~Swimming~~swimming ~~Pools~~pools	NBC Table 9.36.4.2. NECB Table 6.2.2.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B140.12-~~03~~:22	~~Appareils~~Chauffe-eau ~~de combustion~~alimenté au mazout~~ : Chauffe-eau~~ pour usage d'~~'~~habitation, pour le chauffage des locaux et pour le chauffage des piscines	CNB Tableau 9.36.4.2. CNÉB Tableau 6.2.2.1.
CSA (Canadian Standards Association)	B140.4:~~04~~22	Oil-~~Fired~~fired ~~Warm~~warm ~~Air~~air ~~Furnaces~~furnaces	NBC Table 9.36.3.10. NECB Table 5.2.12.1.O
CSA (Association canadienne de normalisation/Canadian Standards Association)	B140.4:~~04~~22	Générateurs d'air chaud alimentés au mazout	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-O
CSA (Canadian Standards Association)	B149.1-15	Natural gas and propane installation code	NBC 2.4.2.2.(2) NBC 6.2.1.5.(1) NBC 9.10.22.1.(1) NBC 9.31.6.2.(2) NBC 9.33.5.2.(1) NBC A-9.10.22. NFC 3.1.1.4.(2) NFC 3.1.1.4.(3) NFC 4.6.1.1.(2) NFC 5.6.1.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B149.1-15	Code d'installation du gaz naturel et du propane	CNB 2.4.2.2. 2) CNB 6.2.1.5. 1) CNB 9.10.22.1. 1) CNB 9.31.6.2. 2) CNB 9.33.5.2. 1) CNB A-9.10.22. CNPI 3.1.1.4. 2) CNPI 3.1.1.4. 3) CNPI 4.6.1.1. 2) CNPI 5.6.1.10. 1)
CSA (Canadian Standards Association)	B149.2-15	Propane storage and handling code	NFC 3.1.1.4.(2) NFC 3.2.8.2.(3) NFC 4.6.1.1.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B149.2-15	Code sur le stockage et la manipulation du propane	CNPI 3.1.1.4. 2) CNPI 3.2.8.2. 3) CNPI 4.6.1.1. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	B158.1-1976	Cast Brass Solder Joint Drainage, Waste and Vent Fittings	NPC 2.2.10.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B158.1-1976	Raccords d'évacuation, d'égout et de ventilation à joint soudé en laiton de fonte	CNP 2.2.10.1. 1)
CSA (Canadian Standards Association)	B181.1-~~18~~:24	Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings	NPC 2.2.5.10.(1) NPC 2.2.5.11.(1) NPC 2.2.5.9.(1) NPC 2.4.6.4.(5) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.9. to 2.2.5.11.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B181.1-~~18~~:24	Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings	CNP 2.2.5.10. 1) CNP 2.2.5.11. 1) CNP 2.2.5.9. 1) CNP 2.4.6.4. 5) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.9. à 2.2.5.11.
CSA (Canadian Standards Association)	B181.2-~~18~~:24	Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings	NPC 2.2.5.10.(1) NPC 2.2.5.11.(1) NPC 2.2.5.16.(1) NPC 2.2.5.16.(2) NPC 2.2.5.9.(1) NPC 2.4.6.4.(5) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.9. to 2.2.5.11.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B181.2-~~18~~:24	Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings	CNP 2.2.5.10. 1) CNP 2.2.5.11. 1) CNP 2.2.5.16. 1) CNP 2.2.5.16. 2) CNP 2.2.5.9. 1) CNP 2.4.6.4. 5) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.9. à 2.2.5.11.
CSA (Canadian Standards Association)	B181.3-~~18~~:24	Polyolefin and polyvinylidene fluoride (PVDF) laboratory drainage systems	NPC 2.2.8.1.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B181.3-~~18~~:24	Polyolefin and polyvinylidene fluoride (PVDF) laboratory drainage systems	CNP 2.2.8.1. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B182.1-~~18~~:24	Plastic drain and sewer pipe and pipe fittings	NBC 9.14.3.1.(1) NBC Table 5.9.1.1. NPC 2.2.5.9.(1) NPC 2.4.6.4.(5) NPC A-2.2.5. to 2.2.8.

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CSA (Association canadienne de normalisation/Canadian Standards Association)	B182.1-~~18~~:24	Plastic drain and sewer pipe and pipe fittings	CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1. CNP 2.2.5.9. 1) CNP 2.4.6.4. 5) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B182.2-~~18~~:24	PSM type polyvinylchloride (PVC) sewer pipe and fittings	NPC 2.2.5.9.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B182.2-~~18~~:24	PSM type polyvinylchloride (PVC) sewer pipe and fittings	CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B182.4-~~18~~:24	Profile polyvinylchloride (PVC) sewer pipe and fittings	NPC 2.2.5.9.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B182.4-~~18~~:24	Profile polyvinylchloride (PVC) sewer pipe and fittings	CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B182.6-~~18~~:24	Profile polyethylene (PE) sewer pipe and fittings for leak-proof sewer applications	NPC 2.2.5.9.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B182.6-~~18~~:24	Profile polyethylene (PE) sewer pipe and fittings for leak-proof sewer applications	CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	B182.8-~~18~~:24	Profile polyethylene (PE) storm sewer and drainage pipe and fittings	NPC 2.2.5.9.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B182.8-~~18~~:24	Profile polyethylene (PE) storm sewer and drainage pipe and fittings	CNP 2.2.5.9. 1)
CSA (Canadian Standards Association)	B214-16	Installation code for hydronic heating systems	NBC 6.2.1.1.(1) NBC 9.33.4.2.(1) NBC A-9.36.3.4.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B214-16	Code d'installation des systèmes de chauffage hydronique	CNB 6.2.1.1. 1) CNB 9.33.4.2. 1) CNB A-9.36.3.4. 1)
CSA (Canadian Standards Association)	B242-05	Groove- and Shoulder-Type Mechanical Pipe Couplings	NPC 2.2.10.4.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B242-05	Raccords mécaniques pour tuyaux à rainure et à épaulement	CNP 2.2.10.4. 1)
CSA (Canadian Standards Association)	B272-93	Prefabricated Self-Sealing Roof Vent Flashings	NPC 2.2.10.14.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B272-93	Solins d'évent de toit étanches préfabriqués	CNP 2.2.10.14. 2)

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CSA (Canadian Standards Association)	B306-M1977	Portable Fuel Tanks for Marine Use	NFC 4.2.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B306-M1977	Réservoirs de carburant portatifs pour bateaux	CNPI 4.2.3.1. 1)
CSA (Canadian Standards Association)	B346-M1980	Power-Operated Dispensing Devices for Flammable Liquids	NFC 4.6.3.1.(1) CNPI 4.6.3.1. 1)
CSA (Canadian Standards Association)	B355:19	Platform lifts and stair lifts for barrier-free access	NBC 3.8.3.7.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B355:19	Plates-formes et appareils élévateurs d'escalier pour un accès sans obstacles	CNB 3.8.3.7. 1)
CSA (Canadian Standards Association)	B365-17	Installation code for solid-fuel-burning appliances and equipment	NBC 6.2.1.5.(1) NBC 9.22.10.2.(1) NBC 9.31.6.2.(2) NBC 9.33.5.3.(1) NBC A-9.33.1.1.(2) NBC A-9.33.5.3.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B365-17	Code d'installation des appareils à combustibles solides et du matériel connexe	CNB 6.2.1.5. 1) CNB 9.22.10.2. 1) CNB 9.31.6.2. 2) CNB 9.33.5.3. 1) CNB A-9.33.1.1. 2) CNB A-9.33.5.3.
CSA (Canadian Standards Association)	B376-M1980	Portable Containers for Gasoline and Other Petroleum Fuels	NFC 4.2.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B376-M1980	Réservoirs portatifs pour l'essence et autres combustibles de pétrole	CNPI 4.2.3.1. 1)
CSA (Canadian Standards Association)	B415.1-10	Performance Testing of Solid-Fuel-Burning Heating Appliances	NBC Table 9.36.3.10. NECB Table 5.2.12.1.P
CSA (Association canadienne de normalisation/Canadian Standards Association)	B415.1-10	Essais de rendement des appareils de chauffage à combustibles solides	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-P
CSA (Canadian Standards Association)	B481.0-12	Material, design, and construction requirements for grease interceptors	NPC 2.2.3.2.(3)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B481.0-12	Exigences relatives aux matériaux, à la conception et à la construction des séparateurs de graisses	CNP 2.2.3.2. 3)
CSA (Canadian Standards Association)	B481.3-12	Sizing, selection, location, and installation of grease interceptors	NPC 2.2.3.2.(3)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B481.3-12	Choix de la taille, du modèle et de l'emplacement des séparateurs de graisses, et leur installation	CNP 2.2.3.2. 3)

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CSA (Canadian Standards Association)	B481.4-12	Maintenance of grease interceptors	NPC A-2.2.3.2.(3)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B481.4-12	Entretien des séparateurs de graisses	CNP A-2.2.3.2. 3)
CSA (Canadian Standards Association)	B51:~~19~~24	Boiler, pressure vessel, and pressure piping code	NBC 6.2.1.5.(1) NBC 9.31.6.2.(2) NBC 9.33.5.2.(1) NFC 4.3.1.3.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B51:~~19~~24	~~Code~~Boiler, pressure ~~sur~~vessel, and ~~les~~pressure ~~chaudières, les~~piping ~~appareils et les tuyauteries sous pression~~code	CNB 6.2.1.5. 1) CNB 9.31.6.2. 2) CNB 9.33.5.2. 1) CNPI 4.3.1.3. 2)
CSA (Canadian Standards Association)	B52:~~18~~23	Mechanical refrigeration code	NBC 6.2.1.5.(1) NBC 9.33.5.2.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B52:~~18~~23	Code sur la réfrigération mécanique	CNB 6.2.1.5. 1) CNB 9.33.5.2. 1)
CSA (Canadian Standards Association)	B55.1:15	Test method for measuring efficiency and pressure loss of drain water heat recovery units	NBC 9.36.5.12.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B55.1:15	Méthode d'essai pour la mesure de l'efficacité et de la perte de charge des récupérateurs de chaleur des eaux grises	CNB 9.36.5.12. 2)
CSA (Canadian Standards Association)	B602-16	Mechanical couplings for drain, waste, and vent pipe and sewer pipe	NPC 2.2.10.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B602-16	Joints mécaniques pour tuyaux d'évacuation, de ventilation et d'égout	CNP 2.2.10.4. 2)
CSA (Canadian Standards Association)	B620-~~14~~:20	Highway tanks and TC portable tanks for the transportation of dangerous goods	NFC 4.2.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B620-~~14~~:20	Citernes routières et citernes amovibles TC pour le transport des marchandises dangereuses	CNPI 4.2.3.1. 1)
CSA (Canadian Standards Association)	B64.0-11	Definitions, general requirements, and test methods for vacuum breakers and backflow preventers	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.0-11	Définitions, exigences générales et méthodes d'essai relatives aux casse-vide et aux dispositifs antirefoulement	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	CSA B64.10-~~17~~:23/CSA B64.10.1:23	Selection and installation of backflow preventers/Maintenance and field testing of backflow preventers	NPC 2.6.2.1.(3)

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CSA (Association canadienne de normalisation/Canadian Standards Association)	**CSA** B64.10-~~17~~**:23/CSA B64.10.1:23**	Sélection et installation des dispositifs antirefoulement**/Entretien et mise à l'essai à pied d'oeuvre des dispositifs antirefoulement**	CNP 2.6.2.1. 3)
CSA (Canadian Standards Association)	B64.1.1-11	Atmospheric vacuum breakers (AVB)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.1.1-11	Casse-vide atmosphériques (C-VA)	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.1.2-11	Pressure vacuum breakers (PVB)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.1.2-11	Casse-vide à pression (C-VP)	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.1.3-11	Spill-resistant pressure vacuum breakers (SRPVB)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.1.3-11	Casse-vide à pression antidéversement (C-VPAD)	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.2-11	Hose connection vacuum breakers (HCVB)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.2-11	Casse-vide à raccordement de flexible (C-VRF)	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.2.1-11	Hose connection vacuum breakers (HCVB) with manual draining feature	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.2.1-11	Casse-vide à raccordement de flexible (C-VRF) à vidange manuelle	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.2.2-11	Hose connection vacuum breakers (HCVB) with automatic draining feature	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.2.2-11	Casse-vide à raccordement de flexible (C-VRF) à vidange automatique	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.3-11	Dual check valve backflow preventers with atmospheric port (DCAP)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.3-11	Dispositifs antirefoulement à deux clapets de retenue à orifice de décharge (DArOD)	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.4-11	Reduced pressure principle (RP) backflow preventers	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2)

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CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.4-11	Dispositif antirefoulement à pression réduite (DArPR)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2)
CSA (Canadian Standards Association)	B64.4.1-11	Reduced pressure principle backflow preventers for fire protection systems (RPF)	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2) NPC 2.6.2.4.(4) NPC A-2.6.2.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.4.1-11	Dispositifs antirefoulement à pression réduite pour les systèmes de protection incendie (DArPRI)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2) CNP 2.6.2.4. 4) CNP A-2.6.2.4. 2)
CSA (Canadian Standards Association)	B64.5-11	Double check valve (DCVA) backflow preventers	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.5-11	Dispositifs antirefoulement à deux clapets de retenue et robinets (DAr2CR)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2)
CSA (Canadian Standards Association)	B64.5.1-11	Double check valve backflow preventers for fire protection systems (DCVAF)	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2) NPC A-2.6.2.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.5.1-11	Dispositifs antirefoulement à deux clapets de retenue et robinets pour les systèmes de protection incendie (DAr2CRI)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2) CNP A-2.6.2.4. 2)
CSA (Canadian Standards Association)	B64.6-11	Dual check valve (DuC) backflow preventers	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.6-11	Dispositifs antirefoulement à deux clapets de retenue (DAr2C)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2)
CSA (Canadian Standards Association)	B64.6.1-11	Dual check valve backflow preventers for fire protection systems (DuCF)	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2) NPC A-2.6.2.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.6.1-11	Dispositifs antirefoulement à deux clapets de retenue pour les systèmes de protection incendie (DAr2CI)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2) CNP A-2.6.2.4. 2)
CSA (Canadian Standards Association)	B64.7-11	Laboratory faucet vacuum breakers (LFVB)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.7-11	Casse-vide pour robinet de laboratoire (C-VRL)	CNP 2.2.10.10. 1)
CSA (Canadian Standards Association)	B64.8-11	Dual check valve backflow preventers with intermediate vent (DuCV)	NPC 2.2.10.10.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.8-11	Dispositif antirefoulement à deux clapets de retenue à ventilation intermédiaire (DAr2CV)	CNP 2.2.10.10. 1)

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CSA (Canadian Standards Association)	B64.9-11	Single check valve backflow preventers for fire protection systems (SCVAF)	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2) NPC A-2.6.2.4.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B64.9-11	Dispositif antirefoulement à un clapet de retenue pour les systèmes de protection incendie (DAr1CI)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2) CNP A-2.6.2.4. 2)
CSA (Canadian Standards Association)	B651-18	Accessible design for the built environment	NBC 3.3.1.19.(1) NBC 3.8.3.1.(1) NBC 3.8.3.3.(1) NBC 3.8.3.9.(1) NBC 3.8.3.9.(2) NBC A-3.8.3.1.(1) NBC Table 3.8.3.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B651-18	Conception accessible pour l'environnement bâti	CNB 3.3.1.19. 1) CNB 3.8.3.1. 1) CNB 3.8.3.3. 1) CNB 3.8.3.9. 1) CNB 3.8.3.9. 2) CNB A-3.8.3.1. 1) CNB Tableau 3.8.3.1.
CSA (Canadian Standards Association)	B70.1-~~03~~:23	Frames and ~~Covers~~covers for ~~Maintenance~~maintenance ~~Holes~~holes and ~~Catchbasins~~catchbasins	NPC 2.2.6.2.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	B70.1-~~03~~:23	~~Cadres~~Frames ~~et~~and ~~couvercles~~covers ~~de~~for ~~regards~~maintenance ~~de~~holes ~~visite~~and ~~et de bassins collecteurs~~catchbasins	CNP 2.2.6.2. 1)
CSA (Canadian Standards Association)	B70-12	Cast iron soil pipe, fittings, and means of joining	NPC 2.2.6.1.(1) NPC 2.4.6.4.(5) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	B70-12	Tuyaux et raccords d'évacuation d'eaux usées en fonte et méthodes de raccordement	CNP 2.2.6.1. 1) CNP 2.4.6.4. 5) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	CAN/CSA A82.27-M91	Gypsum Board	NBC 3.1.5.14.(6) NBC 3.1.5.15.(4) NBC 3.1.6.15.(1) NBC 3.1.6.6.(2) NBC D-1.5.1. NBC D-3.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA A82.27-M91	Plaques de plâtre	CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 3.1.6.15. 1) CNB 3.1.6.6. 2) CNB D-1.5.1. CNB D-3.1.1.
CSA (Canadian Standards Association)	CAN/CSA-A123.16:04	Asphalt-coated glass-base sheets	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B

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CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A123.16:04	Membranes d'étanchéité bitumées et à base de fibres de verre	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	CAN/CSA-A123.2-03	Asphalt-Coated Roofing Sheets	NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A123.2-03	Feutre à toiture revêtu de bitume	CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	CAN/CSA-A123.21:14	Standard test method for the dynamic wind uplift resistance of membrane-roofing systems	NBC 5.2.2.2.(4) NBC A-5.2.2.2.(4)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A123.21:14	Méthode d'essai normalisée de la résistance dynamique à l'arrachement sous l'action du vent des systèmes de couverture à membrane	CNB 5.2.2.2. 4) CNB A-5.2.2.2. 4)
CSA (Canadian Standards Association)	CAN/CSA-A123.4-04	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems	NBC 9.13.2.2.(2) NBC 9.13.3.2.(2) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A123.4-04	Bitume utilisé pour l'imperméabilisation de revêtements multicouches pour toitures	CNB 9.13.2.2. 2) CNB 9.13.3.2. 2) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	CAN/CSA-A179-14	Mortar and Grout for Unit Masonry	NBC 9.15.2.2.(3) NBC 9.20.3.1.(1) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A179-14	Mortier et coulis pour la maçonnerie en éléments	CNB 9.15.2.2. 3) CNB 9.20.3.1. 1) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	CAN/CSA-A220 Series-06	Concrete Roof Tiles	NBC 9.26.17.1.(1) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Canadian Standards Association)	CAN/CSA-A324-M88	Clay Flue Liners	NBC 9.21.3.3.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A324-M88	Boisseaux en argile pour conduits de fumée	CNB 9.21.3.3. 1)
CSA (Canadian Standards Association)	CAN/CSA-A370:14	Connectors for masonry	NBC A-9.21.4.5.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A370:14	Connecteurs pour la maçonnerie	CNB A-9.21.4.5. 2)

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CSA (Canadian Standards Association)	CAN/CSA-A371-14	Masonry Construction for Buildings	NBC 9.15.2.2.(3) NBC 9.20.15.2.(1) NBC 9.20.3.2.(7) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A371-14	Maçonnerie des bâtiments	CNB 9.15.2.2. 3) CNB 9.20.15.2. 1) CNB 9.20.3.2. 7) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	CAN/CSA-A405-M87	Design and Construction of Masonry Chimneys and Fireplaces	NBC 9.21.3.5.(1) NBC 9.22.1.4.(1) NBC 9.22.5.2.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A405-M87	Conception et construction des foyers et cheminées en maçonnerie	CNB 9.21.3.5. 1) CNB 9.22.1.4. 1) CNB 9.22.5.2. 2)
CSA (Canadian Standards Association)	CAN/CSA-A82:14	Fired masonry brick made from clay or shale	NBC 9.20.2.1.(1) NBC D-2.6.1. NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A82:14	Brique de maçonnerie cuite en argile ou en schiste	CNB 9.20.2.1. 1) CNB D-2.6.1. CNB Tableau 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-A82.27-M91	Plaques de plâtre	CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 3.1.6.15. 1) CNB 3.1.6.6. 2) CNB D-1.5.1. CNB D-3.1.1.
CSA (Canadian Standards Association)	CAN/CSA-B126.0-13	General requirements and methods of testing for water cisterns	NPC 2.7.2.4.(6)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B126.0-13	Exigences générales et méthodes d'essai des réservoirs d'eau	CNP 2.7.2.4. 6)
CSA (Canadian Standards Association)	CAN/CSA-B126.1-13	Installation of water cisterns	NPC 2.7.2.4.(6)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B126.1-13	Installation des réservoirs d'eau	CNP 2.7.2.4. 6)
CSA (Canadian Standards Association)	CAN/CSA-B127.3-18	Fibrocement drain, waste, and vent pipe and pipe fittings	NPC 2.2.5.1.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B127.3-18	Fibrocement drain, waste, and vent pipe and pipe fittings	CNP 2.2.5.1. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	CAN/CSA-B128.1-06	Design and Installation of Non-Potable Water Systems	NPC 2.7.1.2.(1) NPC A-2.7.1.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B128.1-06	Conception et installation des réseaux d'eau non potable	CNP 2.7.1.2. 1) CNP A-2.7.1.1. 1)

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CSA (Canadian Standards Association)	CAN/CSA-B211-00	Energy Efficiency of Oil-Fired Storage Tank Water Heaters	NBC Table 9.36.4.2. NECB Table 6.2.2.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B211-00	Rendement énergétique des chauffe-eau au mazout à accumulation	CNB Tableau 9.36.4.2. CNÉB Tableau 6.2.2.1.
CSA (Canadian Standards Association)	~~CAN~~ASSE 1003-23/CSA-B356~~-10~~:23	Water pressure reducing valves for ~~domestic~~potable water ~~supply~~distribution systems	NPC 2.2.10.12.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN~~ASSE 1003-23/CSA-B356~~-10~~:23	~~Réducteurs~~Water ~~de~~pressure ~~pression~~reducing ~~pour~~valves ~~réseaux~~for ~~domestiques~~potable ~~d'alimentation~~water ~~en~~distribution ~~eau~~systems	CNP 2.2.10.12. 1)
CSA (Canadian Standards Association)	CAN/CSA-B45 Series-02	Plumbing Fixtures	NPC 2.2.2.2.(1)
CSA (Canadian Standards Association)	CAN/CSA-B483.1-07	Drinking Water Treatment Systems	NPC 2.2.10.17.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B483.1-07	Systèmes de traitement de l'eau potable	CNP 2.2.10.17. 1)
CSA (Canadian Standards Association)	CAN/CSA-B72-M87	Installation Code for Lightning Protection Systems	NBC 3.6.1.3.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B72-M87	Code d'installation des paratonnerres	CNB 3.6.1.3. 1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-B72-M87	Code d'installation des paratonnerres	CNB 3.6.1.3. 1)
CSA (Canadian Standards Association)	CAN/CSA-C13256-1-01	Water-Source Heat Pumps - Testing and Rating for Performance - Part 1: Water-to-Air and Brine-to-Air Heat Pumps (Adopted ISO 13256-1:1998, first edition, 1998-08-15, with Canadian Deviations)	NBC Table 9.36.3.10. NECB Table 5.2.12.1.E
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C13256-1-01	Pompes à chaleur à eau - Essais et détermination des caractéristiques de performance - Partie 1 : Pompes à chaleur eau-air et eau glycolée-air (norme ISO 13256-1 : 1998 adoptée, première édition, 1998-08-15, avec exigences propres au Canada)	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-E
CSA (Canadian Standards Association)	CAN/CSA-C13256-2-01	Water-Source Heat Pumps - Testing and Rating for Performance - Part 2: Water-to-Water and Brine-to-Water Heat Pumps (Adopted ISO 13256-2:1998, first edition, 1998-08-15, with Canadian Deviations)	NBC Table 9.36.3.10. NECB Table 5.2.12.1.E

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CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C13256-2-01	Pompes à chaleur à eau - Essais et détermination des caractéristiques de performance - Partie 2 : Pompes à chaleur eau-eau et eau glycolée-eau (norme ISO 13256-2 : 1998 adoptée, première édition, 1998-08-15, avec exigences propres au Canada)	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-E
CSA (Canadian Standards Association)	CAN/CSA-C191-~~04~~13	Performance of ~~Electric~~electric ~~Storage~~storage ~~Tank~~tank ~~Water~~water ~~Heaters~~heaters for ~~Domestic~~domestic ~~Hot~~hot ~~Water~~water ~~Service~~service	NBC Table 9.36.4.2. NECB Table 6.2.2.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C191-~~04~~13	Fonctionnement des chauffe-eau électriques à accumulation pour usage domestique	CNB Tableau 9.36.4.2. CNÉB Tableau 6.2.2.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C22.2 N° 262-04	Canalisations pour câbles à fibres optiques et câbles de télécommunications	CNB 3.1.5.23. 1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C22.2 N° 61010-1-12	Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire - Partie 1 : Exigences générales (norme trinationale avec UL 61010-1 et ANSI/ISA-61010-1 (82.02.01)	CNPI A-5.5.3.4. 1)
CSA (Canadian Standards Association)	CAN/CSA-C22.2 No. 150-M89	Microwave Ovens	NBC A-9.10.22.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C22.2 No. 150-M89	Fours à micro-ondes	CNB A-9.10.22.
CSA (Canadian Standards Association)	CAN/CSA-C22.2 No. 262-04	Optical Fiber Cable and Communication Cable Raceway Systems	NBC 3.1.5.23.(1)
CSA (Canadian Standards Association)	CAN/CSA-C22.2 No. 61010-1-12	Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements (Tri-national standard, with UL 61010-1 and ANSI/ISA-61010-1 (82.02.01)	NFC A-5.5.3.4.(1)
CSA (Canadian Standards Association)	CAN/CSA-C260-M90	Rating the Performance of Residential Mechanical Ventilating Equipment	NBC 9.32.3.10.(1) NBC 9.32.3.10.(2) NBC Table 9.32.3.10.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C260-M90	Évaluation du rendement du matériel de ventilation mécanique pour habitations	CNB 9.32.3.10. 1) CNB 9.32.3.10. 2) CNB Tableau 9.32.3.10.B

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CSA (Canadian Standards Association)	CAN/CSA-C439-~~09~~18	~~Standard laboratory~~Laboratory methods of test for rating the performance of heat/energy-recovery ventilators	NBC 9.32.3.10.(4) NBC 9.32.3.10.(5) NBC 9.36.3.8.(4) NBC 9.36.3.9.(3) NBC A-9.36.3.9.(3) NECB 5.2.10.1.(5) NECB 5.2.10.4.(2) NECB A-5.2.10.4.(2) NECB Table 5.2.10.4.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C439-~~09~~18	~~Méthode~~Méthodes d'essai pour l'évaluation en laboratoire des performances des ventilateurs-récupérateurs de chaleur/énergie	CNB 9.32.3.10. 4) CNB 9.32.3.10. 5) CNB 9.36.3.8. 4) CNB 9.36.3.9. 3) CNB A-9.36.3.9. 3) CNÉB 5.2.10.1. 5) CNÉB 5.2.10.4. 2) CNÉB A-5.2.10.4. 2) CNÉB Tableau 5.2.10.4.
CSA (Canadian Standards Association)	CAN/CSA-C448 Series-13	Design and installation of earth energy systems	NBC 9.33.5.2.(1) CNB 9.33.5.2. 1)
CSA (Canadian Standards Association)	CAN/CSA-C654-14	Fluorescent lamp ballast efficacy measurements	NECB 4.2.1.2.(1) NECB 4.2.1.2.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C654-14	Mesures de rendement des ballasts de lampe fluorescente	CNÉB 4.2.1.2. 1) CNÉB 4.2.1.2. 2)
CSA (Canadian Standards Association)	CAN/CSA-C743-09	Performance standard for rating packaged water chillers	NECB Table 5.2.12.1.K NECB Table 5.2.12.1.L
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C743-09	Évaluation des performances des refroidisseurs d'eau monoblocs	CNÉB Tableau 5.2.12.1.-K CNÉB Tableau 5.2.12.1.-L
CSA (Canadian Standards Association)	CAN/CSA-C745-03	Energy Efficiency of Electric Storage Tank Water Heaters and Heat Pump Water Heaters	NBC Table 9.36.4.2. NBC Table 9.36.8.10. NECB Table 6.2.2.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C745-03	Rendement énergétique des chauffe-eau électriques à accumulation et des chauffe-eau à pompe à chaleur	CNB Tableau 9.36.4.2. CNB Tableau 9.36.8.10. CNÉB Tableau 6.2.2.1.

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CSA (Canadian Standards Association)	CAN/CSA-C746~~-06~~:23	~~Performance~~Energy ~~Standard~~performance rating for ~~Rating Large~~large and ~~Single~~single ~~Packaged~~packaged ~~Vertical~~vertical ~~Air~~air ~~Conditioners~~conditioners and ~~Heat~~heat ~~Pumps~~pumps	NBC Table 9.36.3.10. NECB Table 5.2.12.1.A NECB Table 5.2.12.1.B NECB Table 5.2.12.1.C NECB Table 5.2.12.1.D
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C746~~-06~~:23	Évaluation des performances énergétiques des climatiseurs et des thermopompes de grande puissance et ~~des climatiseurs~~ verticaux monoblocs	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-A CNÉB Tableau 5.2.12.1.-B CNÉB Tableau 5.2.12.1.-C CNÉB Tableau 5.2.12.1.-D
CSA (Canadian Standards Association)	CAN/CSA-C749-07	Performance of Dehumidifiers	NBC Table 9.36.3.10.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C749-07	Performances des déshumidificateurs	CNB Tableau 9.36.3.10.
CSA (Canadian Standards Association)	~~CAN/CSA-~~C802.1~~-13~~:23	Minimum efficiency values for liquid-filled distribution transformers	NECB 7.2.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN/CSA-~~C802.1~~-13~~:23	Valeurs minimales de rendement pour les transformateurs de distribution à isolant liquide	CNÉB 7.2.3.1. 1)
CSA (Canadian Standards Association)	CAN/CSA-C802.2-18	Test method and minimum efficiency values for dry-type transformers	NECB 7.2.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C802.2:18	Méthode d'essai et valeurs minimales de rendement pour les transformateurs à sec	CNÉB 7.2.3.1. 1)
CSA (Canadian Standards Association)	CAN/CSA-C828-13	Performance requirements for thermostats used with individual room electric space heating devices	NBC 9.36.3.6.(3) NECB 5.2.8.6.(4)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C828-13	Exigences relatives aux performances des thermostats dédiés au chauffage électrique par pièce	CNB 9.36.3.6. 3) CNÉB 5.2.8.6. 4)
CSA (Canadian Standards Association)	CAN/CSA-C860-11	Performance of internally lighted exit signs	NECB 4.2.1.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-C860-11	Performances des enseignes de sortie à éclairage interne	CNÉB 4.2.1.1. 1)

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CSA (Canadian Standards Association)	~~CAN/CSA-~~F326~~-M91~~**:23**	Residential ~~Mechanical~~**mechanical** ~~Ventilation~~**ventilation** ~~Systems~~**systems**	NBC 9.32.3.1.(1) NBC A-9.32.3.1.(1) NBC A-9.32.3.5. NBC A-9.32.3.7. NBC A-9.32.3.8. NBC A-9.33.6.13.
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN/CSA-~~F326~~-M91~~**:23**	~~Ventilation~~**Systèmes de ventilation** mécanique des habitations	CNB 9.32.3.1. 1) CNB A-9.32.3.1. 1) CNB A-9.32.3.5. CNB A-9.32.3.7. CNB A-9.32.3.8. CNB A-9.33.6.13.
CSA (Canadian Standards Association)	CAN/CSA-F379 SERIES-09 (excluding Supplement F379S1-11)	Packaged solar domestic hot water systems (liquid-to-liquid heat transfer)	NPC 2.2.10.13.(1) NECB 6.2.2.3.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-F379 SÉRIE-09 (à l'exclusion du Supplément F379S1-11)	Chauffe-eau solaires d'usage ménager intégrés (transfert de chaleur liquide-liquide)	CNP 2.2.10.13. 1) CNÉB 6.2.2.3. 1)
CSA (Canadian Standards Association)	CAN/CSA-F383-08	Installation of packaged solar domestic hot water systems	NPC 2.6.1.8.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-F383-08	Installation des chauffe-eau solaires d'usage ménager intégrés	CNP 2.6.1.8. 1)
CSA (Canadian Standards Association)	~~CAN/CSA-~~G401~~-14~~**:24**	Corrugated steel pipe ~~products~~**and buried structures**	NBC 9.14.3.1.(1) NBC Table 5.9.1.1. NPC 2.2.6.8.(1) NPC A-2.2.5. to 2.2.8.
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN/CSA-~~G401~~-14~~**:24**	Tuyaux en tôle ondulée **et ouvrages enfouis**	CNB 9.14.3.1. 1) CNB Tableau 5.9.1.1. CNP 2.2.6.8. 1) CNP A-2.2.5. à 2.2.8.
CSA (Canadian Standards Association)	CAN/CSA-O122-16	Structural glued-laminated timber	NBC Table 9.23.12.3.-D NBC Table 9.23.4.2.-K
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O122-16	Bois de charpente lamellé-collé	CNB Tableau 9.23.12.3.-D CNB Tableau 9.23.4.2.-K
CSA (Canadian Standards Association)	CAN/CSA-O132.2 Series-90	Wood Flush Doors	NBC 9.7.4.3.(4)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O132.2 Série-90	Portes planes en bois	CNB 9.7.4.3. 4)
CSA (Canadian Standards Association)	CAN/CSA-O80 Series-15	Wood preservation	NBC 3.1.4.5.(1) NBC 4.2.3.2.(1) NBC Table 5.9.1.1.

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CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O80 Série-15	Préservation du bois	CNB 3.1.4.5. 1) CNB 4.2.3.2. 1) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	CAN/CSA-O80.0-15	General requirements for wood preservation	NBC 4.2.3.2.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O80.0-15	Exigences générales relatives à la préservation du bois	CNB 4.2.3.2. 2)
CSA (Canadian Standards Association)	CAN/CSA-O80.1-15	Specification of treated wood	NBC 4.2.3.2.(1) NBC 9.3.2.9.(5)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O80.1-15	Rédaction de devis pour le bois traité	CNB 4.2.3.2. 1) CNB 9.3.2.9. 5)
CSA (Canadian Standards Association)	CAN/CSA-O80.2-15	Processing and treatment	NBC 4.2.3.2.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O80.2-15	Traitement	CNB 4.2.3.2. 1)
CSA (Canadian Standards Association)	CAN/CSA-O80.3-15	Preservative formulations	NBC 4.2.3.2.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-O80.3-15	Formules relatives aux produits de préservation	CNB 4.2.3.2. 1)
CSA (Canadian Standards Association)	CAN/CSA-P.11-07	Testing Method for Measuring Efficiency and Energy Consumption of Gas-Fired Unit Heaters	NBC Table 9.36.3.10. NECB Table 5.2.12.1.O
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-P.11-07	Méthode d'essai pour mesurer l'efficacité et la consommation énergétique des aérothermes à gaz	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-O
CSA (Canadian Standards Association)	CAN/CSA-P.2-13	Testing method for measuring the annual fuel utilization efficiency of residential gas-fired or oil-fired furnaces and boilers	NBC Table 9.36.3.10. NECB Table 5.2.12.1.N NECB Table 5.2.12.1.O
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-P.2-13	Méthode d'essai pour mesurer le taux d'utilisation annuel de combustible des chaudières et générateurs d'air chaud à gaz ou à mazout résidentiels	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-N CNÉB Tableau 5.2.12.1.-O
CSA (Canadian Standards Association)	CAN/CSA-P.3-15	Testing method for measuring energy consumption and determining efficiencies of gas-fired and fuel oil-fired water heaters	NBC Table 9.36.4.2. NBC Table 9.36.8.10. NECB Table 6.2.2.1.

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CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-P.3-15	Méthode d'essai pour mesurer la consommation d'énergie et le rendement énergétique des chauffe-eau au gaz et au mazout	CNB Tableau 9.36.4.2. CNB Tableau 9.36.8.10. CNÉB Tableau 6.2.2.1.
CSA (Canadian Standards Association)	~~CAN/CSA-~~P.4.1~~-15~~:24	Testing method for measuring ~~annual~~ fireplace efficiency	NBC Table 9.36.3.10. NECB Table 5.2.12.1.P
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN/CSA-~~P.4.1~~-15~~:24	Méthode d'essai pour mesurer l'efficacité ~~annuelle~~ des foyers	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-P
CSA (Canadian Standards Association)	~~CAN/CSA-~~P.8~~-09~~:22	Thermal efficiencies of industrial and commercial gas-fired package furnaces	NBC Table 9.36.3.10. NECB Table 5.2.12.1.O
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN/CSA-~~P.8~~-09~~:22	Rendement thermique des générateurs autonomes d'air chaud à gaz~~-~~, industriels et commerciaux	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-O
CSA (Canadian Standards Association)	CAN/CSA-P.9-11	Test method for determining the performance of combined space and water heating systems (combos)	NBC 9.36.3.10.(3) NBC Table 9.36.3.10. NBC Table 9.36.4.2. NBC Table 9.36.5.15.C
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-P.9-11	Méthode d'essai pour déterminer le rendement des systèmes combinés de chauffage des locaux et de l'eau (combos)	CNB 9.36.3.10. 3) CNB Tableau 9.36.3.10. CNB Tableau 9.36.4.2. CNB Tableau 9.36.5.15.C
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-Série A220-06	Tuiles en béton pour couvertures	CNB 9.26.17.1. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-Série B45-02	Appareils sanitaires	CNP 2.2.2.2. 1)
CSA (Canadian Standards Association)	CAN/CSA-S269.3-M92	Concrete Formwork	NBC 4.1.1.3.(4)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-S269.3-M92	Coffrages	CNB 4.1.1.3. 4)
CSA (Canadian Standards Association)	~~CAN/CSA-~~S37~~-18~~:24	Antennas, towers, and antenna-supporting structures	NBC 4.1.6.15.(1) NBC 4.1.7.11.(1) CNB 4.1.6.15. 1) CNB 4.1.7.11. 1)

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CSA (Canadian Standards Association)	CAN/CSA-Z317.2-15	Special requirements for heating, ventilation, and air-conditioning (HVAC) systems in health care facilities	NBC 6.2.1.1.(1) NBC 6.3.2.15.(6)
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN/CSA-Z317.2-15	Systèmes de chauffage, de ventilation et de conditionnement d'air (CVCA) dans les établissements de santé : exigences particulières	CNB 6.2.1.1. 1) CNB 6.3.2.15. 6)
CSA (Canadian Standards Association)	~~CAN/CSA-~~Z662-~~15~~:23	Oil and gas pipeline systems	NBC 3.2.3.22.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	~~CAN/CSA-~~Z662-~~15~~:23	Réseaux de canalisations de pétrole et de gaz	CNB 3.2.3.22. 1)
CSA (Canadian Standards Association)	CAN3-A93-M82	Natural Airflow Ventilators for Buildings	NBC 9.19.1.2.(5) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	CAN3-A93-M82	Évents d'aération de bâtiments	CNB 9.19.1.2. 5) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	CSA B45.5-~~17~~:22/IAPMO Z124-~~2017~~2022	Plastic plumbing fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
CSA (Canadian Standards Association)	C22.1-~~18~~:24	Canadian Electrical Code, Part I (~~24th~~26th ~~edition~~Edition), Safety Standard for Electrical Installations	NBC 2.2.1.15.(1) NBC 3.3.6.2.(4) NBC 3.6.1.2.(1) NBC 3.6.2.1.(6) NBC 3.6.2.7.(1) NBC 6.2.1.5.(1) NBC 9.31.6.2.(2) NBC 9.33.5.2.(1) NBC 9.34.1.1.(1) NBC A-3.1.4.3.(1)(b)(i) NBC A-3.2.4.20.(9)(a) NBC A-3.3.6.2.(4) NBC A-9.10.22. NBC A-9.34.2. NBC A-9.35.2.2.(1) NFC 2.14.1.1.(1) NFC 4.1.4.1.(1) NFC 4.1.4.1.(2) NFC 5.1.2.1.(1) NFC 5.1.2.2.(1) NFC 5.3.1.10.(2) NFC 5.3.1.2.(2) NFC 5.3.1.2.(3) NFC 5.5.3.4.(1) NFC 5.6.1.9.(3) NFC A-4.10.3.3.(1) NFC A-5.1.2.1.(1) NFC A-5.5.3.4.(1) NECB A-7.2.1.1.

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CSA (Association canadienne de normalisation/Canadian Standards Association)	C22.1-~~18~~:24	Code canadien de l'électricité, ~~première~~Première partie (vingt-~~quatrième~~sixième édition), ~~norme~~Norme de sécurité relative aux installations électriques	CNB 2.2.1.15. 1) CNB 3.3.6.2. 4) CNB 3.6.1.2. 1) CNB 3.6.2.1. 6) CNB 3.6.2.7. 1) CNB 6.2.1.5. 1) CNB 9.31.6.2. 2) CNB 9.33.5.2. 1) CNB 9.34.1.1. 1) CNB A-3.1.4.3. 1)b)i) CNB A-3.2.4.20. 9)a) CNB A-3.3.6.2. 4) CNB A-9.10.22. CNB A-9.34.2. CNB A-9.35.2.2. 1) CNPI 2.14.1.1. 1) CNPI 4.1.4.1. 1) CNPI 4.1.4.1. 2) CNPI 5.1.2.1. 1) CNPI 5.1.2.2. 1) CNPI 5.3.1.10. 2) CNPI 5.3.1.2. 2) CNPI 5.3.1.2. 3) CNPI 5.5.3.4. 1) CNPI 5.6.1.9. 3) CNPI A-4.10.3.3. 1) CNPI A-5.1.2.1. 1) CNPI A-5.5.3.4. 1) CNÉB A-7.2.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	C22.2 N° 0.3-09	Test Methods for Electrical Wires and Cables	CNB 3.1.4.3. 1) CNB 3.1.4.3. 3) CNB 3.1.5.21. 1) CNB 3.1.5.21. 3) CNB 9.34.1.5. 1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	C22.2 N° 113-~~10~~:18	~~Ventilateurs~~Fans and ventilators	CNB 9.32.3.10. 7)
CSA (Association canadienne de normalisation/Canadian Standards Association)	C22.2 N° 141:15	Emergency Lighting Equipment	CNB 3.2.7.4. 2) CNB 3.4.5.1. 3) CNB 9.9.11.3. 3) CNB 9.9.12.3. 7)
CSA (Association canadienne de normalisation/Canadian Standards Association)	C22.2 N° 211.0-03	General Requirements and Methods of Testing for Nonmetallic Conduit	CNB 3.1.5.23. 1)
CSA (Canadian Standards Association)	C22.2 No. 0.3-09	Test methods for electrical wires and cables	NBC 3.1.4.3.(1) NBC 3.1.4.3.(3) NBC 3.1.5.21.(1) NBC 3.1.5.21.(3) NBC 9.34.1.5.(1)
CSA (Canadian Standards Association)	C22.2 No. 113-~~10~~:18	Fans and ~~Ventilators~~ventilators	NBC 9.32.3.10.(7)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	C22.2 No. 141:15	Emergency lighting equipment	NBC 3.2.7.4.(2) NBC 3.4.5.1.(3) NBC 9.9.11.3.(3) NBC 9.9.12.3.(7)
CSA (Canadian Standards Association)	C22.2 No. 211.0-03	General Requirements and Methods of Testing for Nonmetallic Conduit	NBC 3.1.5.23.(1)
CSA (Canadian Standards Association)	C282~~-15~~:19	Emergency electrical power supply for buildings	NBC 3.2.7.5.(1) NFC 6.5.1.1.(1) NFC 6.5.1.4.(1) NFC A-6.5.1.1.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	C282~~-15~~:19	Alimentation électrique de secours des bâtiments	CNB 3.2.7.5. 1) CNPI 6.5.1.1. 1) CNPI 6.5.1.4. 1) CNPI A-6.5.1.1. 2)
CSA (Canadian Standards Association)	C368.1:14	Energy performance of room air conditioners	NBC Table 9.36.3.10. NECB Table 5.2.12.1.G
CSA (Association canadienne de normalisation/Canadian Standards Association)	C368.1:14	Rendement énergétique des climatiseurs individuels	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-G
CSA (Association canadienne de normalisation/Canadian Standards Association)	C390~~-10~~:22	~~Méthodes~~Méthode d'essai, exigences de marquage et niveaux de rendement énergétique pour les moteurs à induction triphasés	CNÉB 7.2.4.1. 1)
CSA (Canadian Standards Association)	C390:~~10~~22	Test ~~methods~~method, marking requirements, and energy efficiency levels for three-phase induction motors	NECB 7.2.4.1.(1)
CSA (Canadian Standards Association)	C656-14	Performance standard for split-system and single-package air conditioners and heat pumps	NBC Table 9.36.3.10. NECB Table 5.2.12.1.A NECB Table 5.2.12.1.I
CSA (Association canadienne de normalisation/Canadian Standards Association)	C656-14	Norme de rendement des climatiseurs et des thermopompes à deux blocs et monoblocs	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-A CNÉB Tableau 5.2.12.1.-I
CSA (Canadian Standards Association)	C748-13	Performance of direct-expansion (DX) ground-source heat pumps	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10. NECB Table 5.2.12.1.F CNÉB Tableau 5.2.12.1.-F
CSA (Canadian Standards Association)	C802.3-15	Minimum efficiency values for power transformers	NECB 7.2.3.1.(1)

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CSA (Association canadienne de normalisation/Canadian Standards Association)	C802.3-15	Valeurs minimales de rendement pour les transformateurs de puissance	CNÉB 7.2.3.1. 1)
CSA (Canadian Standards Association)	C873.4-14	Building energy estimation methodology – Part 4 – Energy consumption for lighting	NECB 4.3.1.3.(1) NECB 4.3.1.3.(2) NECB 4.3.1.3.(3) NECB 4.3.1.3.(4) NECB 4.3.1.3.(5) CNÉB 4.3.1.3. 1) CNÉB 4.3.1.3. 2) CNÉB 4.3.1.3. 3) CNÉB 4.3.1.3. 4) CNÉB 4.3.1.3. 5)
CSA (Canadian Standards Association)	F280-12	Determining the required capacity of residential space heating and cooling appliances	NBC 9.33.5.1.(1) NBC A-9.36.3.2.(1) NBC A-9.36.5.15.(5)
CSA (Association canadienne de normalisation/Canadian Standards Association)	F280-12	Détermination de la puissance requise des appareils de chauffage et de refroidissement résidentiels	CNB 9.33.5.1. 1) CNB A-9.36.3.2. 1) CNB A-9.36.5.15. 5)
CSA (Canadian Standards Association)	G30.18-09	Carbon steel bars for concrete reinforcement	NBC 9.3.1.1.(4)
CSA (Association canadienne de normalisation/Canadian Standards Association)	G30.18-09	Barres d'acier au carbone pour l'armature du béton	CNB 9.3.1.1. 4)
CSA (Canadian Standards Association)	G40.21-13	Structural quality steel	NBC 4.2.3.8.(1) NBC 9.23.4.3.(2) NBC Table 5.9.1.1.
CSA (Association canadienne de normalisation/Canadian Standards Association)	G40.21-13	Acier de construction	CNB 4.2.3.8. 1) CNB 9.23.4.3. 2) CNB Tableau 5.9.1.1.
CSA (Canadian Standards Association)	O112.10-08	Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure)	NBC D-2.3.6. NBC Table 9.10.3.1.-B CNB D-2.3.6. CNB Tableau 9.10.3.1.-B
CSA (Canadian Standards Association)	O112.9:10	Evaluation of adhesives for structural wood products (exterior exposure)	NBC Table 9.10.3.1.-B CNB Tableau 9.10.3.1.-B
CSA (Canadian Standards Association)	O118.1-08	Western Red Cedar Shakes and Shingles	NBC 9.27.7.1.(1) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	O118.1-08	Bardeaux et bardeaux de fente en thuya géant	CNB 9.27.7.1. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B

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CSA (Canadian Standards Association)	O118.2-08	Eastern White Cedar Shingles	NBC 9.27.7.1.(1) NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA (Association canadienne de normalisation/Canadian Standards Association)	O118.2-08	Bardeaux en thuya occidental	CNB 9.27.7.1. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA (Canadian Standards Association)	O121-17	Douglas fir plywood	NBC 9.23.15.2.(1) NBC 9.23.16.2.(1) NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC Table 9.23.17.2.A
CSA (Association canadienne de normalisation/Canadian Standards Association)	O121-17	Contreplaqué en sapin de Douglas	CNB 9.23.15.2. 1) CNB 9.23.16.2. 1) CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB Tableau 9.23.17.2.A
CSA (Canadian Standards Association)	O141:05	Softwood Lumber	NBC 9.3.2.6.(1) NBC A-9.3.2.1.(1) NBC D-2.3.6. NBC D-2.4.1. NBC Table 5.9.1.1. CNB 9.3.2.6. 1) CNB A-9.3.2.1. 1) CNB D-2.3.6. CNB D-2.4.1. CNB Tableau 5.9.1.1.

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CSA (Canadian Standards Association)	O151-17	Canadian softwood plywood	NBC 9.23.15.2.(1) NBC 9.23.16.2.(1) NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC Table 9.23.17.2.A
CSA (Association canadienne de normalisation/Canadian Standards Association)	O151-17	Contreplaqué en bois de résineux canadien	CNB 9.23.15.2. 1) CNB 9.23.16.2. 1) CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB Tableau 9.23.17.2.A
CSA (Canadian Standards Association)	O153-13	Poplar plywood	NBC 9.23.15.2.(1) NBC 9.23.16.2.(1) NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.17.2.A
CSA (Association canadienne de normalisation/Canadian Standards Association)	O153-13	Contreplaqué en peuplier	CNB 9.23.15.2. 1) CNB 9.23.16.2. 1) CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A
CSA (Canadian Standards Association)	O177-06	Qualification Code for Manufacturers of Structural Glued-Laminated Timber	NBC 4.3.1.2.(1) NBC Table 9.23.12.3.-D NBC Table 9.23.4.2.-K
CSA (Association canadienne de normalisation/Canadian Standards Association)	O177-06	Règles de qualification des fabricants de bois de charpente lamellé-collé	CNB 4.3.1.2. 1) CNB Tableau 9.23.12.3.-D CNB Tableau 9.23.4.2.-K

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CSA (Canadian Standards Association)	O325-16	Construction sheathing	NBC 9.23.15.2.(1) NBC 9.23.15.4.(2) NBC 9.23.16.2.(1) NBC 9.23.16.3.(2) NBC 9.29.9.1.(2) NBC 9.29.9.2.(5) NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC Table 9.23.13.6.
CSA (Association canadienne de normalisation/Canadian Standards Association)	O325-16	Revêtements intermédiaires de construction	CNB 9.23.15.2. 1) CNB 9.23.15.4. 2) CNB 9.23.16.2. 1) CNB 9.23.16.3. 2) CNB 9.29.9.1. 2) CNB 9.29.9.2. 5) CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB Tableau 9.23.13.6.
CSA (Canadian Standards Association)	O437.0-93	OSB and Waferboard	NBC 9.23.15.2.(1) NBC 9.23.15.4.(2) NBC 9.23.16.2.(1) NBC 9.23.16.3.(2) NBC 9.27.10.1.(1) NBC 9.29.9.1.(2) NBC 9.30.2.2.(1) NBC A-9.23.15.4.(2) NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC Table 9.23.17.2.A

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CSA (Association canadienne de normalisation/Canadian Standards Association)	O437.0-93	Panneaux de particules orientées et panneaux de grandes particules	CNB 9.23.15.2. 1) CNB 9.23.15.4. 2) CNB 9.23.16.2. 1) CNB 9.23.16.3. 2) CNB 9.27.10.1. 1) CNB 9.29.9.1. 2) CNB 9.30.2.2. 1) CNB A-9.23.15.4. 2) CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB Tableau 9.23.17.2.A
CSA (Canadian Standards Association)	O86:~~19~~24	Engineering design in wood	NBC 4.3.1.1.(1) NBC A-5.1.4.1.(6)(b) and (c) NBC A-9.15.2.4.(1) NBC A-9.23.4.2. NBC D-2.11.3. NBC D-2.11.4. NBC Table 4.1.8.9.
CSA (Association canadienne de normalisation/Canadian Standards Association)	O86:~~19~~24	~~Règles~~Engineering ~~de~~design ~~calcul~~in ~~des charpentes en bois~~wood	CNB 4.3.1.1. 1) CNB A-5.1.4.1. 6)b) et c) CNB A-9.15.2.4. 1) CNB A-9.23.4.2. CNB D-2.11.3. CNB D-2.11.4. CNB Tableau 4.1.8.9.
CSA (Canadian Standards Association)	PLUS 2203 (3rd. ed. pub. 2001)	Hazardous Locations: A Guide for the Design, Testing, Construction, and Installation of Equipment in Explosive Atmospheres	NFC A-4.1.4.1.(1) CNPI A-4.1.4.1. 1)
CSA (Canadian Standards Association)	P.10-07	Performance of Integrated Mechanical Systems for Residential Heating and Ventilation	NBC 9.36.3.9.(2) NBC Table 9.36.3.10. NBC Table 9.36.4.2. NBC Table 9.36.5.15.C CNB 9.36.3.9. 2) CNB Tableau 9.36.3.10. CNB Tableau 9.36.4.2. CNB Tableau 9.36.5.15.C

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CSA (Canadian Standards Association)	P.6-09	Test method for measuring thermal efficiency of gas-fired pool heaters	NBC Table 9.36.4.2. CNB Tableau 9.36.4.2. NECB Table 6.2.2.1. CNÉB Tableau 6.2.2.1.
~~CSA (Canadian Standards Association)~~AISI (American Iron and Steel Institute)	~~S136~~S100-16	North American ~~specification~~Specification for the ~~design~~Design of ~~cold~~Cold ~~formed~~Formed ~~steel~~Steel ~~structural~~Structural ~~members (using the Appendix B provisions applicable to Canada)~~Members	NBC 4.1.8.1.(5) NBC 4.3.4.2.(1) NBC Table 4.1.8.9.
~~CSA (Association canadienne de normalisation/Canadian Standards Association)~~AISI (American Iron and Steel Institute)	~~S136~~S100-16	~~Spécification~~North ~~nord~~American Specification for the Design of Cold-~~américaine~~Formed ~~pour~~Steel ~~le~~Structural ~~calcul des éléments de charpente en acier formés à froid (utiliser l'annexe B qui s'applique au Canada)~~Members	CNB 4.1.8.1. 5) CNB 4.3.4.2. 1) CNB Tableau 4.1.8.9.
CSA (Canadian Standards Association)	S157-17/S157.1-17	Strength design in aluminum/Commentary on CSA S157-17, Strength design in aluminum	NBC 4.3.5.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	S157-17/S157.1-17	Calcul de la résistance mécanique des éléments en aluminium/Commentaire sur la CSA S157-17, Calcul de la résistance mécanique des éléments en aluminium	CNB 4.3.5.1. 1)
CSA (Canadian Standards Association)	S16:~~19~~24	Design and construction of steel structures	NBC 4.3.4.1.(1) NBC A-4.1.5.11. NBC A-4.3.4.1.(1) NBC A-Table 4.1.8.9. NBC D-2.6.6. NBC Table 4.1.8.9.
CSA (Association canadienne de normalisation/Canadian Standards Association)	S16:~~19~~24	~~Règles~~Design ~~de~~and ~~calcul~~construction ~~des~~of ~~charpentes~~steel ~~en acier~~structures	CNB 4.3.4.1. 1) CNB A-4.1.5.11. CNB A-4.3.4.1. 1) CNB A-Tableau 4.1.8.9. CNB D-2.6.6. CNB Tableau 4.1.8.9.
CSA (Canadian Standards Association)	S269.1-16	Falsework and formwork	NBC 4.1.1.3.(4) NBC A-9.15.1.1.(1)(c) and 9.20.1.1.(1)(b)
CSA (Association canadienne de normalisation/Canadian Standards Association)	S269.1-16	Ouvrages provisoires et coffrages	CNB 4.1.1.3. 4) CNB A-9.15.1.1. 1)c) et 9.20.1.1. 1)b)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	S269.2-16	Access scaffolding for construction purposes	NBC 4.1.1.3.(4)
CSA (Association canadienne de normalisation/Canadian Standards Association)	S269.2-16	Échafaudages d'accès pour les travaux de construction	CNB 4.1.1.3. 4)
CSA (Canadian Standards Association)	S304~~-14~~:24	Design of masonry structures	NBC 4.3.2.1.(1) NBC A-5.1.4.1.(6)(b) and (c) NBC Table 4.1.8.9.
CSA (Association canadienne de normalisation/Canadian Standards Association)	S304~~-14~~:24	Calcul des ouvrages en maçonnerie	CNB 4.3.2.1. 1) CNB A-5.1.4.1. 6)b) et c) CNB Tableau 4.1.8.9.
CSA (Canadian Standards Association)	S367-12	Air-, cable-, and frame-supported membrane structures	NBC 4.4.1.1.(1) CNB 4.4.1.1. 1)
CSA (Canadian Standards Association)	S406-16	Specification of permanent wood foundations for housing and small buildings	NBC 9.15.2.4.(1) NBC 9.16.5.1.(1) NBC A-9.15.2.4.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	S406-16	Spécification visant les fondations permanentes en bois pour les maisons et petits bâtiments	CNB 9.15.2.4. 1) CNB 9.16.5.1. 1) CNB A-9.15.2.4. 1)
CSA (Canadian Standards Association)	S413-14	Parking structures	NBC 4.4.2.1.(1) NBC A-4.4.2.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	S413-14	Parking structures	CNB 4.4.2.1. 1) CNB A-4.4.2.1. 1)
CSA (Canadian Standards Association)	S478:19	Durability in buildings	NBC A-5.1.4.2.
CSA (Association canadienne de normalisation/Canadian Standards Association)	S478:19	Durabilité des bâtiments	CNB A-5.1.4.2.
CSA (Canadian Standards Association)	S6~~-14~~:19	Canadian Highway Bridge Design Code	NBC A-Table 4.1.5.3. NBC A-Table 4.1.5.9.
CSA (Association canadienne de normalisation/Canadian Standards Association)	S6~~-14~~:19	Code canadien sur le calcul des ponts routiers	CNB A-Tableau 4.1.5.3. CNB A-Tableau 4.1.5.9.
CSA (Canadian Standards Association)	S832:14	Seismic risk reduction of operational and functional components (OFCs) of buildings	NBC A-Table 4.1.8.18.
CSA (Association canadienne de normalisation/Canadian Standards Association)	S832:14	Réduction du risque sismique associé à la défaillance des composants fonctionnels et opérationnels des bâtiments (CFO) dans les bâtiments	CNB A-Tableau 4.1.8.18.

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CSA (Canadian Standards Association)	W117.2:19	Safety in welding, cutting and allied processes	NFC 5.2.1.1.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	W117.2:19	Règles de sécurité en soudage, coupage et procédés connexes	CNPI 5.2.1.1. 2)
CSA (Canadian Standards Association)	Z240 MH Series-16	Manufactured homes	NBC A-1.1.1.1.(2) of Division A
CSA (Association canadienne de normalisation/Canadian Standards Association)	Z240 MM Série-16	Maisons usinées	CNB A-1.1.1.1. 2) de la division A
CSA (Canadian Standards Association)	Z240.10.1:19	Site preparation, foundation, and installation of buildings	NBC 9.15.1.3.(1) NBC 9.23.6.3.(1) NBC A-1.1.1.1.(2) of Division A
CSA (Association canadienne de normalisation/Canadian Standards Association)	Z240.10.1:19	Aménagement du terrain, construction des fondations et installation de bâtiments	CNB 9.15.1.3. 1) CNB 9.23.6.3. 1) CNB A-1.1.1.1. 2) de la division A
CSA (Canadian Standards Association)	Z240.2.1-16	Structural requirements for manufactured homes	NBC 9.12.2.2.(6) NBC 9.15.1.3.(1) NBC A-1.1.1.1.(2) of Division A
CSA (Association canadienne de normalisation/Canadian Standards Association)	Z240.2.1-16	Exigences techniques relatives aux maisons usinées	CNB 9.12.2.2. 6) CNB 9.15.1.3. 1) CNB A-1.1.1.1. 2) de la division A
CSA (Canadian Standards Association)	Z245.1-14;22	Steel pipe	NFC 4.5.2.1.(4) CNPI 4.5.2.1. 4)
CSA (Canadian Standards Association)	Z32-15	Electrical safety and essential electrical systems in health care facilities	NBC 3.2.7.3.(4) NBC 3.2.7.6.(1) NBC A-3.2.7.6.(1) NFC 6.5.1.1.(2) NFC A-6.5.1.1.(2)
CSA (Association canadienne de normalisation/Canadian Standards Association)	Z32-15	Sécurité en matière d'électricité et réseaux électriques essentiels des établissements de santé	CNB 3.2.7.3. 4) CNB 3.2.7.6. 1) CNB A-3.2.7.6. 1) CNPI 6.5.1.1. 2) CNPI A-6.5.1.1. 2)
CSA (Canadian Standards Association)	Z7396.1-17	Medical gas pipeline systems – Part 1: Pipelines for medical gases, medical vacuum, medical support gases, and anaesthetic gas scavenging systems	NBC 3.7.3.1.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)	Z7396.1-17	Réseaux de distribution de gaz médicaux – Partie 1 : Canalisations pour les gaz médicaux, l'aspiration médicale, les gaz de soutien médical et les systèmes d'évacuation des gaz d'anesthésie	CNB 3.7.3.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA (Canadian Standards Association)	6.19-01	Residential carbon monoxide alarming devices	NBC 6.9.3.1.(2) NBC 9.32.3.9.(2) NBC 9.32.3.9.(3) CNB 6.9.3.1. 2) CNB 9.32.3.9. 2) CNB 9.32.3.9. 3)
CSA (Canadian Standards Association)/ICC (International Code Council)	CSA B805-18/ICC 805-2018	Rainwater harvesting systems	NPC 2.7.2.4.(4) NPC A-2.7.2.4.(1)
CSA (Association canadienne de normalisation/Canadian Standards Association)/ICC (International Code Council)	CSA B805-18/ICC 805-2018	Systèmes de récupération d'eau de pluie	CNP 2.7.2.4. 4) CNP A-2.7.2.4. 1)
CSSBI (Canadian Sheet Steel Building Institute)	23M-2016	Standard for Residential Steel Cladding	NBC 9.27.11.1.(1) NBC A-9.27.11.1.(1)
ICTAB (Institut canadien de la tôle d'acier pour le bâtiment)	23M-2016	Norme pour le bardage résidentiel en acier	CNB 9.27.11.1. 1) CNB A-9.27.11.1. 1)
CTI (Cooling Technology Institute)	ATC-105DS-18	Acceptance Test Code for Dry Fluid Coolers	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CTI (Cooling Technology Institute)	ATC-105S-11	Acceptance Test Code for Closed Circuit Cooling Towers	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CTI (Cooling Technology Institute)	ATC-105-00	Acceptance Test Code	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CTI (Cooling Technology Institute)	ATC-106-11	Acceptance Test Code for Mechanical Draft Evaporative Vapor Condensers	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CTI (Cooling Technology Institute)	STD-201RS-04	Standard for the Certification of Water Cooling Tower Thermal Performance	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CWC (Canadian Wood Council)	1997	Introduction to Wood Building Technology	NBC A-9.27.3.8.(4)
CCB (Conseil canadien du bois)	1997	Introduction to Wood Building Technology	CNB A-9.27.3.8. 4)
CWC (Canadian Wood Council)	2000	Wood Reference Handbook	NBC A-9.27.3.8.(4)
CCB (Conseil canadien du bois)	2000	Manuel de la construction en bois	CNB A-9.27.3.8. 4)
CWC (Canadian Wood Council)	2009	The Span Book	NBC A-9.23.4.2.

Issuing Agency	Document Number	Title of Document	Code Reference
CCB (Conseil canadien du bois)	2009	Le livre des portées	CNB A-9.23.4.2.
CWC (Canadian Wood Council)	2014	Engineering Guide for Wood Frame Construction	NBC 9.23.13.1.(2) NBC 9.23.13.2.(2) NBC 9.23.13.3.(2) NBC 9.4.1.1.(1) NBC A-9.23.13.1. NBC A-9.4.1.1.
CCB (Conseil canadien du bois)	2014	Engineering Guide for Wood Frame Construction	CNB 9.23.13.1. 2) CNB 9.23.13.2. 2) CNB 9.23.13.3. 2) CNB 9.4.1.1. 1) CNB A-9.23.13.1. CNB A-9.4.1.1.
DASMA (Door and Access Systems Manufacturers Association International)	ANSI/DASMA 105-2017	Test Method for Thermal Transmittance and Air Infiltration of Garage Doors	NECB 3.2.4.3.(8) CNÉB 3.2.4.3. 8)
DIN (Deutsches Institut für Normung e. V.)	EN 303-5:2012	Heating boilers – Part 5: Heating boilers for solid fuels, manually and automatically stoked, nominal heat output of up to 500 kW – Terminology, requirements, testing and marking; German version EN 303-5:2012	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10. NECB Table 5.2.12.1.P CNÉB Tableau 5.2.12.1.-P
DIN (Deutsches Institut für Normung e. V.)	EN 416:2019	Gas-fired overhead radiant tube heaters and radiant tube heater systems for non-domestic use – Safety and energy efficiency; German version EN 416:2019	NECB Table 5.2.12.1.P CNÉB Tableau 5.2.12.1.-P
DIN (Deutsches Institut für Normung e. V.)	EN 419:2019	Gas-fired overhead luminous radiant heaters for non-domestic use – Safety and energy efficiency; German version EN 419:2019	NECB Table 5.2.12.1.P CNÉB Tableau 5.2.12.1.-P
DOE (Department of Energy)	10 CFR, Part 430-2011	Energy, Energy Conservation Program for Consumer Products	NBC Table 9.36.4.2. CNB Tableau 9.36.4.2.
DOE (Department of Energy)	10 CFR, Part 430-2011	Energy, Energy Conservation Program for Consumer Products	NECB Table 5.2.12.1.O NECB Table 6.2.2.1. CNÉB Tableau 5.2.12.1.-O CNÉB Tableau 6.2.2.1.

Issuing Agency	Document Number	Title of Document	Code Reference
DOE (Department of Energy)	10 CFR, Part 431-2011	Energy, Energy Efficiency Program for Certain Commercial and Industrial Equipment	NBC Table 9.36.3.10. NBC Table 9.36.4.2. CNB Tableau 9.36.3.10. CNB Tableau 9.36.4.2. NECB Table 5.2.12.1.N NECB Table 6.2.2.1. CNÉB Tableau 5.2.12.1.-N CNÉB Tableau 6.2.2.1.
ECC (EIFS Council of Canada)	2013	EIFS Practice Manual	NBC A-5.9.4.1.(1) NBC A-9.27.14.1.(1) CNB A-5.9.4.1. 1) CNB A-9.27.14.1. 1)
EPA (Environmental Protection Agency)	40 CFR, Part 60-2008	Protection of Environment, Standards of Performance for New Stationary Sources	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10. NECB Table 5.2.12.1.P CNÉB Tableau 5.2.12.1.-P
EPA (Environmental Protection Agency)	510-B-93-004	Doing Inventory Control Right for Underground Storage Tanks	NFC A-4.4.2.1.(2) CNPI A-4.4.2.1. 2)
EPA (Environmental Protection Agency)	510-B-95-009	Introduction To Statistical Inventory Reconciliation For Underground Storage Tanks	NFC A-4.4.2.1.(4) CNPI A-4.4.2.1. 4)
EPA (Environmental Protection Agency)	530/UST-90/007	Standard Test Procedures For Evaluating Leak Detection Methods: Statistical Inventory Reconciliation Methods	NFC A-4.4.2.1.(4) CNPI A-4.4.2.1. 4)
EPA (Environmental Protection Agency)	530/UST-90/008	Standard Test Procedures For Evaluating Leak Detection Methods: Vapor-Phase Out-of-Tank Product Detectors	NFC A-4.4.2.1.(3) CNPI A-4.4.2.1. 3)
EPA (Environmental Protection Agency)	530/UST-90/009	Standard Test Procedures For Evaluating Leak Detection Methods: Liquid-Phase Out-of-Tank Product Detectors	NFC A-4.4.2.1.(3) CNPI A-4.4.2.1. 3)
EPA (Environmental Protection Agency)	625/R-92/016 (1994)	Radon Prevention in the Design and Construction of Schools and Other Large Buildings	NBC 6.2.1.1.(1) NBC A-5.4.1.1. CNB 6.2.1.1. 1) CNB A-5.4.1.1.
FEMA (Federal Emergency Management Agency)	P-750-2009	NEHRP Recommended Seismic Provisions for New Buildings and Other Structures	NBC A-4.1.8.18.(14) and (15) CNB A-4.1.8.18. 14) et 15)

Issuing Agency	Document Number	Title of Document	Code Reference
FEMA (Federal Emergency Management Agency)	450-1-2003	NEHRP Recommended Provisions for Seismic Regulations for New Buildings and Other Structures	NBC A-4.1.8.18.(14) and (15) CNB A-4.1.8.18. 14) et 15)
FLL (German Landscape Research, Development and Construction Society)	2008	Guidelines for the Planning, Construction and Maintenance of Green Roofing	NBC A-5.6.1.2.(2) CNB A-5.6.1.2. 2)
FM Global (FM Global)	Data Sheet 7-50 (2014)	Compressed Gases in Portable Cylinders	NFC A-3.2.8.2.(2) CNPI A-3.2.8.2. 2)
FM Global (FM Global)	Data Sheet 7-83 (2015)	Drainage and Containment Systems for Ignitable Liquids	NFC A-4.1.6.1.(1) CNPI A-4.1.6.1. 1)
FPI (FP Innovations — Forintek Division (formerly FCC – Forintek Canada Corporation))	Project 43-10C-024 (1988)	Deflection Serviceability Criteria for Residential Floors	NBC A-9.23.4.2.(2)
FPI ()	Projet 43-10C-024 (1988)	Deflection Serviceability Criteria for Residential Floors	CNB A-9.23.4.2. 2)
SC (Santé Canada)	DORS/2001-269	Règlement sur les produits chimiques et contenants de consommation (2001)	CNPI A-3.2.5.2. 1)
SC (Santé Canada)	DORS/2015-17	Règlement sur les produits dangereux	CNB 1.4.1.2. 1) de la division A CNB A-3.3.1.2. 1) CNPI 1.4.1.2. 1) de la division A CNPI 3.1.2.1. 1) CNPI 3.2.7.1. 3) CNPI 3.3.4.1. 3) CNPI A-3.2.5.2. 1) CNPI A-3.2.7.6. 3) CNPI A-4.2.2.3. 2) CNPI A-Tableau 3.2.7.1. CNPI Tableau 3.2.7.1. CNPI Tableau 3.2.7.6.
HC (Health Canada)	H46-2/90-156E	Exposure Guidelines for Residential Indoor Air Quality	NBC A-6.3.1.5. NBC A-9.25.5.2.
SC (Santé Canada)	H46-2/90-156F	Directives d'exposition concernant la qualité de l'air des résidences	CNB A-6.3.1.5. CNB A-9.25.5.2.
SC (Santé Canada)	L.C. 2002, ch. 28	Loi sur les produits antiparasitaires	CNPI 4.2.3.2. 2)
SC (Santé Canada)	L.R.C. (1985), ch. H-3	Loi sur les produits dangereux	CNB A-1.4.1.2. 1) de la division A CNB A-9.25.2.2. 2) CNPI 4.2.3.2. 2)
HC (Health Canada)	R.S.C. 1985, c. H-3	Hazardous Products Act	NBC A-1.4.1.2.(1) of Division A NBC A-9.25.2.2.(2) NFC 4.2.3.2.(2)
HC (Health Canada)	S.C. 2002, c. 28	Pest Control Products Act	NFC 4.2.3.2.(2)

Issuing Agency	Document Number	Title of Document	Code Reference
SC (Santé Canada)	SIMDUT 1988	Système d'information sur les matières dangereuses utilisées au travail (SIMDUT)	CNB A-1.4.1.2. 1) de la division A CNB A-3.3.1.2. 1) CNPI 3.1.2.1. 1) CNPI 3.2.7.1. 3) CNPI 3.2.7.15. 2) CNPI 3.3.4.1. 3) CNPI A-1.4.1.2. 1) de la division A CNPI A-3.2.7.1. 3) CNPI A-3.2.7.1. 3)b) CNPI A-3.2.7.13. 1) CNPI A-3.2.7.14. 1) CNPI A-3.2.7.6. 3) CNPI A-Tableau 3.2.7.1. CNPI Tableau 3.2.7.1. CNPI Tableau 3.2.7.6.
HC (Health Canada)	SOR/2001-269	Consumer Chemicals and Containers Regulations, 2001	NFC A-3.2.5.2.(1)
HC (Health Canada)	SOR/2015-17	Hazardous Products Regulations	NBC 1.4.1.2.(1) of Division A NBC A-3.3.1.2.(1) NFC 1.4.1.2.(1) of Division A NFC 3.1.2.1.(1) NFC 3.2.7.1.(3) NFC 3.3.4.1.(3) NFC A-3.2.5.2.(1) NFC A-3.2.7.6.(3) NFC A-4.2.2.3.(2) NFC A-Table 3.2.7.1. NFC Table 3.2.7.1. NFC Table 3.2.7.6.
HC (Health Canada)	WHMIS 1988	Workplace Hazardous Materials Information System (WHMIS)	NBC A-1.4.1.2.(1) of Division A NBC A-3.3.1.2.(1) NFC 3.1.2.1.(1) NFC 3.2.7.1.(3) NFC 3.2.7.15.(2) NFC 3.3.4.1.(3) NFC A-1.4.1.2.(1) of Division A NFC A-3.2.7.1.(3) NFC A-3.2.7.1.(3)(b) NFC A-3.2.7.13.(1) NFC A-3.2.7.14.(1) NFC A-3.2.7.6.(3) NFC A-Table 3.2.7.1. NFC Table 3.2.7.1. NFC Table 3.2.7.6.
HC (Health Canada)	2004	Fungal Contamination in Public Buildings: Health Effects and Investigation Methods	NBC A-5.5.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
SC (Santé Canada)	2004	Contamination fongique dans les immeubles publics : Effets sur la santé et méthodes d'évaluation	CNB A-5.5.1.1.
HC (Health Canada)	2007	Radon: A Guide for Canadian Homeowners	NBC A-5.4.1.1. NBC A-6.2.1.1. NBC A-9.13.4.3.
SC (Santé Canada)	2007	Le radon : guide à l'usage des propriétaires canadiens	CNB A-5.4.1.1. CNB A-6.2.1.1. CNB A-9.13.4.3.
HC (Health Canada)	2008	Guide for Radon Measurements in Public Buildings (Schools, Hospitals, Care Facilities, Detention Centres)	NBC A-5.4.1.1. NBC A-6.2.1.1.
HC (Health Canada)	2008	Guide for Radon Measurements in Residential Dwellings (Homes)	NBC A-9.13.4.3.
SC (Santé Canada)	2008	Guide sur les mesures du radon dans les édifices publics (écoles, hôpitaux, établissements de soins et centres de détention)	CNB A-5.4.1.1. CNB A-6.2.1.1.
SC (Santé Canada)	2008	Guide sur les mesures du radon dans les maisons	CNB A-9.13.4.3.
HPVA (Hardwood Plywood and Veneer Association)	ANSI/HPVA HP-1-2009	American National Standard for Hardwood and Decorative Plywood	NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC Table 5.9.1.1. CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB Tableau 5.9.1.1.
HRAI (Heating, Refrigeration and Air Conditioning Institute of Canada)	2017 Edition	HRAI Digest	NBC 6.2.1.1.(1) NBC 9.32.2.3.(4) NBC 9.32.3.2.(1) NBC 9.33.4.1.(1) NBC A-9.36.3.2.(1) NBC A-9.36.3.2.(2) NBC A-9.36.3.4.(1) CNB 6.2.1.1. 1) CNB 9.32.2.3. 4) CNB 9.32.3.2. 1) CNB 9.33.4.1. 1) CNB A-9.36.3.2. 1) CNB A-9.36.3.2. 2) CNB A-9.36.3.4. 1) NECB 1.1.4.2.(1) NECB A-5.2.1.1.(1) CNÉB 1.1.4.2. 1) CNÉB A-5.2.1.1. 1)
HVI (Home Ventilating Institute)	HVI Publication 911	Certified Home Ventilating Products Directory	NBC A-9.36.3.9.(3) CNB A-9.36.3.9. 3) NECB A-5.2.10.4.(2) CNÉB A-5.2.10.4. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
HVI (Home Ventilating Institute)	HVI Publication 915-2013	Loudness Testing and Rating Procedure	NBC 9.32.3.10.(2) NBC Table 9.32.3.10.B CNB 9.32.3.10. 2) CNB Tableau 9.32.3.10.B
HVI (Home Ventilating Institute)	HVI Publication 916-2013	Airflow Test Procedure	NBC 9.32.3.10.(1) CNB 9.32.3.10. 1)
ICC (International Code Council)	ICC 900/SRCC 300-2015	Solar Thermal System Standard	NECB Table 6.2.2.1. CNÉB Tableau 6.2.2.1.
ICC (International Code Council)	400-2012	Standard on the Design and Construction of Log Structures	NBC 9.36.2.2.(5) NBC A-9.36.2.2.(5) CNB 9.36.2.2. 5) CNB A-9.36.2.2. 5)
IEC (International Electrotechnical Commission)	60268-16:2011	Sound system equipment – Part 16: Objective rating of speech intelligibility by speech transmission index	NBC A-3.2.4.22.(1)(b) CNB A-3.2.4.22. 1)b)
IES (Illuminating Engineering Society)	ANSI/IES RP-28-07	Lighting and the Visual Environment for Senior Living	NECB A-8.4.3.2.(2) NECB Table 4.2.1.6. NECB Table 4.3.2.10.A CNÉB A-8.4.3.2. 2) CNÉB Tableau 4.2.1.6. CNÉB Tableau 4.3.2.10.A
IES (Illuminating Engineering Society)	HB-10-11	The Lighting Handbook, 10th Edition	NECB A-Table 4.3.2.8. CNÉB A-Tableau 4.3.2.8.
IMO (International Maritime Organization)	2012	International Maritime Dangerous Goods Code	NFC 3.3.4.8.(1)
OMI (Organisation maritime internationale)	2012	Code maritime international des marchandises dangereuses	CNPI 3.3.4.8. 1)
ISO (International Organization for Standardization)	10848-1:2006	Acoustics – Laboratory measurement of the flanking transmission of airborne and impact sound between adjoining rooms – Part 1: Frame document	NBC 5.8.1.4.(2) NBC 5.8.1.4.(3) NBC 5.8.1.5.(2) NBC 5.8.1.5.(3)
ISO (Organisation internationale de normalisation)	10848-1:2006	Acoustique – Mesurage en laboratoire des transmissions latérales du bruit aérien et des bruits de choc entre pièces adjacentes – Partie 1 : Document cadre	CNB 5.8.1.4. 2) CNB 5.8.1.4. 3) CNB 5.8.1.5. 2) CNB 5.8.1.5. 3)
ISO (International Organization for Standardization)	13790:2008	Energy performance of buildings – Calculation of energy use for space heating and cooling	NECB 1.1.4.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ISO (Organisation internationale de normalisation)	13790:2008	Performance énergétique des bâtiments – Calcul des besoins d'énergie pour le chauffage et le refroidissement des locaux	CNÉB 1.1.4.2. 1)
ISO (International Organization for Standardization)	14683:2007	Thermal bridges in building construction – Linear thermal transmittance – Simplified methods and default values	NECB 3.1.1.5.(5)
ISO (Organisation internationale de normalisation)	14683:2007	Ponts thermiques dans les bâtiments – Coefficient linéique de transmission thermique – Méthodes simplifiées et valeurs par défaut	CNÉB 3.1.1.5. 5)
ISO (International Organization for Standardization)	15712-1:2005	Building acoustics - Estimation of acoustic performance of buildings from the performance of elements - Part 1: Airborne sound insulation between rooms	NBC 5.8.1.4.(1) NBC 5.8.1.4.(2) NBC 5.8.1.4.(4) NBC 5.8.1.4.(5) NBC 5.8.1.4.(6) NBC 5.8.1.5.(1) NBC 5.8.1.5.(2) NBC 5.8.1.5.(5) NBC 5.8.1.5.(6)
ISO (Organisation internationale de normalisation)	15712-1:2005	Acoustique du bâtiment – Calcul de la performance acoustique des bâtiments à partir de la performance des éléments – Partie 1 : Isolement acoustique aux bruits aériens entre des locaux	CNB 5.8.1.4. 1) CNB 5.8.1.4. 2) CNB 5.8.1.4. 4) CNB 5.8.1.4. 5) CNB 5.8.1.4. 6) CNB 5.8.1.5. 1) CNB 5.8.1.5. 2) CNB 5.8.1.5. 5) CNB 5.8.1.5. 6)
ISO (International Organization for Standardization)	3864-1:2011	Graphical symbols – Safety colours and safety signs – Part 1: Design principles for safety signs and safety markings	NBC 3.4.5.1.(2) NBC 9.9.11.3.(2)
ISO (Organisation internationale de normalisation)	3864-1:2011	Symboles graphiques – Couleurs de sécurité et signaux de sécurité – Partie 1 : Principes de conception pour les signaux de sécurité et les marquages de sécurité	CNB 3.4.5.1. 2) CNB 9.9.11.3. 2)
ISO (International Organization for Standardization)	7010:2011	Graphical symbols – Safety colours and safety signs – Registered safety signs	NBC 3.4.5.1.(2) NBC 9.9.11.3.(2) NBC A-3.4.5.1.(2)(c)
ISO (Organisation internationale de normalisation)	7010:2011	Symboles graphiques – Couleurs de sécurité et signaux de sécurité – Signaux de sécurité enregistrés	CNB 3.4.5.1. 2) CNB 9.9.11.3. 2) CNB A-3.4.5.1. 2)c)
ISO (International Organization for Standardization)	7240-19:2007	Fire detection and alarm systems – Part 19: Design, installation, commissioning and service of sound systems for emergency purposes	NBC A-3.2.4.22.(1)(b)
ISO (Organisation internationale de normalisation)	7240-19:2007	Systèmes de détection et d'alarme d'incendie – Partie 19 : Conception, installation, prise en charge et entretien des systèmes sonores pour les besoins de secours	CNB A-3.2.4.22. 1)b)

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ISO (International Organization for Standardization)	7731:2003	Ergonomics – Danger signals for public and work areas – Auditory danger signals	NBC A-3.2.4.22.(1)(b)
ISO (Organisation internationale de normalisation)	7731:2003	Ergonomie – Signaux de danger pour lieux publics et lieux de travail – Signaux de danger auditifs	CNB A-3.2.4.22. 1)b)
ISO (International Organization for Standardization)	8201:1987	Acoustics – Audible emergency evacuation signal	NBC 3.2.4.18.(2) NBC A-3.2.4.18.(2)
ISO (Organisation internationale de normalisation)	8201:1987	Acoustique – Signal sonore d'évacuation d'urgence	CNB 3.2.4.18. 2) CNB A-3.2.4.18. 2)
McGraw-Hill (McGraw-Hill Ryerson)	2009	International Plumbing Codes Handbook	NPC A-2.6.3. CNP A-2.6.3.
NACE (The National Association of Corrosion Engineers)	SP0169-2013	Control of External Corrosion on Underground or Submerged Metallic Piping Systems	NFC 4.5.3.1.(1) CNPI 4.5.3.1. 1)
NACE (The National Association of Corrosion Engineers)	SP0285-2011-SG	Corrosion Control of Underground Storage Tank Systems by Cathodic Protection	NFC 4.3.10.1.(1) CNPI 4.3.10.1. 1)
NEMA (National Electrical Manufacturers Association)	ANSI_ANSLG C82.11:2011	American National Standard for Lamp Ballasts–High-Frequency Fluorescent Lamp Ballasts	NECB 4.2.1.2.(2) CNÉB 4.2.1.2. 2)
NEMA (National Electrical Manufacturers Association)	SB 50:2008	Emergency Communications Audio Intelligibility Applications Guide	NBC A-3.2.4.22.(1)(b) CNB A-3.2.4.22. 1)b)
NFPA ()	Édition 2010	Fire Protection Guide to Hazardous Materials	CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	101-2018	Life Safety Code	NBC 3.3.2.1.(2) NBC 3.3.2.1.(3) NBC A-3.3.2.1.(2) CNB 3.3.2.1. 2) CNB 3.3.2.1. 3) CNB A-3.3.2.1. 2)
NFPA (National Fire Protection Association)	10-~~2013~~2018	Standard for Portable Fire Extinguishers	NFC 2.1.5.1.(3) NFC 6.2.1.1.(1) CNPI 2.1.5.1. 3) CNPI 6.2.1.1. 1)
NFPA (National Fire Protection Association)	105-~~2013~~2019	Standard for Smoke Door Assemblies and Other Opening Protectives	NBC 3.1.8.5.(3) NBC 3.1.8.5.(7) CNB 3.1.8.5. 3) CNB 3.1.8.5. 7)
NFPA (National Fire Protection Association)	12A-2015	Standard on Halon 1301 Fire Extinguishing Systems	NFC 2.1.3.5.(3) NFC A-2.1.3.5.(3)(c) and (d) CNPI 2.1.3.5. 3) CNPI A-2.1.3.5. 3)c) et d)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA (National Fire Protection Association)	12B-1990	Standard on Halon 1211 Fire Extinguishing Systems	NFC 2.1.3.5.(3) NFC A-2.1.3.5.(3)(c) and (d) CNPI 2.1.3.5. 3) CNPI A-2.1.3.5. 3)c) et d)
NFPA (National Fire Protection Association)	120-2015	Standard for Fire Prevention and Control in Coal Mines	NFC A-5.3.1.3.(2) CNPI A-5.3.1.3. 2)
NFPA (National Fire Protection Association)	12-~~2015~~**2018**	Standard on Carbon Dioxide Extinguishing Systems	NFC 2.1.3.5.(3) CNPI 2.1.3.5. 3)
NFPA (National Fire Protection Association)	13D-~~2016~~**2019**	Standard for the Installation of Sprinkler Systems in One- and Two-Family Dwellings and Manufactured Homes	NBC 3.2.4.1.(2) NBC 3.2.5.12.(3) NBC 3.2.7.9.(4) NBC 9.10.18.2.(3) NBC 9.10.2.2.(2) NBC A-3.2.5.12.(2) NBC A-3.2.5.12.(6) NBC A-3.2.5.13.(1) CNB 3.2.4.1. 2) CNB 3.2.5.12. 3) CNB 3.2.7.9. 4) CNB 9.10.18.2. 3) CNB 9.10.2.2. 2) CNB A-3.2.5.12. 2) CNB A-3.2.5.12. 6) CNB A-3.2.5.13. 1) NPC 2.6.3.1.(3) CNP 2.6.3.1. 3)
NFPA (National Fire Protection Association)	13R-2019	Standard for the Installation of Sprinkler Systems in Low-Rise Residential Occupancies	NBC 3.2.5.12.(2) NBC A-3.2.5.12.(2) NBC A-3.2.5.12.(6) NBC A-3.2.5.13.(1) CNB 3.2.5.12. 2) CNB A-3.2.5.12. 2) CNB A-3.2.5.12. 6) CNB A-3.2.5.13. 1)

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NFPA (National Fire Protection Association)	13-2019	Standard for the Installation of Sprinkler Systems	NBC 3.1.9.1.(4) NBC 3.2.4.15.(1) NBC 3.2.4.8.(2) NBC 3.2.5.12.(1) NBC 3.2.5.12.(9) NBC 3.2.8.2.(5) NBC 3.2.8.3.(2) NBC 3.3.2.14.(3) NBC 9.10.9.9.(4) NBC A-3.1.11.5.(3) and (4) NBC A-3.2.4.9.(3)(f) NBC A-3.2.5.12.(1) NBC A-3.2.5.12.(6) NBC A-3.2.5.13.(1) NBC A-3.2.8.2.(3) CNB 3.1.9.1. 4) CNB 3.2.4.15. 1) CNB 3.2.4.8. 2) CNB 3.2.5.12. 1) CNB 3.2.5.12. 9) CNB 3.2.8.2. 5) CNB 3.2.8.3. 2) CNB 3.3.2.14. 3) CNB 9.10.9.9. 4) CNB A-3.1.11.5. 3) et 4) CNB A-3.2.4.9. 3)f) CNB A-3.2.5.12. 1) CNB A-3.2.5.12. 6) CNB A-3.2.5.13. 1) CNB A-3.2.8.2. 3) NFC 3.2.1.1.(1) NFC 3.2.2.4.(3) NFC 3.2.3.3.(1) NFC 3.2.4.3.(1) NFC 3.2.6.3.(4) NFC A-2.1.3.1.(1) NFC A-3.2.1.1.(1)(a) NFC A-3.2.2.4.(3) NFC A-3.2.3.3.(2) CNPI 3.2.1.1. 1) CNPI 3.2.2.4. 3) CNPI 3.2.3.3. 1) CNPI 3.2.4.3. 1) CNPI 3.2.6.3. 4) CNPI A-2.1.3.1. 1) CNPI A-3.2.1.1. 1)a) CNPI A-3.2.2.4. 3) CNPI A-3.2.3.3. 2)
NFPA (National Fire Protection Association)	14-2013	Standard for the Installation of Standpipe and Hose Systems	NBC 3.2.5.10.(1) NBC 3.2.5.9.(1) CNB 3.2.5.10. 1) CNB 3.2.5.9. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA (National Fire Protection Association)	15-2017	Standard for Water Spray Fixed Systems for Fire Protection	NFC 2.1.3.5.(4) NFC 4.3.2.5.(2) NFC A-4.1.6.1.(1) CNPI 2.1.3.5. 4) CNPI 4.3.2.5. 2) CNPI A-4.1.6.1. 1)
NFPA (National Fire Protection Association)	~~16~~11-~~2019~~2021	Standard ~~on~~for ~~Installation~~Low-, Medium, and ~~of~~High-Expansion Foam-~~Water Sprinkler and Foam-Water Spray Systems~~	NFC 2.1.3.5.(3) NFC 2.1.3.5.(4) NFC 4.3.2.5.(2) CNPI 2.1.3.5. 3) CNPI 2.1.3.5. 4) CNPI 4.3.2.5. 2)
NFPA (National Fire Protection Association)	17A-2017	Standard for Wet Chemical Extinguishing Systems	NFC 2.1.3.5.(3) CNPI 2.1.3.5. 3)
NFPA (National Fire Protection Association)	1710-2010	Standard for the Organization and Deployment of Fire Suppression Operations, Emergency Medical Operations, and Special Operations to the Public by Career Fire Departments	NBC A-3.2.3.1.(8) CNB A-3.2.3.1. 8)
NFPA (National Fire Protection Association)	17-2017	Standard for Dry Chemical Extinguishing Systems	NFC 2.1.3.5.(3) CNPI 2.1.3.5. 3)
NFPA (National Fire Protection Association)	18-2017	Standard on Wetting Agents	NFC 2.1.3.5.(5) CNPI 2.1.3.5. 5)
NFPA (National Fire Protection Association)	2008	Fire Protection Handbook, Twentieth Edition	NBC A-3.2.2.2.(1) NBC A-3.6.2.7.(5) NFC A-2.4.1.3.(1)
NFPA ()	2008	Fire Protection Handbook, Twentieth Edition	CNB A-3.2.2.2. 1) CNB A-3.6.2.7. 5) CNPI A-2.4.1.3. 1)
NFPA (National Fire Protection Association)	2010 Edition	Fire Protection Guide to Hazardous Materials	NBC A-6.9.1.2.(1)
NFPA (National Fire Protection Association)	20-~~2016~~2019	Standard for the Installation of Stationary Pumps for Fire Protection	NBC 3.2.4.9.(4) NBC 3.2.5.18.(1) NBC A-3.2.4.9.(3)(f) CNB 3.2.4.9. 4) CNB 3.2.5.18. 1) CNB A-3.2.4.9. 3)f)
NFPA (National Fire Protection Association)	204-2018	Standard for Smoke and Heat Venting	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	211-2019	Standard for Chimneys, Fireplaces, Vents, and Solid Fuel-Burning Appliances	NBC 6.3.3.2.(2) NBC 6.3.3.3.(1) CNB 6.3.3.2. 2) CNB 6.3.3.3. 1)
NFPA (National Fire Protection Association)	25-2017	Standard for the Inspection, Testing, and Maintenance of Water-Based Fire Protection Systems	NFC 6.4.1.1.(1) CNPI 6.4.1.1. 1)
NFPA (National Fire Protection Association)	30A-2018	Code for Motor Fuel Dispensing Facilities and Repair Garages	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA (National Fire Protection Association)	30B-2019	Code for the Manufacture and Storage of Aerosol Products	NFC 3.2.5.2.(1) NFC 3.2.5.5.(1) NFC A-3.2.5.2.(1) CNPI 3.2.5.2. 1) CNPI 3.2.5.5. 1) CNPI A-3.2.5.2. 1)
NFPA (National Fire Protection Association)	30-~~2018~~2021	Flammable and Combustible Liquids Code	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 4.2.7.6.(1) NFC A-4.1.1.1.(2) NFC A-4.1.4.1.(1) NFC A-4.1.6.1.(1) NFC A-4.2.7.6.(1) NFC A-4.3.16.1.(1) CNPI 4.2.7.6. 1) CNPI A-4.1.1.1. 2) CNPI A-4.1.4.1. 1) CNPI A-4.1.6.1. 1) CNPI A-4.2.7.6. 1) CNPI A-4.3.16.1. 1)
NFPA (National Fire Protection Association)	303-2016	Fire Protection Standard for Marinas and Boatyards	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	307-2016	Standard for the Construction and Fire Protection of Marine Terminals, Piers, and Wharves	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	32-2016	Standard for Drycleaning Facilities	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 5.4.2.1.(1) CNPI 5.4.2.1. 1)
NFPA (National Fire Protection Association)	326-2020	Standard for the Safeguarding of Tanks and Containers for Entry, Cleaning, or Repair	NFC A-5.6.1.11.(4) CNPI A-5.6.1.11. 4)
NFPA (National Fire Protection Association)	33-~~2018~~2021	Standard for Spray Application Using Flammable or Combustible Materials	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 5.4.5.2.(1) CNPI 5.4.5.2. 1)
NFPA (National Fire Protection Association)	34-2018	Standard for Dipping, Coating, and Printing Processes Using Flammable or Combustible Liquids	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 5.4.6.2.(1) CNPI 5.4.6.2. 1)
NFPA (National Fire Protection Association)	35-2016	Standard for Manufacture of Organic Coatings	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	36-2017	Standard for Solvent Extraction Plants	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC A-4.1.1.1.(2) CNPI A-4.1.1.1. 2)
NFPA (National Fire Protection Association)	37-~~2018~~2021	Standard for the Installation and Use of Stationary Combustion Engines and Gas Turbines	NFC 4.3.13.2.(1) CNPI 4.3.13.2. 1)
NFPA (National Fire Protection Association)	40-2019	Standard for the Storage and Handling of Cellulose Nitrate Film	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	409-2016	Standard on Aircraft Hangars	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA (National Fire Protection Association)	415-2016	Standard on Airport Terminal Buildings, Fueling Ramp Drainage, and Loading Walkways	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	484-2019	Standard for Combustible Metals	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC A-5.3.1.3.(2) CNPI A-5.3.1.3. 2)
NFPA (National Fire Protection Association)	497-2017	Recommended Practice for the Classification of Flammable Liquids, Gases, or Vapors and of Hazardous (Classified) Locations for Electrical Installations in Chemical Process Areas	NFC A-4.1.4.1.(1) CNPI A-4.1.4.1. 1)
NFPA (National Fire Protection Association)	505-2018	Fire Safety Standard for Powered Industrial Trucks Including Type Designations, Areas of Use, Conversions, Maintenance, and Operations	NFC 3.1.3.1.(1) CNPI 3.1.3.1. 1)
NFPA (National Fire Protection Association)	51A-2012	Standard for Acetylene Cylinder Charging Plants	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	51-2018	Standard for the Design and Installation of Oxygen-Fuel Gas Systems for Welding, Cutting, and Allied Processes	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 5.2.2.4.(1) CNPI 5.2.2.4. 1)
NFPA (National Fire Protection Association)	55-2020	Compressed Gases and Cryogenic Fluids Code	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC A-3.1.1.4. NFC A-5.5.5.3.(5)(b) and (7)(b) CNPI A-3.1.1.4. CNPI A-5.5.5.3. 5)b) et 7)b)
NFPA (National Fire Protection Association)	61-2017	Standard for the Prevention of Fires and Dust Explosions in Agricultural and Food Processing Facilities	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC A-5.3.1.3.(2) CNPI A-5.3.1.3. 2)
NFPA (National Fire Protection Association)	654-~~2017~~2020	Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC A-5.3.1.3.(2) CNPI A-5.3.1.3. 2)
NFPA (National Fire Protection Association)	655-2017	Standard for Prevention of Sulfur Fires and Explosions	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC A-5.3.1.3.(2) CNPI A-5.3.1.3. 2)
NFPA (National Fire Protection Association)	664-2017	Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 5.3.2.1.(1) NFC A-5.3.1.3.(2) CNPI 5.3.2.1. 1) CNPI A-5.3.1.3. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA (National Fire Protection Association)	68-~~2013~~2018	Standard on Explosion Protection by Deflagration Venting	NBC 3.3.6.4.(2) NBC A-3.6.2.7.(5) NBC A-6.9.1.2.(1) CNB 3.3.6.4. 2) CNB A-3.6.2.7. 5) CNB A-6.9.1.2. 1) NFC 3.2.8.2.(1) NFC 4.3.14.3.(1) NFC 4.9.3.1.(1) NFC 4.9.4.2.(1) NFC 5.3.1.6.(2) CNPI 3.2.8.2. 1) CNPI 4.3.14.3. 1) CNPI 4.9.3.1. 1) CNPI 4.9.4.2. 1) CNPI 5.3.1.6. 2)
NFPA (National Fire Protection Association)	69-~~2014~~2019	Standard on Explosion Prevention Systems	NBC A-3.6.2.7.(5) NBC A-6.9.1.2.(1) CNB A-3.6.2.7. 5) CNB A-6.9.1.2. 1) NFC 4.3.2.5.(2) NFC 4.9.4.2.(1) NFC 5.3.1.7.(2) CNPI 4.3.2.5. 2) CNPI 4.9.4.2. 1) CNPI 5.3.1.7. 2)
NFPA (National Fire Protection Association)	705-2018	Recommended Practice for a Field Flame Test for Textiles and Films	NFC 2.3.2.2.(1) NFC 2.9.2.1.(1) NFC A-2.3.2.2.(1) CNPI 2.3.2.2. 1) CNPI 2.9.2.1. 1) CNPI A-2.3.2.2. 1)
NFPA (National Fire Protection Association)	72-2019	National Fire Alarm and Signaling Code	NBC A-3.2.4.22.(1)(b) CNB A-3.2.4.22. 1)b)
NFPA (National Fire Protection Association)	80A-~~2012~~2017	Recommended Practice for Protection of Buildings from Exterior Fire Exposures	NBC A-3 CNB A-3 NFC A-2.4.1.1.(6) CNPI A-2.4.1.1. 6)
NFPA (National Fire Protection Association)	80-~~2013~~2019	Standard for Fire Doors and Other Opening Protectives	NBC 3.1.8.12.(2) NBC 3.1.8.16.(1) NBC 3.1.8.5.(2) NBC 3.1.9.1.(5) NBC 9.10.13.1.(1) NBC 9.10.9.9.(5) NBC A-3.1.8.1.(2) NBC A-3.2.8.2.(3) NBC D-5.2.1. CNB 3.1.8.12. 2) CNB 3.1.8.16. 1) CNB 3.1.8.5. 2) CNB 3.1.9.1. 5) CNB 9.10.13.1. 1) CNB 9.10.9.9. 5) CNB A-3.1.8.1. 2) CNB A-3.2.8.2. 3) CNB D-5.2.1. NFC 2.2.2.4.(5) CNPI 2.2.2.4. 5)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA (National Fire Protection Association)	82-~~2014~~2019	Standard on Incinerators and Waste and Linen Handling Systems and Equipment	NBC 6.2.2.1.(1) NBC 9.10.10.5.(2) CNB 6.2.2.1. 1) CNB 9.10.10.5. 2) NFC 2.6.2.2.(1) CNPI 2.6.2.2. 1)
NFPA (National Fire Protection Association)	85-2019	Boiler and Combustion Systems Hazards Code	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	86-2019	Standard for Ovens and Furnaces	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1) NFC 5.4.1.2.(1) CNPI 5.4.1.2. 1)
NFPA (National Fire Protection Association)	88A-2019	Standard for Parking Structures	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA (National Fire Protection Association)	91-2015	Standard for Exhaust Systems for Air Conveying of Vapors, Gases, Mists, and Particulate Solids	NBC 6.3.4.3.(1) NBC A-6.9.1.2.(1) CNB 6.3.4.3. 1) CNB A-6.9.1.2. 1) NFC 3.2.2.3.(5) NFC 4.1.7.2.(5) NFC A-5.3.1.3.(2) CNPI 3.2.2.3. 5) CNPI 4.1.7.2. 5) CNPI A-5.3.1.3. 2)
NFPA (National Fire Protection Association)	96-2014	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations	NBC 3.2.4.8.(2) NBC 3.6.3.5.(1) NBC 6.3.1.6.(1) NBC A-3.3.1.2.(2) NBC A-3.6.3.5. NBC A-6.9.1.2.(1) NBC A-9.10.1.4.(1) CNB 3.2.4.8. 2) CNB 3.6.3.5. 1) CNB 6.3.1.6. 1) CNB A-3.3.1.2. 2) CNB A-3.6.3.5. CNB A-6.9.1.2. 1) CNB A-9.10.1.4. 1) NFC 2.6.1.9.(2) CNPI 2.6.1.9. 2)
NFRC (National Fenestration Rating Council)	100-2010	Procedure for Determining Fenestration Product U-factors	NBC 9.36.2.2.(3) CNB 9.36.2.2. 3) NECB 3.1.1.5.(3) CNÉB 3.1.1.5. 3)
NFRC (National Fenestration Rating Council)	200-2010	Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence	NBC 9.36.2.2.(3) CNB 9.36.2.2. 3)
NIST (National Institute of Standards and Technology)	Building Materials and Structures Report BMS 79, 1941	Water-Distributing Systems for Buildings	NPC A-2.6.3. CNP A-2.6.3.

Issuing Agency	Document Number	Title of Document	Code Reference
NLGA (National Lumber Grades Authority)	SPS-1-~~2017~~2023	**Special Products Standard for** Fingerjoined Structural Lumber	NBC A-9.23.10.4.(1) NBC Table 9.10.3.1.-A CNB A-9.23.10.4. 1) CNB Tableau 9.10.3.1.-A
NLGA (National Lumber Grades Authority)	SPS-3-~~2017~~2023	**Special Products Standard for** Fingerjoined “Vertical Stud Use Only” Lumber	NBC A-9.23.10.4.(1) NBC Table 9.10.3.1.-A CNB A-9.23.10.4. 1) CNB Tableau 9.10.3.1.-A
NLGA (National Lumber Grades Authority)	~~2017~~2022	Standard Grading Rules for Canadian Lumber	NBC 9.3.2.1.(1) NBC A-9.23.10.4.(1) NBC A-9.3.2.1.(1) NBC A-9.3.2.8.(1) NBC A-Table 9.3.2.1. NBC Table A-9.3.2.1.(1)A
NLGA (Commission nationale de classification des sciages)	~~2017~~2022	Règles de classification pour le bois d'oeuvre canadien	CNB 9.3.2.1. 1) CNB A-9.23.10.4. 1) CNB A-9.3.2.1. 1) CNB A-9.3.2.8. 1) CNB A-Tableau 9.3.2.1. CNB Tableau A-9.3.2.1. 1)A
CNRC (Conseil national de recherches du Canada)	BPN 54F-85	La différence entre un pare-vapeur et un pare-air	CNB A-9.25.1.1. 2)
NRC (National Research Council of Canada)	BPN 54-85	The difference between a vapour barrier and an air barrier	NBC A-9.25.1.1.(2)
NRC (National Research Council of Canada)	CBD 222	Airtight houses and carbon monoxide poisoning	NBC A-9.33.1.1.(2)
NRC (National Research Council of Canada)	CBD 230	Applying building codes to existing buildings	NBC A-1.1.1.1.(1) of Division A
NRC (National Research Council of Canada)	CBD 231	Moisture problems in houses	NBC A-9.25.3.1.(1)
NRC (National Research Council of Canada)	CRBCPI-Y2-R19	Guideline on Design for Durability of Building Envelopes	NBC A-5.1.4.2. NBC A-5.4.1.1.(3) CNB A-5.1.4.2. CNB A-5.4.1.1. 3)
CNRC (Conseil national de recherches du Canada)	DCC 222F	Étanchéité à l'air des maisons et oxycarbonisme	CNB A-9.33.1.1. 2)
CNRC (Conseil national de recherches du Canada)	DCC 230F	Application des codes aux bâtiments existants	CNB A-1.1.1.1. 1) de la division A
CNRC (Conseil national de recherches du Canada)	DCC 231F	Problèmes d'humidité dans les maisons	CNB A-9.25.3.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
CNRC (Conseil national de recherches du Canada)	NRCC 49677F-2007	Guide des règles de l'art sur les coupe-feu et les pare-feu et leur effet sur la transmission acoustique	CNB A-9.11.
NRC (National Research Council of Canada)	NRCC 49677-2007	Best Practice Guide on Fire Stops and Fire Blocks and their Impact on Sound Transmission	NBC A-9.11.
NRC (National Research Council of Canada)	17808-2005	Performance Guidelines for Basement Envelope Systems and Materials: Final Research Report	NBC A-9.25.5.1. CNB A-9.25.5.1.
NRC (National Research Council of Canada)	1988	Performance and acceptability of wood floors – Forintek studies	NBC A-9.23.4.2.(2)
CNRC (Conseil national de recherches du Canada)	1988	Performance and Acceptability of Wood Floors – Forintek Studies	CNB A-9.23.4.2. 2)
NRC Const. (National Research Council Construction)	RR-331-~~2017~~2023	Guide to Calculating Airborne Sound Transmission in Buildings	NBC A-5.8.1.4. NBC A-5.8.1.4.(4)(b)
CNRC Const. (Conseil National de Recherches Construction)	RR-331-~~2017~~2023	Guide ~~pour~~to ~~le~~Calculating ~~calcul~~Airborne ~~de~~Sound ~~la~~Transmission ~~transmission~~in ~~des bruits aériens dans les bâtiments~~Buildings	CNB A-5.8.1.4. CNB A-5.8.1.4. 4)b)
NRC Const. (National Research Council Construction)	2005	A Guide for the Wind Design of Mechanically Attached Flexible Membrane Roofs	NBC A-5.2.2.2.(4)
CNRC Const. (Conseil National de Recherches Construction)	2005	Guide de conception pour contrer les effets du vent sur les couvertures à membrane souple fixées mécaniquement	CNB A-5.2.2.2. 4)
NRCA (National Roofing Contractors Association)	3rd Edition, 2017	The NRCA Vegetative Roof Systems Manual	NBC A-5.6.1.2.(2) CNB A-5.6.1.2. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
RNCan (Ressources naturelles Canada)	DORS/2016-311	Règlement de 2016 sur l'efficacité énergétique	CNB Tableau 9.36.4.2. CNÉB 5.2.12.4. 1) CNÉB 6.2.2.4. 2) CNÉB 6.2.2.5. 1) CNÉB A-5.2.12.1. 1) et 6.2.2.1. 1) CNÉB Tableau 5.2.12.1.-A CNÉB Tableau 5.2.12.1.-B CNÉB Tableau 5.2.12.1.-C CNÉB Tableau 5.2.12.1.-D CNÉB Tableau 5.2.12.1.-E CNÉB Tableau 5.2.12.1.-G CNÉB Tableau 5.2.12.1.-I CNÉB Tableau 5.2.12.1.-K CNÉB Tableau 5.2.12.1.-N CNÉB Tableau 5.2.12.1.-O CNÉB Tableau 6.2.2.1.
RNCan (Ressources naturelles Canada)	L.C. 1992, ch. 36	Loi sur l'efficacité énergétique	CNÉB 5.2.12.4. 1) CNÉB 6.2.2.4. 2) CNÉB 6.2.2.5. 1) CNÉB A-5.2.12.1. 1) et 6.2.2.1. 1)
RNCan (Ressources naturelles Canada)	L.R.C. (1985), ch. E-17	Loi sur les explosifs	CNB 3.3.6.2. 3) CNPI 3.1.1.3. 1) CNPI 5.1.1.2. 1) CNPI A-3.2.9.1. 1)
NRCan (Natural Resources Canada)	R.S.C. 1985, c. E-17	Explosives Act	NBC 3.3.6.2.(3) NFC 3.1.1.3.(1) NFC 5.1.1.2.(1) NFC A-3.2.9.1.(1)
NRCan (Natural Resources Canada)	S.C. 1992, c. 36	Energy Efficiency Act	NECB 5.2.12.4.(1) NECB 6.2.2.4.(2) NECB 6.2.2.5.(1) NECB A-5.2.12.1.(1) and 6.2.2.1.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
NRCan (Natural Resources Canada)	SOR/2016-311	Energy Efficiency Regulations, 2016	NBC Table 9.36.4.2. NECB 5.2.12.4.(1) NECB 6.2.2.4.(2) NECB 6.2.2.5.(1) NECB A-5.2.12.1.(1) and 6.2.2.1.(1) NECB Table 5.2.12.1.A NECB Table 5.2.12.1.B NECB Table 5.2.12.1.C NECB Table 5.2.12.1.D NECB Table 5.2.12.1.E NECB Table 5.2.12.1.G NECB Table 5.2.12.1.I NECB Table 5.2.12.1.K NECB Table 5.2.12.1.N NECB Table 5.2.12.1.O NECB Table 6.2.2.1.
NRCan (Natural Resources Canada)	2010	Display Fireworks Manual	NFC 5.1.1.3.(1)
RNCan (Ressources naturelles Canada)	2010	Manuel de l'artificier	CNPI 5.1.1.3. 1)
NSF (National Sanitation Foundation International)	NSF Pro 151-8-1-95	Health Effects from Rainwater Catchment System Components	NPC A-2.7.2.3.(2) CNP A-2.7.2.3. 2)
NYCDH (New York City Department of Health and Mental Hygiene, Environmental and Occupational Disease Epidemiology)	2008	Guidelines on Assessment and Remediation of Fungi in Indoor Environments	NBC A-5.5.1.1. CNB A-5.5.1.1.
OCIMF (Oil Companies International Marine Forum)	2009	Guide to Manufacturing and Purchasing Hoses for Offshore Moorings, 5th Edition	NFC A-4.8.8.1.(1)(a) CNPI A-4.8.8.1. 1)a)
OMMAH (Ontario Ministry of Municipal Affairs and Housing)	2012	2012 Building Code Compendium, Volume 2, Supplementary Standard SB-7, Guards for Housing and Small Buildings	NBC A-9.8.8.2. CNB A-9.8.8.2.
SFPE (Society of Fire Protection Engineers)	4th Edition	Handbook of Fire Protection Engineering	NFC A-4.1.6.1.(1) CNPI A-4.1.6.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
SMACNA (Sheet Metal and Air Conditioning Contractor's National Association)	ANSI/SMACNA 006-2006	HVAC Duct Construction Standards – Metal and Flexible	NBC 9.33.6.5.(2) NBC A-9.36.3.2.(2) CNB 9.33.6.5. 2) CNB A-9.36.3.2. 2) NECB 5.2.2.3.(1) NECB A-5.2.2.1.(1) NECB Table 5.2.2.3. CNÉB 5.2.2.3. 1) CNÉB A-5.2.2.1. 1) CNÉB Tableau 5.2.2.3.
SMACNA (Sheet Metal and Air Conditioning Contractor's National Association)	ANSI/SMACNA 016-2012	HVAC Air Duct Leakage Test Manual	NECB 5.2.2.4.(1) NECB A-5.2.2.1.(1) CNÉB 5.2.2.4. 1) CNÉB A-5.2.2.1. 1)
SMACNA (Sheet Metal and Air Conditioning Contractor's National Association)	2003	Fibrous Glass Duct Construction Standards	NECB A-5.2.2.1.(1) CNÉB A-5.2.2.1. 1)
SMACNA (Sheet Metal and Air Conditioning Contractor's National Association)	2006	HVAC Systems Duct Design	NECB A-5.2.2.1.(1) CNÉB A-5.2.2.1. 1)
SPRI (Single Ply Roofing Industry)	ANSI/GRHC/SPRI VR-1-2018	Procedure for Investigating Resistance to Root or Rhizome Penetration on Vegetative Roofs	NBC 5.6.1.2.(2) CNB 5.6.1.2. 2)
SPRI (Single Ply Roofing Industry)	ANSI/SPRI WD-1-2014	Wind Design Standard Practice for Roofing Assemblies	NBC A-5.2.2.2.(4) CNB A-5.2.2.2. 4)
STI/SPFA (Steel Tank Institute/Steel Plate Fabricators Association)	SP031-2008	Standard for Repair of Shop Fabricated Aboveground Tanks for Storage of Flammable and Combustible Liquids	NFC 4.3.1.10.(2) CNPI 4.3.1.10. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
TC (Transports Canada)	DORS/2001-286	Règlement sur le transport des marchandises dangereuses (TMD)	CNB 1.4.1.2. 1) de la division A CNB A-1.4.1.2. 1) de la division A CNB A-3.3.1.2. 1) CNPI 1.4.1.2. 1) de la division A CNPI 3.1.2.1. 1) CNPI 3.2.7.1. 3) CNPI 3.2.7.14. 1) CNPI 3.2.7.14. 4) CNPI 3.2.7.15. 2) CNPI 3.3.4.1. 3) CNPI 4.1.1.1. 3) CNPI 4.2.3.1. 1) CNPI 4.2.3.2. 2) CNPI A-1.4.1.2. 1) de la division A CNPI A-3.2.7.1. 3)b) CNPI A-3.2.7.14. 1) CNPI A-3.2.7.6. 3) CNPI A-4.1.2.1. CNPI A-4.2.2.3. 2) CNPI Tableau 3.2.7.1. CNPI Tableau 3.2.7.6.
TC (Transports Canada)	DORS/2012-69	Règlement sur la pollution par les bâtiments et sur les produits chimiques dangereux	CNPI A-4.8.8.1. 1)a)
TC (Transports Canada)	DORS/82-1015	Règlement sur la prévention des étincelles électriques sur les chemins de fer	CNPI 4.7.4.5. 2) CNPI 4.8.5.1. 1)
TC (Transports Canada)	DORS/96-433	Règlement de l'aviation canadien – Partie III	CNB 4.1.5.13. 1) CNPI 2.13.1.1. 1)
TC (Transport Canada)	General Order No. 0-32, C.R.C., c. 1148	Flammable Liquids Bulk Storage Regulations	NFC 4.5.6.5.(4) NFC 4.7.2.2.(1) NFC 4.7.4.1.(2)
TC (Transports Canada)	Ordonnance générale n° 0-32, C.R.C., ch. 1148	Règlement sur l'emmagasinage en vrac des liquides inflammables	CNPI 4.5.6.5. 4) CNPI 4.7.2.2. 1) CNPI 4.7.4.1. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
TC (Transport Canada)	SOR/2001-286	Transportation of Dangerous Goods Regulations (TDGR)	NBC 1.4.1.2.(1) of Division A NBC A-1.4.1.2.(1) of Division A NBC A-3.3.1.2.(1) NFC 1.4.1.2.(1) of Division A NFC 3.1.2.1.(1) NFC 3.2.7.1.(3) NFC 3.2.7.14.(1) NFC 3.2.7.14.(4) NFC 3.2.7.15.(2) NFC 3.3.4.1.(3) NFC 4.1.1.1.(3) NFC 4.2.3.1.(1) NFC 4.2.3.2.(2) NFC A-1.4.1.2.(1) of Division A NFC A-3.2.7.1.(3)(b) NFC A-3.2.7.14.(1) NFC A-3.2.7.6.(3) NFC A-4.1.2.1. NFC A-4.2.2.3.(2) NFC Table 3.2.7.1. NFC Table 3.2.7.6.
TC (Transport Canada)	SOR/2012-69	Vessel Pollution and Dangerous Chemicals Regulations	NFC A-4.8.8.1.(1)(a)
TC (Transport Canada)	SOR/82-1015	Railway Prevention of Electric Sparks Regulations	NFC 4.7.4.5.(2) NFC 4.8.5.1.(1)
TC (Transport Canada)	SOR/96-433	Canadian Aviation Regulations – Part III	NBC 4.1.5.13.(1) NFC 2.13.1.1.(1)
TC (Transport Canada)	2001	Standards Respecting Pipeline Crossings Under Railways	NFC 4.5.6.5.(3)
TC (Transports Canada)	2001	Normes concernant les canalisations traversant sous les voies ferrées	CNPI 4.5.6.5. 3)
TIAC (Thermal Insulation Association of Canada)	2013	Mechanical Insulation Best Practices Guide	NBC A-6.3.2.5. NPC A-2.3.5.3. NECB A-5.2.2.5.(8) and 5.2.5.3.(7)
ACIT (Association Canadienne de l'isolation Thermique)	2013	Guide des meilleures pratiques d'isolation mécanique	CNB A-6.3.2.5. CNP A-2.3.5.3. CNÉB A-5.2.2.5. 8) et 5.2.5.3. 7)
TPIC (Truss Plate Institute of Canada)	~~2019~~2024	Truss Design Procedures and Specifications for Light Metal Plate Connected Wood Trusses	NBC 9.23.14.11.(1) CNB 9.23.14.11. 1)
TWC (Tarion Warranty Corporation (formerly ONHWP – Ontario New Home Warranty Program))	1993	Details of Air Barrier Systems for Houses	NBC Table A-9.25.5.1.(1) CNB Tableau A-9.25.5.1. 1)
UL (Underwriters Laboratories Inc.)	ANSI/UL 1784-2015	Standard for Air Leakage Tests of Door Assemblies and Other Opening Protectives	NBC 3.1.8.4.(4) CNB 3.1.8.4. 4)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Underwriter's Laboratories of Canada)	ANSI/CAN/UL/ULC 2258:2018	Standard for Aboveground Nonmetallic Tanks for Fuel Oil and Other Combustible Liquids	NFC 4.3.1.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	ANSI/CAN/UL/ULC 2258:2018	Norme sur les réservoirs non métalliques hors sol pour le mazout et autres liquides combustibles	CNPI 4.3.1.2. 1)
ULC (Underwriter's Laboratories of Canada)	ANSI/CAN/UL/ULC 300~~-2019~~:2024	Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment	NBC 6.9.1.3.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	ANSI/CAN/UL/ULC 300~~-2019~~:2024	Norme sur la mise à l'essai de systèmes d'extinction d'incendie conçus pour la protection d'équipement de cuisson commercial	CNB 6.9.1.3. 1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC 628:2022	Norme sur les foyers encastrables et les poêles sur socle	CNB 9.22.10.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC~~-S1001-11~~ 1001:2024	Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems	NBC 3.2.9.1.(1) NBC 9.10.1.2.(1) NBC A-3.2.9.1.(1) NFC 6.8.1.1.(1) NFC A-6.8.1.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC~~-S1001-11~~ 1001:2024	Norme sur les essais intégrés de systèmes de protection incendie et de sécurité des personnes	CNB 3.2.9.1. 1) CNB 9.10.1.2. 1) CNB A-3.2.9.1. 1) CNPI 6.8.1.1. 1) CNPI A-6.8.1.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S101-14	Standard Method of Fire Endurance Tests of Building Construction and Materials	NBC 2.2.1.10.(1) NBC 2.2.1.8.(4) NBC 3.1.11.7.(1) NBC 3.1.5.14.(5) NBC 3.1.5.14.(6) NBC 3.1.5.15.(3) NBC 3.1.5.15.(4) NBC 3.1.5.7.(2) NBC 3.1.7.1.(1) NBC 3.2.3.8.(1) NBC 9.10.16.3.(1) NBC A-3.1.5.14.(5)(d) NBC D-1.1.1. NBC D-1.12.1. NBC D-2.11.1. NBC D-2.3.2. NBC Table 9.10.3.1.-B

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S101-14	Méthodes d'essai normalisées de résistance au feu pour les bâtiments et les matériaux de construction	CNB 2.2.1.10. 1) CNB 2.2.1.8. 4) CNB 3.1.11.7. 1) CNB 3.1.5.14. 5) CNB 3.1.5.14. 6) CNB 3.1.5.15. 3) CNB 3.1.5.15. 4) CNB 3.1.5.7. 2) CNB 3.1.7.1. 1) CNB 3.2.3.8. 1) CNB 9.10.16.3. 1) CNB A-3.1.5.14. 5)d) CNB D-1.1.1. CNB D-1.12.1. CNB D-2.11.1. CNB D-2.3.2. CNB Tableau 9.10.3.1.-B
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S102-10	Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies	NBC 3.1.12.1.(1) NBC 3.1.5.24.(1) NBC 9.29.5.2.(1) NBC D-1.1.1. NBC D-6.1.1. NBC Table 5.9.1.1. NBC Table 9.23.17.2.A
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S102-10	Méthode d'essai normalisée caractéristiques de combustion superficielle des matériaux de construction et assemblages	CNB 3.1.12.1. 1) CNB 3.1.5.24. 1) CNB 9.29.5.2. 1) CNB D-1.1.1. CNB D-6.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S102.2:2018	Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Coverings, and Miscellaneous Materials and Assemblies	NBC 3.1.12.1.(2) NBC 3.1.13.4.(1) NBC 9.27.12.1.(4) NBC 9.27.13.1.(2) NBC D-1.1.1. NBC D-3.1.1.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S102.2:2018	Méthode d'essai normalisée caractéristiques de combustion superficielle des revêtements de sol et des divers matériaux et assemblages	CNB 3.1.12.1. 2) CNB 3.1.13.4. 1) CNB 9.27.12.1. 4) CNB 9.27.13.1. 2) CNB D-1.1.1. CNB D-3.1.1.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S102.3:2018	Standard Method of Fire Test of Light Diffusers and Lenses	NBC 3.1.13.4.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S102.3:2018	Méthode d'essai normalisée de résistance au feu pour les diffuseurs et verres d'appareils d'éclairage	CNB 3.1.13.4. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S102.4:2017	Standard Method of Test for Fire and Smoke Characteristics of Electrical Wiring, Cables and Non-Metallic Raceways	NBC 3.1.4.3.(2) NBC 3.1.5.21.(2) NBC 3.1.5.23.(2)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S102.4:2017	Méthode d'essai normalisée caractéristiques de résistance au feu et à la fumée des fils et câbles électriques et des canalisations non métalliques	CNB 3.1.4.3. 2) CNB 3.1.5.21. 2) CNB 3.1.5.23. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S104-15	Standard Method for Fire Tests of Door Assemblies	NBC 3.1.8.4.(1) NBC 3.2.6.5.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S104-15	Méthode normalisée des essais de résistance au feu des portes	CNB 3.1.8.4. 1) CNB 3.2.6.5. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S105:2016	Standard Specification for Fire Door Frames Meeting the Performance Required by CAN/ULC-S104	NBC 9.10.13.6.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S105:2016	Norme sur les cadres de porte coupe-feu satisfaisant aux exigences de rendement de la norme CAN/ULC-S104	CNB 9.10.13.6. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S106-15	Standard Method for Fire Tests of Window and Glass Block Assemblies	NBC 3.1.8.4.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S106-15	Méthode normalisée des essais de comportement au feu des fenêtres et des briques de verre	CNB 3.1.8.4. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S107:2019	Standard Methods of Fire Tests of Roof Coverings	NBC 3.1.15.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S107:2019	Méthodes normalisées d'essai de résistance au feu des matériaux de couverture	CNB 3.1.15.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S109-14	Standard Method for Flame Tests of Flame-Resistant Fabrics and Films	NBC 2.2.1.14.(1) NBC 3.1.16.1.(1) NBC 3.1.18.5.(1) NBC 3.6.5.2.(2) NBC 3.6.5.3.(1) NBC 9.33.6.3.(1) NFC 2.3.2.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S109-14	Méthode normalisée des essais de comportement au feu des tissus et pellicules ininflammables	CNB 2.2.1.14. 1) CNB 3.1.16.1. 1) CNB 3.1.18.5. 1) CNB 3.6.5.2. 2) CNB 3.6.5.3. 1) CNB 9.33.6.3. 1) CNPI 2.3.2.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S110-13	Standard Methods of Test for Air Ducts	NBC 3.6.5.1.(2) NBC 3.6.5.1.(5) NBC 9.33.6.2.(2) NBC 9.33.6.2.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S110-13	Méthodes normalisées d'essai des conduits d'air	CNB 3.6.5.1. 2) CNB 3.6.5.1. 5) CNB 9.33.6.2. 2) CNB 9.33.6.2. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S111-13	Standard Method of Fire Tests for Air Filter Units	NBC 6.3.2.13.(1) NBC 9.33.6.14.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S111-13	Méthode d'essai normalisée de résistance au feu des filtres	CNB 6.3.2.13. 1) CNB 9.33.6.14. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S112-10	Standard Method of Fire Test of Fire Damper Assemblies	NBC 3.1.8.4.(1) NBC A-3.2.6.6.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S112-10	Méthode d'essai normalisée de résistance au feu des registres coupe-feu	CNB 3.1.8.4. 1) CNB A-3.2.6.6. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S112.1-10	Standard for Leakage Rated Dampers for Use in Smoke Control Systems	NBC 3.1.8.4.(3) NBC 6.3.2.7.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S112.1-10	Norme sur les registres étanches pour systèmes de désenfumage	CNB 3.1.8.4. 3) CNB 6.3.2.7. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S112.2-07	Standard Method of Fire Test of Ceiling Firestop Flap Assemblies	NBC 3.6.4.3.(2) NBC 9.10.13.14.(1) NBC D-2.3.10. NBC D-2.3.11.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S112.2-07	Méthode d'essai normalisée de comportement au feu des clapets coupe-feu situés dans les plafonds	CNB 3.6.4.3. 2) CNB 9.10.13.14. 1) CNB D-2.3.10. CNB D-2.3.11.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S113:2016	Standard Specification for Wood Core Doors Meeting the Performance Required by CAN/ULC-S104 for Twenty Minute Fire Rated Closure Assemblies	NBC 9.10.13.2.(1) NBC A-9.10.13.2.(1) NBC A-9.10.9.3.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S113:2016	Spécification de norme : portes à âme de bois satisfaisant aux exigences de rendement de CAN/ULC-S104 pour les dispositifs de fermeture ayant un degré de résistance au feu de vingt minutes	CNB 9.10.13.2. 1) CNB A-9.10.13.2. 1) CNB A-9.10.9.3. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S114:2018	Standard Method of Test for Determination of Non-Combustibility in Building Materials	NBC 1.4.1.2.(1) of Division A NBC D-1.1.1. NBC D-4.1.1. NBC D-4.2.1. NPC 1.4.1.2.(1) of Division A
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S114:2018	Méthode d'essai normalisée pour la détermination de l'incombustibilité des matériaux de construction	CNB 1.4.1.2. 1) de la division A CNB D-1.1.1. CNB D-4.1.1. CNB D-4.2.1. CNP 1.4.1.2. 1) de la division A

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S115~~-11~~:2023	Standard Method of Fire Tests of Firestop Systems	NBC 3.1.5.19.(3) NBC 3.1.8.3.(3) NBC 3.1.9.1.(1) NBC 3.1.9.1.(2) NBC 3.1.9.1.(3) NBC 3.1.9.1.(6) NBC 3.1.9.1.(7) NBC 3.1.9.3.(1) NBC 3.1.9.3.(2) NBC 3.1.9.3.(4) NBC 3.1.9.4.(4) NBC 3.1.9.4.(7) NBC 9.10.9.2.(3) NBC 9.10.9.6.(1) NBC 9.10.9.6.(2) NBC 9.10.9.8.(1) NBC 9.10.9.8.(6) NBC A-3.1.11.7.(7) NBC A-3.1.8.3.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S115~~-11~~:2023	Méthode normalisée d'essais de résistance au feu des dispositifs coupe-feu	CNB 3.1.5.19. 3) CNB 3.1.8.3. 3) CNB 3.1.9.1. 1) CNB 3.1.9.1. 2) CNB 3.1.9.1. 3) CNB 3.1.9.1. 6) CNB 3.1.9.1. 7) CNB 3.1.9.3. 1) CNB 3.1.9.3. 2) CNB 3.1.9.3. 4) CNB 3.1.9.4. 4) CNB 3.1.9.4. 7) CNB 9.10.9.2. 3) CNB 9.10.9.6. 1) CNB 9.10.9.6. 2) CNB 9.10.9.8. 1) CNB 9.10.9.8. 6) CNB A-3.1.11.7. 7) CNB A-3.1.8.3. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S124~~-06~~:2018	Standard Method of Test for the Evaluation of ~~Protective~~Thermal ~~Coverings~~Barriers for Foamed Plastic	NBC 3.1.5.15.(2) NBC A-3.1.5.14.(5)(d)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S124~~-06~~:2018	Méthode d'essai normalisée pour l'évaluation des ~~revêtements~~barrières ~~protecteurs~~thermiques de la ~~mousse~~mousses ~~plastique~~plastiques	CNB 3.1.5.15. 2) CNB A-3.1.5.14. 5)d)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S126-14	Standard Method of Test for Fire Spread Under Roof-Deck Assemblies	NBC 3.1.14.1.(1) NBC 3.1.14.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S126-14	Méthode normalisée d'essai sur la propagation des flammes sous les platelages de toits	CNB 3.1.14.1. 1) CNB 3.1.14.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S134-13	Standard Method of Fire Test of Exterior Wall Assemblies	NBC 3.1.5.5.(1) NBC 9.10.14.5.(2) NBC 9.10.15.5.(2) NBC 9.10.15.5.(3) NBC D-1.1.1. NBC D-6.1.1.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S134-13	Méthode normalisée des essais de comportement au feu des murs extérieurs	CNB 3.1.5.5. 1) CNB 9.10.14.5. 2) CNB 9.10.15.5. 2) CNB 9.10.15.5. 3) CNB D-1.1.1. CNB D-6.1.1.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S137:2017	Standard Method of Test for Fire Growth of Mattresses (Open Flame Test)	NFC 2.3.2.3.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S137:2017	Méthode d'essai normalisée pour la propagation du feu sur les matelas (essai à la flamme nue)	CNPI 2.3.2.3. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S138-06	Standard Method of Test for Fire Growth of Insulated Building Panels in a Full-Scale Room Configuration	NBC 3.1.5.7.(1) NBC 3.1.5.7.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S138-06	Méthode d'essai normalisée de la propagation du feu dans les panneaux de construction isolés d'une configuration de pièces à l'échelle réelle	CNB 3.1.5.7. 1) CNB 3.1.5.7. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S139:2017	Standard for Fire Test for Circuit Integrity of Fire-Resistive Power, Instrumentation, Control and Data Cables	NBC 3.2.6.5.(6) NBC 3.2.7.10.(2) NBC 3.2.7.10.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S139:2017	Normes sur l'essai de résistance au feu pour l'évaluation de l'intégrité des circuits des câbles d'alimentation, de l'instrumentation, des contrôles et de données	CNB 3.2.6.5. 6) CNB 3.2.7.10. 2) CNB 3.2.7.10. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S143-14	Standard Method of Fire Tests for Non-Metallic Electrical and Optical Fibre Cable Raceway Systems	NBC 3.1.5.23.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S143-14	Méthode d'essai normalisée de comportement au feu des systèmes de canalisation non métalliques pour câbles électriques et à fibres optiques	CNB 3.1.5.23. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S144-12	Standard Method of Fire Resistance Test – Grease Duct Assemblies	NBC 3.6.3.5.(2) NBC A-3.6.3.5.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S144-12	Méthode d'essai normalisée de résistance au feu – conduits de graisse	CNB 3.6.3.5. 2) CNB A-3.6.3.5.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S146-19	Standard Method of Test for the Evaluation of Encapsulation Materials and Assemblies of Materials for the Protection of Structural Timber Elements	NBC 3.1.6.5.(1)

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ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S146-19	Méthode d'essai normalisée pour l'évaluation des matériaux d'encapsulation et les assemblages de matériaux aux fins de la protection des éléments de bois de charpente	CNB 3.1.6.5. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S503-05	Standard for Carbon-Dioxide Fire Extinguishers	NFC 2.1.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S503-05	Norme sur les extincteurs au dioxyde de carbone	CNPI 2.1.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S504-12	Standard for Dry Chemical Fire Extinguishers	NFC 2.1.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S504-12	Norme sur les extincteurs à poudres chimiques	CNPI 2.1.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S507-05	Standard for Water Fire Extinguishers	NFC 2.1.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S507-05	Norme sur les extincteurs à eau	CNPI 2.1.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S508~~-02~~:2023	Standard for the Rating and Fire Testing of Fire Extinguishers	NFC 2.1.5.1.(5)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S508~~-02~~:2023	~~Norme sur la classification~~Classification et ~~essai~~essais sur foyers types des extincteurs	CNPI 2.1.5.1. 5)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S512-M87	Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers	NFC 2.1.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S512-M87	Norme sur les extincteurs à produits halogénés, à main et sur roues	CNPI 2.1.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S524:2019	Standard for Installation of Fire Alarm Systems	NBC 3.1.8.11.(3) NBC 3.1.8.14.(3) NBC 3.2.4.20.(10) NBC 3.2.4.20.(15) NBC 3.2.4.20.(7) NBC 3.2.4.20.(8) NBC 3.2.4.5.(1) NBC 9.10.19.4.(3) NBC 9.10.19.6.(2) NBC A-3.2.4.18.(9) and (10) NBC A-3.2.4.19.(1)(g) NBC A-3.2.4.20.(10) NBC A-3.2.4.7.(4)

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ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S524:2019	Norme sur l'installation des systèmes d'alarme incendie	CNB 3.1.8.11. 3) CNB 3.1.8.14. 3) CNB 3.2.4.20. 10) CNB 3.2.4.20. 15) CNB 3.2.4.20. 7) CNB 3.2.4.20. 8) CNB 3.2.4.5. 1) CNB 9.10.19.4. 3) CNB 9.10.19.6. 2) CNB A-3.2.4.18. 9) et 10) CNB A-3.2.4.19. 1)g) CNB A-3.2.4.20. 10) CNB A-3.2.4.7. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S526-2016	Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories	NBC A-3.2.4.19.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S526-2016	Appareils à signal visuel pour systèmes d'alarme incendie, y compris les accessoires	CNB A-3.2.4.19. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S531:2019	Standard for Smoke Alarms	NBC 3.2.4.20.(2) NBC 9.10.19.1.(1) NFC 2.1.3.3.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S531:2019	Norme sur les avertisseurs de fumée	CNB 3.2.4.20. 2) CNB 9.10.19.1. 1) CNPI 2.1.3.3. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S536:2019	Standard for Inspection and Testing of Fire Alarm Systems	NFC 6.3.1.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S536:2019	Norme sur l’inspection et la mise à l'essai des systèmes d'alarme incendie	CNPI 6.3.1.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S537:2019	Standard for Verification of Fire Alarm Systems	NBC 3.2.4.5.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S537:2019	Norme sur la vérification des systèmes d'alarme d'incendie	CNB 3.2.4.5. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S540-13	Standard for Residential Fire and Life Safety Warning Systems: Installation, Inspection, Testing and Maintenance	NBC 3.2.4.21.(1) NBC 9.10.19.8.(1) NBC 9.10.2.2.(3) NBC 9.10.2.2.(4) NFC 6.7.1.1.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S540-13	Norme sur les systèmes d'alarme incendie résidentiels et de sécurité des personnes : installation, inspection, mise à l'essai et entretien	CNB 3.2.4.21. 1) CNB 9.10.19.8. 1) CNB 9.10.2.2. 3) CNB 9.10.2.2. 4) CNPI 6.7.1.1. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S552-14	Standard for Maintenance and Testing of Smoke Alarms	NFC 6.7.1.1.(1)

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ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S552-14	Norme sur l'entretien et la mise à l'essai des avertisseurs de fumée	CNPI 6.7.1.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S553-14	Standard for the Installation of Smoke Alarms	NBC 3.2.4.20.(13) NBC 9.10.19.3.(2) NFC 2.1.3.3.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S553-14	Norme sur l'installation des avertisseurs de fumée	CNB 3.2.4.20. 13) CNB 9.10.19.3. 2) CNPI 2.1.3.3. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S554:2016	Standard for Water Based Agent Fire Extinguishers	NFC 2.1.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S554:2016	Norme sur les extincteurs à agent à base d'eau	CNPI 2.1.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S561-13	Standard for Installation and Services for Fire Signal Receiving Centres and Systems	NBC 3.2.4.7.(4) NBC A-3.2.4.7.(4) NFC 6.3.1.3.(1) NFC A-6.3.1.3.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S561-13	Norme sur l'installation et les services – Systèmes et centrales de réception d'alarme incendie	CNB 3.2.4.7. 4) CNB A-3.2.4.7. 4) CNPI 6.3.1.3. 1) CNPI A-6.3.1.3. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S566:2017	Standard for Halocarbon Clean Agent Fire Extinguishers	NFC 2.1.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S566:2017	Norme sur les extincteurs aux agents propres à l'halocarbure	CNPI 2.1.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S572:2017	Standard for Photoluminescent and Self-Luminous Exit Signs and Path Marking Systems	NBC 3.4.5.1.(3) NBC 3.4.5.1.(4) NBC 9.9.11.3.(3) NBC 9.9.11.3.(4) NBC A-3.4.5.1.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S572:2017	Norme sur les panneaux de signalisation d'issue et les systèmes de marquage de parcours photoluminescents et autolumineux	CNB 3.4.5.1. 3) CNB 3.4.5.1. 4) CNB 9.9.11.3. 3) CNB 9.9.11.3. 4) CNB A-3.4.5.1. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S601-14	Standard for Shop Fabricated Steel Aboveground Tanks for Flammable and Combustible Liquids	NFC 4.3.1.2.(1) NFC 4.3.3.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S601-14	Norme sur les réservoirs hors sol en acier fabriqués en usine pour liquides inflammables et combustibles	CNPI 4.3.1.2. 1) CNPI 4.3.3.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S602-14	Standard for Steel Aboveground Tanks for Fuel Oil and Lubricating Oil	NFC 4.3.1.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S602-14	Norme sur les réservoirs en acier non enterrés pour le mazout et l'huile lubrifiante	CNPI 4.3.1.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S603.1-11	Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids	NFC 4.3.1.2.(1) NFC 4.3.10.1.(1) NFC 4.3.8.6.(1) NFC 4.5.3.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S603.1-11	Norme sur les systèmes de protection contre la corrosion extérieure des réservoirs enterrés en acier pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1) CNPI 4.3.10.1. 1) CNPI 4.3.8.6. 1) CNPI 4.5.3.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S603-14	Standard for Steel Underground Tanks for Flammable and Combustible Liquids	NFC 4.3.1.2.(1) NFC 4.4.3.2.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S603-14	Norme sur les réservoirs souterrains en acier pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1) CNPI 4.4.3.2. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S610:2018	Standard for Factory-Built Fireplace Systems	NBC 9.22.8.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S610:2018	Norme sur les systèmes foyers à feu ouvert préfabriqué	CNB 9.22.8.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S612:2016	Standard for Hose and Hose Assemblies for Flammable and Combustible Liquids	NFC 4.6.5.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S612:2016	Norme sur les tuyaux flexibles et tuyaux flexibles à raccords pour liquides inflammables et combustibles	CNPI 4.6.5.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S615-14	Standard for Fibre Reinforced Plastic Underground Tanks for Flammable and Combustible Liquids	NFC 4.3.1.2.(1) NFC 4.3.8.6.(2) NFC 4.4.3.2.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S615-14	Norme sur les réservoirs en plastique renforcé souterrains pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1) CNPI 4.3.8.6. 2) CNPI 4.4.3.2. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S620:2016	Standard for Hose Nozzle Valves for Flammable and Combustible Liquids	NFC 4.5.7.1.(2) NFC 4.6.5.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S620:2016	Norme sur les pistolets pour liquides inflammables et combustibles	CNPI 4.5.7.1. 2) CNPI 4.6.5.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S629:2016	Standard for 650°C Factory-Built Chimneys	NBC 9.33.10.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S629:2016	Norme sur les cheminées préfabriquées pour des températures n'excédant pas 650 °C	CNB 9.33.10.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S633:2017	Standard for Flexible Connector Piping for Fuels	NFC 4.5.6.14.(2)

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ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S633:2017	Norme pour les tuyaux de raccordement flexibles pour carburants	CNPI 4.5.6.14. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S639-M87	Standard for Steel Liner Assemblies for Solid-Fuel Burning Masonry Fireplaces	NBC 9.22.2.3.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S639-M87	Norme relative aux chemisages en acier pour foyers à feu ouvert en maçonnerie à combustibles solides	CNB 9.22.2.3. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S642:2016	Standard for Compounds and Tapes for Threaded Pipe Joints	NFC 4.5.5.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S642:2016	Norme sur les composés et rubans pour joints de tuyau filetés	CNPI 4.5.5.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S644:2016	Standard for Emergency Breakaway Fittings for Flammable and Combustible Liquids	NFC 4.6.5.2.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S644:2016	Norme sur les raccords frangibles d'urgence pour liquides inflammables et combustibles	CNPI 4.6.5.2. 4)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S651:2016	Standard for Emergency Valves for Flammable and Combustible Liquids	NFC 4.5.7.1.(3) NFC 4.6.6.3.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S651:2016	Norme sur les robinets d'urgence pour liquides inflammables et combustibles	CNPI 4.5.7.1. 3) CNPI 4.6.6.3. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-~~S652~~ 652:~~2016~~2024	Standard for Tank Assemblies for the Collection, Storage and Removal of Used Oil	NFC 4.3.1.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-~~S652~~ 652:~~2016~~2024	Norme sur les ensembles réservoirs destinés à la collecte, au stockage et à l'enlèvement de l'huile usagée	CNPI 4.3.1.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-~~S653~~ 653:~~2016~~2024	Standard for Aboveground Horizontal Steel Contained Tank Assemblies for Flammable and Combustible Liquids	NFC 4.3.1.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-~~S653~~ 653:~~2016~~2024	Norme sur les ensembles réservoirs de confinement en acier horizontaux hors sol pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-~~S655~~655-15	Standard for Aboveground Protected Tank Assemblies for Flammable and Combustible Liquids	NFC 4.3.1.2.(1) NFC 4.3.2.1.(7) NFC 4.3.7.4.(2) NFC 4.6.2.1.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-~~S655~~655-15	Norme sur les ensembles réservoirs protégés hors sol pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1) CNPI 4.3.2.1. 7) CNPI 4.3.7.4. 2) CNPI 4.6.2.1. 3)

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ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S661-10	Standard for Overfill Protection Devices for Flammable and Combustible Liquid Storage Tanks	NFC 4.3.1.8.(1) NFC 4.3.1.8.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S661-10	Norme sur les dispositifs de protection contre les débordements pour les réservoirs de stockage de liquides inflammables et combustibles	CNPI 4.3.1.8. 1) CNPI 4.3.1.8. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S663-11	Standard for Spill Containment Devices for Flammable and Combustible Liquid Aboveground Storage Tanks	NFC 4.3.6.4.(4)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S663-11	Norme sur les dispositifs de confinement des déversements pour les réservoirs de stockage de liquides inflammables et de liquides combustibles hors sol	CNPI 4.3.6.4. 4)
ULC (Underwriter's Laboratories of Canada)	**ANSI**/CAN/**UL**/ULC-~~**S664**~~ **2447**:~~**2017**~~**2023**	Standard for Containment Sumps, ~~**Sump**~~**Fittings** ~~**Fittings,**~~ and Accessories for Flammable and Combustible Liquids	NFC 4.3.9.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	**ANSI**/CAN/**UL**/ULC-~~**S664**~~ **2447**:~~**2017**~~**2023**	Norme sur les puisards de ~~**confinements**~~**confinement**, raccords de puisard et accessoires pour liquides inflammables et combustibles	CNPI 4.3.9.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S668-12	Standard for Liners Used for Secondary Containment of Aboveground Flammable and Combustible Liquid Tanks	NFC 4.3.7.2.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S668-12	Norme sur les membranes de confinement secondaire pour les réservoirs de stockage de liquides inflammables et de liquides combustibles hors sol	CNPI 4.3.7.2. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S669-14	Standard for Internal Retrofit Systems for Underground Tanks for Flammable and Combustible Liquids	NFC 4.3.1.10.(3) NFC A-4.3.1.10.(3)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S669-14	Norme sur les systèmes de rénovation internes des réservoirs souterrains pour liquides inflammables et combustibles	CNPI 4.3.1.10. 3) CNPI A-4.3.1.10. 3)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S675.1-14	Standard for Volumetric Leak Detection Devices for Underground and Aboveground Storage Tanks for Flammable and Combustible Liquids	NFC A-4.4.2.1.(10)(a) NFC A-4.4.2.1.(5) NFC A-4.4.2.1.(7)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S675.1-14	Norme sur les dispositifs de détection volumétriques de fuite des réservoirs enterrés et non enterrés pour les liquides inflammables et les liquides combustibles	CNPI A-4.4.2.1. 10)a) CNPI A-4.4.2.1. 5) CNPI A-4.4.2.1. 7)

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ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S675.2-14	Standard for Nonvolumetric Precision Leak Detection Devices for Underground and Aboveground Storage Tanks and Piping for Flammable and Combustible Liquids	NFC A-4.4.2.1.(10)(a) NFC A-4.4.2.1.(7)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S675.2-14	Norme sur les dispositifs de détection des fuites de précision non volumétriques pour les réservoirs de stockage et les tuyauteries, souterrains et hors sol, de liquides inflammables et combustibles	CNPI A-4.4.2.1. 10)a) CNPI A-4.4.2.1. 7)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S676~~-15~~**:2020**	Standard for Refurbishing of Storage Tanks for Flammable and Combustible Liquids	NFC 4.3.1.10.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S676~~-15~~**:2020**	Norme sur la remise à neuf des réservoirs ~~de stockage~~ pour les liquides inflammables et combustibles	CNPI 4.3.1.10. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-~~S677~~ **677**-14	Standard for Fire Tested Aboveground Tank Assemblies for Flammable and Combustible Liquids	NFC 4.3.1.2.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-~~S677~~ **677**-14	Norme sur les ensembles réservoirs hors sol résistant au feu pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S679:2017	Standard for Metallic and Nonmetallic Underground Piping for Flammable and Combustible Liquids	NFC 4.5.2.1.(3) NFC 4.5.6.14.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S679:2017	Norme sur les canalisations souterraines métalliques et non métalliques pour liquides inflammables et combustibles	CNPI 4.5.2.1. 3) CNPI 4.5.6.14. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S701.1:2017	Standard for Thermal Insulation, Polystyrene Boards	NBC 9.25.2.2.(1) NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC Table A-9.36.2.4.(1)D
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S701.1:2017	Norme sur l'isolant thermique en polystyrène	CNB 9.25.2.2. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB Tableau A-9.36.2.4. 1)D

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ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S702.1-14	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification	NBC 3.1.6.3.(4) NBC 9.10.9.8.(3) NBC 9.25.2.2.(1) NBC A-5.9.1.1.(1) NBC D-2.3.4. NBC D-2.3.5. NBC D-2.6.1. NBC D-6.1.1. NBC D-7.4. NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC Table A-9.36.2.4.(1)D
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S702.1-14	Norme sur l'isolant thermique de fibres minérales pour bâtiments, partie 1 : Spécifications relatives aux matériaux	CNB 3.1.6.3. 4) CNB 9.10.9.8. 3) CNB 9.25.2.2. 1) CNB A-5.9.1.1. 1) CNB D-2.3.4. CNB D-2.3.5. CNB D-2.6.1. CNB D-6.1.1. CNB D-7.4. CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB Tableau A-9.36.2.4. 1)D
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S703-09	Standard for Cellulose Fibre Insulation (CFI) for Buildings	NBC 9.25.2.2.(1) NBC D-2.3.4. NBC Table 5.9.1.1. NBC Table A-9.36.2.4.(1)D
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S703-09	Norme sur l'isolant en fibre cellulosique (IFC) pour les bâtiments	CNB 9.25.2.2. 1) CNB D-2.3.4. CNB Tableau 5.9.1.1. CNB Tableau A-9.36.2.4. 1)D
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-~~S704~~704.1:~~2017~~2023	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced	NBC 9.25.2.2.(1) NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC Table A-9.36.2.4.(1)D
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-~~S704~~704.1:~~2017~~2023	Norme sur l'isolant thermique en polyuréthane et en polyisocyanurate ~~: :~~ panneaux revêtus	CNB 9.25.2.2. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB Tableau A-9.36.2.4. 1)D
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S705.1-18	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification	NBC 9.25.2.2.(1) NBC Table 5.9.1.1. NBC Table A-9.36.2.4.(1)D

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S705.1-18	Norme sur l'isolant thermique en mousse de polyuréthane rigide pulvérisée, de densité moyenne – spécifications relatives aux matériaux	CNB 9.25.2.2. 1) CNB Tableau 5.9.1.1. CNB Tableau A-9.36.2.4. 1)D
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S705.2~~-05~~:2022	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application	NBC 9.25.2.5.(1) NBC Table 5.9.1.1.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S705.2~~-05~~:2022	Norme sur l'isolant thermique en mousse de polyuréthane rigide pulvérisée, de densité moyenne – Application	CNB 9.25.2.5. 1) CNB Tableau 5.9.1.1.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S706.1:2016	Standard for Wood Fibre Insulating Boards for Buildings	NBC 9.23.16.7.(3) NBC 9.25.2.2.(1) NBC 9.29.8.1.(1) NBC D-3.1.1. NBC Table 5.9.1.1. NBC Table 9.23.17.2.A
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S706.1:2016	Norme sur les panneaux isolants en fibre de bois pour bâtiments	CNB 9.23.16.7. 3) CNB 9.25.2.2. 1) CNB 9.29.8.1. 1) CNB D-3.1.1. CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S710.1:2019	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification	NBC 9.36.2.10.(6) NBC Table 5.9.1.1.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S710.1:2019	Norme sur la mousse d'étanchéité à l'air de polyuréthane monocomposant appliquée en cordon, partie 1 : spécifications relatives au matériau	CNB 9.36.2.10. 6) CNB Tableau 5.9.1.1.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S711.1:2019	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification	NBC 9.36.2.10.(6) NBC Table 5.9.1.1.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S711.1:2019	Norme sur la mousse d'étanchéité à l'air de polyuréthane bicomposant appliquée en cordon, partie 1 : spécifications relatives au matériau	CNB 9.36.2.10. 6) CNB Tableau 5.9.1.1.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-~~S712~~ 712.1:~~2017~~2024	Standard for Thermal Insulation - Light Density, Open Cell Spray Applied Semi-Rigid Polyurethane Foam - Material Specification	NBC Table A-9.36.2.4.(1)D
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-~~S712~~ 712.1:~~2017~~2024	Norme sur l'isolant thermique en mousse de polyuréthane semi-rigide pulvérisée, de faible densité et à alvéoles ouverts - spécifications relatives au matériau	CNB Tableau A-9.36.2.4. 1)D

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S716.1-12	Standard for Exterior Insulation and Finish Systems (EIFS) - Materials and Systems	NBC 5.9.4.1.(1) NBC 9.27.14.1.(1) NBC 9.27.14.2.(1) NBC A-5.9.4.1.(1) NBC A-9.27.14.2.(2)(a)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S716.1-12	Norme pour les systèmes d'isolation et de finition extérieurs (Systèmes SIFE) – Matériaux et systèmes	CNB 5.9.4.1. 1) CNB 9.27.14.1. 1) CNB 9.27.14.2. 1) CNB A-5.9.4.1. 1) CNB A-9.27.14.2. 2)a)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S716.2-12	Standard for Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier	NBC 9.27.14.3.(1) NBC A-5.9.4.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S716.2-12	Norme pour les systèmes d'isolation et de finition extérieurs (SIFE) – Installation des composants des systèmes SIFE et de la barrière résistant à l'eau	CNB 9.27.14.3. 1) CNB A-5.9.4.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S716.3-12	Standard for Exterior Insulation and Finish System (EIFS) - Design Application	NBC 9.27.14.3.(1) NBC A-5.9.4.1.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S716.3-12	Norme pour les systèmes d'isolation et de finition extérieurs (Systèmes SIFE) – Application de la conception	CNB 9.27.14.3. 1) CNB A-5.9.4.1. 1)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S717.1:~~2017~~2022	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties	NBC 9.15.4.1.(1) NBC Table 5.9.1.1.
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S717.1:~~2017~~2022	Norme sur les unités de coffrage à bétons isolants pour murs plats – ~~propriétés~~Propriétés des matériaux	CNB 9.15.4.1. 1) CNB Tableau 5.9.1.1.
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S741-08	Standard for Air Barrier Materials – Specification	NBC 5.4.1.2.(2) NBC 9.36.2.10.(1) NECB 3.2.4.3.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S741-08	Norme sur les matériaux d'étanchéité à l'air – Spécification	CNB 5.4.1.2. 2) CNB 9.36.2.10. 1) CNÉB 3.2.4.3. 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S742-11	Standard for Air Barrier Assemblies – Specification	NBC 5.4.1.2.(1) NBC 5.4.1.2.(2) NBC 9.36.2.9.(1) NBC A-5.4.1.1.(3) NBC A-5.4.1.2.(1) NBC A-5.4.1.2.(2) NBC A-5.4.1.2.(4) NBC A-9.36.2.10.(5)(b) NBC A-9.36.2.9.(1) NECB 3.2.4.3.(2) NECB A-3.2.4.3.(1) and (2)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S742-11	Norme sur les ensembles d'étanchéité à l'air – Spécification	CNB 5.4.1.2. 1) CNB 5.4.1.2. 2) CNB 9.36.2.9. 1) CNB A-5.4.1.1. 3) CNB A-5.4.1.2. 2) CNB A-5.4.1.2. 4) CNB A-5.4.1.2. 1) CNB A-9.36.2.10. 5)b) CNB A-9.36.2.9. 1) CNÉB 3.2.4.3. 2) CNÉB A-3.2.4.3. 1) et 2)
ULC (Underwriter's Laboratories of Canada)	CAN/ULC-S770-15	Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams	NBC Table A-9.36.2.4.(1)D
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	CAN/ULC-S770-15	Méthode d'essai normalisée pour la détermination de la résistance thermique à long terme des mousses isolantes thermiques à alvéoles fermés	CNB Tableau A-9.36.2.4. 1)D
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C107.12-92	Line Leak Detection Devices for Flammable Liquid Piping	NFC 4.4.2.1.(11) NFC 4.4.3.4.(2) NFC 4.4.4.2.(1) CNPI 4.4.2.1. 11) CNPI 4.4.3.4. 2) CNPI 4.4.4.2. 1)
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C107.21-92	Under-Dispenser Sumps	NFC 4.6.3.2.(1) CNPI 4.6.3.2. 1)
ULC (Underwriter's Laboratories of Canada)	**ANSI/CAN/UL/**ULC**/~~ORD-C1254.6-95~~ 300:2022**	**Standard for** Fire Testing of **~~Restaurant Cooking Area~~** Fire Extinguishing **~~System~~Systems ~~Units~~for Protection of Commercial Cooking Equipment**	NBC 6.9.1.3.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	**ANSI/CAN/UL/**ULC**/~~ORD-C1254.6-95~~ 300:2022**	**~~Fire~~Norme ~~Testing~~sur ~~of~~la ~~Restaurant~~mise ~~Cooking~~à ~~Area~~l'essai ~~Fire~~de ~~Extinguishing~~systèmes ~~System~~d'extinction ~~Units~~d'incendie conçus pour la protection d'équipement de cuisson commercial**	CNB 6.9.1.3. 1)
ULC (Underwriter's Laboratories of Canada)	**ANSI/CAN/UL/**ULC**/~~ORD-C1275-84~~ 1275:2021**	**~~Guide for the Investigation of Storage Cabinets~~Standard** for Flammable Liquid **~~Containers~~Storage Cabinets**	NFC 4.2.10.5.(1)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	**ANSI/CAN/UL/**ULC**/~~ORD-C1275-84~~ 1275:2021**	**~~Guide~~Armoires ~~for~~de ~~the~~stockage ~~Investigation~~de ~~of~~liquides ~~Storage Cabinets for Flammable Liquid Containers~~inflammables**	CNPI 4.2.10.5. 1)
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C199P-02	Combustible Piping for Sprinkler Systems	NBC 3.2.5.13.(2) NBC 3.2.5.13.(5) CNB 3.2.5.13. 2) CNB 3.2.5.13. 5)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC (Underwriter's Laboratories of Canada)	**ANSI/CAN/UL**/ULC/~~**ORD-C30-95**~~ **30:2022**	**Standard for Metallic and Nonmetallic** Safety ~~**Containers**~~**Cans for Flammable and Combustible Liquids**	NFC 4.1.5.8.(2) NFC 4.2.3.1.(1) NFC 4.2.6.4.(1) NFC 5.5.5.2.(2)
ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)	**ANSI/CAN/UL**/ULC/~~**ORD-C30-95**~~ **30:2022**	~~**Safety**~~**Les** ~~**Containers**~~**bidons de sécurité métalliques et non métalliques pour liquids inflammables et combustibles**	CNPI 4.1.5.8. 2) CNPI 4.2.3.1. 1) CNPI 4.2.6.4. 1) CNPI 5.5.5.2. 2)
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C410A-94	Absorbents for Flammable and Combustible Liquids	NFC A-4.1.6.3.(3)(b) CNPI A-4.1.6.3. 3)b)
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C536-98	Flexible Metallic Hose	NFC 4.5.6.14.(2) CNPI 4.5.6.14. 2)
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C558-75	Guide for the Investigation of Internal Combustion Engine-Powered Industrial Trucks	NFC 3.1.3.1.(2) CNPI 3.1.3.1. 2)
~~**ULC (Underwriter's Laboratories of Canada)**~~**UL (Underwriters Laboratories Inc.)**	~~**ULC**~~**ANSI**/~~**ORD-C583-74**~~**CAN/UL 583:2022**	~~**Guide**~~**Standard** for ~~**the Investigation of**~~ Electric ~~-~~Battery ~~-~~Powered Industrial Trucks	NFC 3.1.3.1.(3)
~~**ULC (Laboratoires des assureurs du Canada/Underwriter's Laboratories of Canada)**~~**UL (Underwriters Laboratories Inc.)**	~~**ULC**~~**ANSI**/~~**ORD-C583-74**~~**CAN/UL 583:2022**	~~**Guide**~~**Camions** ~~**for**~~**industriels** ~~**the**~~**électrique** ~~**Investigation**~~**à** ~~**of Electric Battery Powered Industrial Trucks**~~**batterie**	CNPI 3.1.3.1. 3)
ULC (Underwriter's Laboratories of Canada)	ULC/ORD-C842-84	Guide for the Investigation of Valves for Flammable and Combustible Liquids	NFC 4.5.7.1.(1) CNPI 4.5.7.1. 1)
ULC (Underwriter's Laboratories of Canada)	ULC-S135-~~**04**~~**2022**	Standard Test Method for the Determination of Combustibility Parameters of Building Materials Using an Oxygen Consumption Calorimeter (Cone Calorimeter)	NBC 3.1.5.1.(2) CNB 3.1.5.1. 2)
ULC (Underwriter's Laboratories of Canada)	ULC-S332-93	Standard for Burglary Resisting Glazing Material	NBC A-9.7.5.2.(1) CNB A-9.7.5.2. 1)
ULC (Underwriter's Laboratories of Canada)	ULC-S505-74	Standard for Fusible Links for Fire Protection Services	NBC 3.1.8.10.(2) CNB 3.1.8.10. 2)
ULC (Underwriter's Laboratories of Canada)	ULC-S628-93	Standard for Fireplace Inserts	NBC 9.22.10.1.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
U.S. Congress (U.S. Congress)	-	National Appliance Energy Conservation Act of 1987	NBC Table 9.36.4.2. NBC Table 9.36.5.16. CNB Tableau 9.36.4.2. CNB Tableau 9.36.5.16.
WCLIB (West Coast Lumber Inspection Bureau)	No. 17 (2004)	Grading Rules for West Coast Lumber	NBC A-Table 9.3.2.1. CNB A-Tableau 9.3.2.1.
WWPA (Western Wood Products Association)	2017	Western Lumber Grading Rules 2017	NBC A-Table 9.3.2.1. CNB A-Tableau 9.3.2.1.

Submit a comment

Proposed Change 1950

Code Reference(s):	**NBC20 Div.B 9.7.6.1. (first printing)** **NBC20 Div.B 9.27.2. (first printing)** **NBC20 Div.B 9.27.3. (first printing)**
Subject:	Building Envelope - General
Title:	Protection from Precipitation of the Rough Opening Sills for Windows and Doors
Description:	This proposed change clarifies the requirements for protection from precipitation of rough opening sills for windows and doors to more closely align these requirements with established building science principles and standards.

This change could potentially affect the following topic areas:

- [ ] Division A
- [ ] Division C
- [ ] Building operations
- [x] Small Buildings
- [ ] Fire Protection
- [ ] Accessibility
- [x] Building Envelope
- [ ] Heating, Ventilating and Air Conditioning
- [x] Division B
- [x] Design and Construction
- [x] Housing
- [ ] Large Buildings
- [ ] Occupant safety in use
- [ ] Structural Requirements
- [ ] Energy Efficiency
- [ ] Plumbing
- [ ] Construction and Demolition Sites

Problem

The lack of clarity in Section 9.27. of the National Building Code of Canada (NBC) has contributed to the improper installation and detailing of the rough openings for windows and doors, particularly regarding water ingress. This issue is of even greater concern when additional insulation is installed and drying potential is reduced, as would be required for compliance with higher energy performance tiers.

The current wording of the NBC states that windows and doors should be sealed to the second plane of protection, similar to pipes and ducts. This wording has resulted in a misalignment of the location where the second plane of protection should be sealed to windows and doors, which has led to the face-sealing of windows and doors that prevents, rather than allows, drainage of the cavity.

The second plane is intended to intercept and drain back to the exterior incidental water that penetrates the first plane. However, the NBC is often interpreted as treating windows and doors the same as pipes and ducts. This approach of treating the rough openings for windows and doors the same as those for simple pipe penetrations causes several issues:

1. **Limited water management:** The wording in the NBC 2020 on how to seal the second plane to the window or door face does not currently align with the water management design of window and door units, which incorporates drainage pathways that divert water back to the exterior.
2. **Potential damage:** Without a proper drainage pathway, water ingress from above a window or door can accumulate below the window and cause damage to the wall assembly.
3. **Lack of clarity:** The requirements for the second plane of protection for rough openings are not effectively explained or defined in the NBC, neither are the requirements for the drainage of the sill. Instead, the NBC primarily provides requirements for walls.

Justification

This proposed change clarifies the current acceptable solutions to more reasonably align them with the requirements for the second plane of protection, ensuring the intended use of the second plane of protection for water diversion is maintained into the rough openings for windows and doors.

1. Align with water management guidelines for rough openings: This proposed change clearly defines the second plane of protection as extending to the interior face of the rough opening sill of a window or door. This protection ensures that any rainwater or meltwater that penetrates the first plane, at or above the window or door, is effectively collected and drained to the exterior, in accordance with NBC Article 9.27.2.3. This protection can be accomplished by:

a. Using a self-adhered, liquid-applied, or non-adhesive membrane to protect the sill. This membrane should extend upward on the side jambs and be sealed to the wood-frame side jambs to reduce water ingress behind the sill protection. Where a non-adhesive membrane is used for sill protection, the sheathing membrane of the side jambs should extend into the rough opening and create a drainage plane by extending downward over the lower non-adhesive sill protection membrane. This setup helps divert water from above, down the sides, and into the sill protection membrane, effectively channeling it back to the exterior; and

b. Maintain an open window head to allow drainage of incidental water ingress down onto the window unit, down the side jambs, and onto the sill to be diverted back to the exterior.

By implementing these guidelines, we can ensure that water is effectively managed around windows and doors, preventing damage and enhancing the overall durability and performance of the building envelope, which would be more in line with good

building science principles and standards such as the CSA A440.4, "Window, door, and skylight installation." This approach is particularly important as higher energy efficiency requirements increase insulation values and airtightness, reducing the potential for natural drying in the event of unintended water ingress.

2. Enhance protection against potential damage: By providing clear wording on creating effective drainage paths for incidental water ingress into a rough opening from above or around a window or door, this proposed change could help prevent subsequent damage to the wall assembly if and when incidental water ingress occurs. This change would improve the durability and performance of the building envelope, particularly in high-efficiency buildings where drying potential is reduced.

3. Improve clarity and consistency: This proposed change revises Code wording to clarify that the rough opening is part of the second plane of protection. This clarity would help builders and inspectors apply consistent and effective water management practices, reducing the risk of misinterpretation and improper installation.

In conclusion, this proposed change to wording in NBC Section 9.27 is necessary to address issues of limited water management, potential damage, and lack of clarity. Aligning NBC requirements with current best practice and enhancing requirements for sealing and drainage would improve building envelope performance and durability, especially in high-efficiency constructions. Clarifying that window and door rough openings are part of the second plane of protection, in accordance with the CSA A440.4, would promote effective building science practices in energy-efficient homes with limited drying ability.

PROPOSED CHANGE

[9.7.6.1.] 9.7.6.1. Installation of Windows, Doors and Skylights

[1] 1) The installation of manufactured and pre-assembled windows, doors and skylights shall conform to CSA A440.4, "Window, door, and skylight installation".~~except that~~

[a] a) ~~shims used to support windows, doors and skylights are permitted to be made of treated plywood, and~~

[b] b) ~~protection from precipitation for walls incorporating windows or doors and for roofs incorporating skylights, and the interfaces of these walls with windows or doors and of roofs with skylights, shall also conform to Section 9.27.~~

[2] 2) The installation ~~of manufactured and pre-assembled windows, doors and skylights~~ and the field assembly of manufactured window and door combination units shall conform to the manufacturer's instructions and include protection of rough opening sills as described in Section 9.27.

~~**[3] 3)** Windows, doors and skylights shall be sealed to air barriers.~~

[9.27.2.] 9.27.2. Required Protection from Precipitation

(See Note A-9.27.2.)

[9.27.2.1.] 9.27.2.1. Minimizing and Preventing Ingress and Damage

[9.27.2.2.] 9.27.2.2. Minimum Protection from Precipitation Ingress

[9.27.2.3.] 9.27.2.3. First and Second Planes of Protection

[1] **1)** Where walls required to provide protection from precipitation comprise cladding assemblies with first and second planes of protection,

[a] a) the first plane of protection shall

[i] i) consist of cladding with appropriate trim, accessory pieces and fasteners, and

[ii] ii) be designed and constructed to minimize the passage of rain and snow into the wall by minimizing holes and managing precipitation ingress caused by the kinetic energy of raindrops, surface tension, capillarity, gravity, and air pressure differences (see Subsection 9.27.4.),

[b] b) the second plane of protection shall be designed and constructed to (see Subsection 9.27.3.)

[i] i) intercept all rain and snow that gets past the first plane of protection, and

[ii] ii) effectively dissipate any rain or snow to the exterior, and

[c] c) the protection provided by the first and second planes of protection shall be maintained

[i] --) at the rough opening sills of windows and doors,

[ii] i) at wall penetrations created by the installation of components and services such as ~~windows, doors,~~ ventilation ducts, piping, wiring and electrical outlets, and

[iii] ii) at the interface with other wall assemblies.

[9.27.2.4.] 9.27.2.4. Protection of Cladding from Moisture

Note A-9.27.2. Required Protection from Precipitation.

Part 5 and Part 9 of the NBC recognize that mass walls and face-sealed, concealed barrier and rainscreen assemblies have their place in the Canadian context.

Mass walls are generally constructed of cast-in-place concrete or masonry. Without cladding or surface finish, they can be exposed to precipitation for a significant period before moisture will penetrate from the exterior to the interior. The critical characteristics of these walls are related to thickness, mass~~,~~ and moisture transfer properties, such as shedding, absorption and moisture diffusivity.

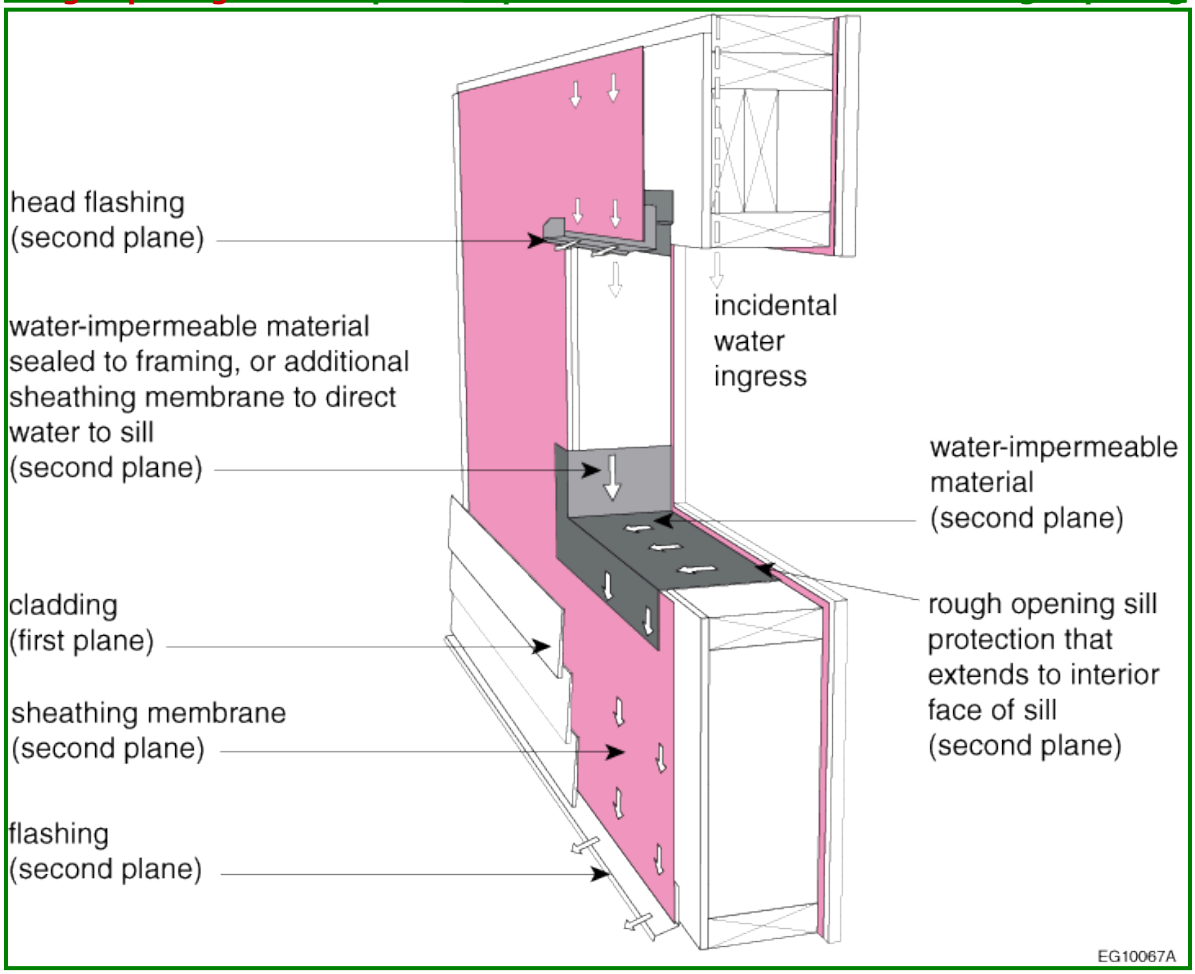
Face-sealed assemblies have only a single plane of protection. Sealant installed between cladding elements and other envelope components is part of the air barrier system and is exposed to the weather. Face-sealed assemblies are appropriate where it can be demonstrated that they will provide acceptable performance with respect to the health and safety of the occupants, the operation of building services, and the provision of conditions suitable for the intended occupancy. These assemblies, however, require more intensive, regular and ongoing maintenance, and should only be selected on the

basis of life-cycle costing considering the risk of failure and all implications should failure occur. Climate loads such as wind-driven rain, for example, should be considered. Face-sealed assemblies are not recommended where the building owner may not be aware of the maintenance issue or where regular maintenance may be problematic.

Concealed barrier assemblies include both a first and second plane of protection. The first plane comprises the cladding, which is intended to handle the majority of the precipitation load. The second plane of protection is intended to handle any water that penetrates the cladding plane~~. It allows for the dissipation of this water, primarily by gravity drainage, and provides a barrier to further ingress.~~ by using flashings to allow for the dissipation and drainage of this water. The flashings have upstand legs that extend behind the second plane of protection and provide a barrier to further water ingress.

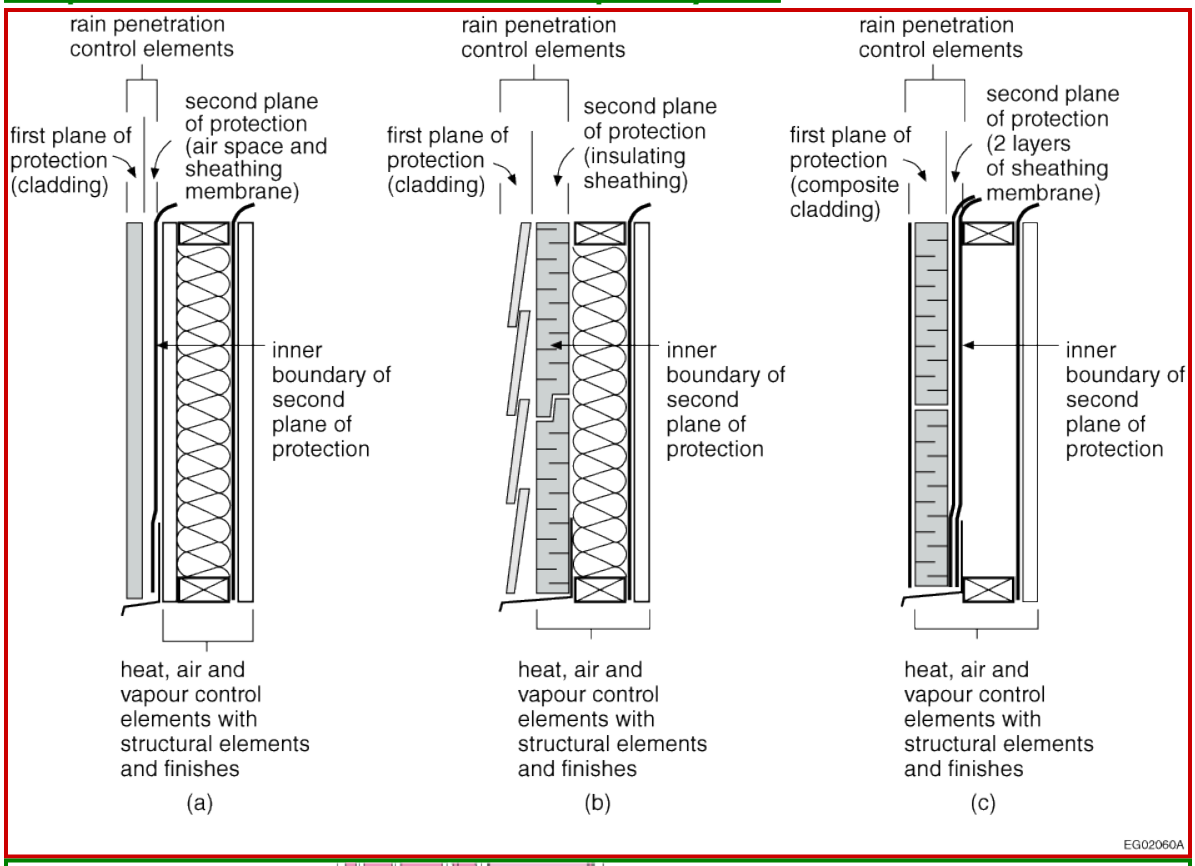
For windows or doors, the rough opening that penetrates the cladding system plays a crucial role as part of the concealed barrier assembly or second plane of protection. Incidental water may penetrate the first plane of protection or may enter from areas above or around a window or door (e.g., as the result of a failed window or door unit). Extending the second plane of protection into the rough opening at the sill, as shown in Figure 9.27.2.-A, ensures that this incidental water is collected and diverted back to the exterior over the protected sill. Thus, the rough opening, as a distinct feature, contributes to the effective management of water ingress and enhances overall performance. These characteristics are particularly important as insulation and airtightness levels increase at higher energy performance tiers, since higher levels reduce drying potential in the event of unintended water ingress.

Figure [A-9.27.2.-A]
~~Rough opening s~~Second plane of protection maintained into the rough opening



Like concealed barrier assemblies, rainscreen assemblies include both a first and second plane of protection. The first plane comprises the cladding, which is designed and constructed to handle virtually all of the precipitation load. The second plane of protection is designed and constructed to handle only very small quantities of incidental water; composition of the second plane is described in Note A-9.27.3.1. In these assemblies, the air barrier system, which plays a role in controlling precipitation ingress due to air pressure difference, is protected from the elements. (See ~~Figure A-9.27.2.~~Figures A-9.27.2.-B to A-9.27.2.-D.)

Figure [A-9.27.2.-B] A-9.27.2.
~~Generic~~ ~~r~~Rain~~screen~~ control assembly~~ies~~ with second plane of protection composed of a drained and vented air space system



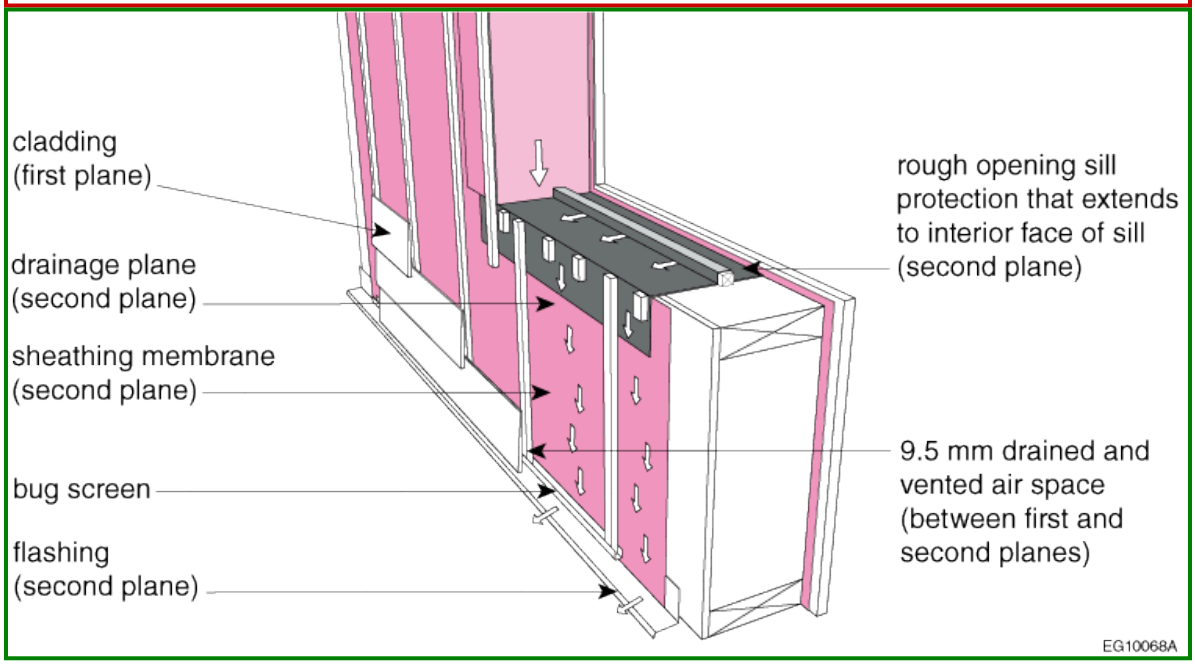


Figure [A-9.27.2.-C]
Rain control assembly with second plane of protection composed of insulating sheathing

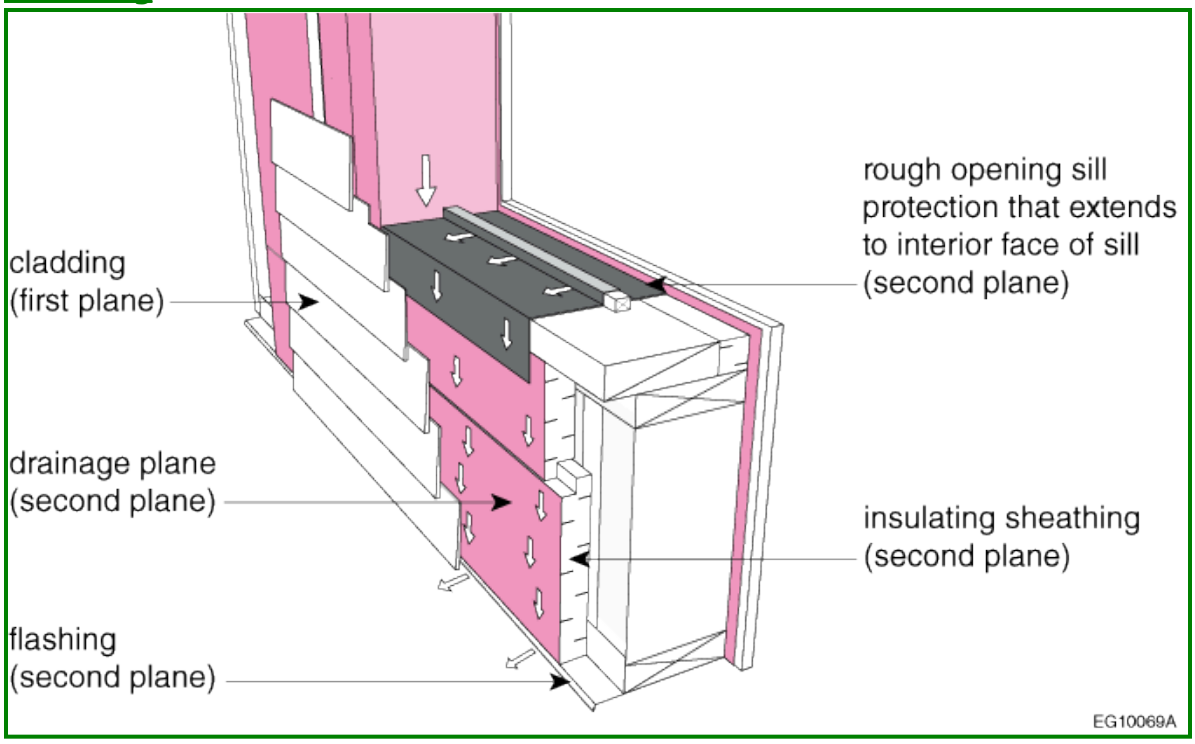
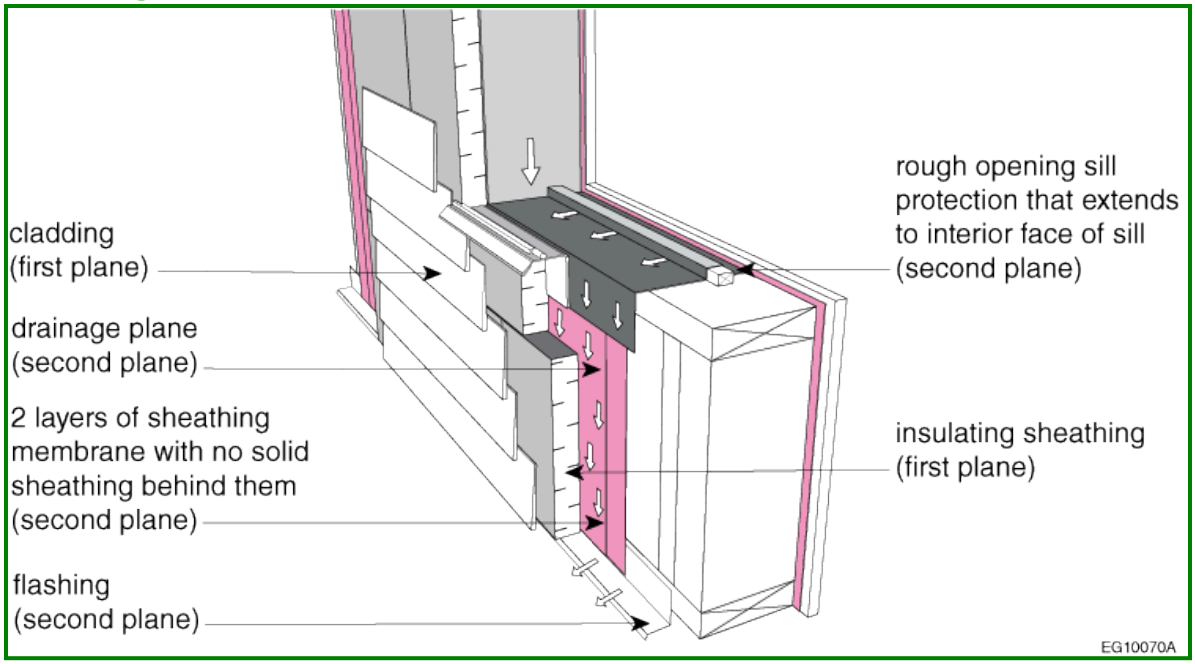


Figure [A-9.27.2.-D]
Rain control assembly with second plane of protection composed of 2 layers of sheathing membrane



The cladding assembly described in Sentence 9.27.2.2.(4) is a basic rainscreen assembly. This approach is required for residential buildings where a higher level of

ongoing performance is expected without significant maintenance. This approach, however, is recommended in all cases.

The cladding assemblies described in Sentence 9.27.2.2.(5) are also rainscreen assemblies. The assembly described in Clause 9.27.2.2.(1)(c) is again a basic rainscreen assembly. A wall with a capillary break as described in Clause 9.27.2.2.(1)(a) is an open rainscreen assembly. Walls with a capillary break as described in Clause 9.27.2.2.(1)(b) have been referred to as drainscreen assemblies.

[9.27.3.] 9.27.3. Second Plane of Protection

[9.27.3.1.] 9.27.3.1. Elements of the Second Plane of Protection

(See Note A-9.27.3.1.)

[1] 1) The second plane of protection shall consist of a drainage plane having an appropriate inner boundary and flashing to dissipate rainwater to the exterior.

[2] 2) Except for cladding systems conforming to Subsection 9.27.14., the inner boundary of the drainage plane shall comply with Articles 9.27.3.2. to 9.27.3.6.

[3] 3) The protection provided by the second plane of protection shall be maintained

[a] --) at the rough opening sills of windows and doors in conformance with Sentences (4) and (5),

[b] a) at wall penetrations created by the installation of components and services such as ~~windows, doors,~~ ventilation ducts, piping, wiring and electrical outlets, and

[c] b) at the interface with other wall assemblies.

[4] --) The protection of rough opening sills required by Clause (3)(a) shall

[a] --) conform to Article 9.7.6.1., and

[b] --) extend to the interior face of the rough opening sill of the window or door.

[5] --) The protection of rough opening sills required by Clause (3)(a) shall be of water-impermeable material that

[a] --) is liquid-applied or self-adhering to wood framing members extending up each side of the sill by 150 mm and is securely adhered to the side jambs, or

[b] --) is non-adhesive, where the sheathing membrane of the second plane of protection on the wall face extends into the rough opening to the interior face of the rough opening and down over the non-adhesive sill protection to create a drainage path to the sill.

[6] 4) Flashing material and its installation shall comply with Articles 9.27.3.7. and 9.27.3.8.

[9.27.3.2.] 9.27.3.2. Sheathing Membrane Material Standard

[9.27.3.3.] 9.27.3.3. Required Sheathing Membrane and Installation

[9.27.3.4.] 9.27.3.4. Insulating Sheathing in lieu of Sheathing Membrane

[9.27.3.5.] 9.27.3.5. Sheathing Membranes in lieu of Sheathing

[9.27.3.6.] 9.27.3.6. Face Sealed Cladding

[9.27.3.7.] 9.27.3.7. Flashing Materials

[9.27.3.8.] 9.27.3.8. Flashing Installation

Impact analysis

This proposed change is not expected to result in significant cost impacts compared to the current Code requirements and installation methods used across the country. The installation method used by most builders would remain unchanged. The primary objective is to clarify the location of the second plane of protection in relation to the rough opening for a window or door, making the requirements easier to comprehend, comply with, and enforce.

While the direct material requirements for installation would remain unchanged, there are potential indirect benefits beyond better understanding. By clarifying the purpose of both the first and second planes of protection and incorporating the rough opening as part of the concealed barrier assembly, there is a lower probability of incidental water ingress leading to damage.

This improved water management system could contribute to enhanced protection against moisture-related issues, reducing the risk of water infiltration and potential damage to the building envelope. Thus, besides facilitating better understanding, the proposed change could also bolster the overall performance of the wood wall interface with windows and doors by mitigating water intrusion.

Benefits of providing clarification include:

- Prevention of misinterpretation by authorities having jurisdiction, leading to consistent application and enforcement of building regulations, particularly in relation to specific installation standards, such as CSA A440.4. This would result in clarity and consistent standards for window and door installation.
- Alignment with other scholarly techniques for water management and standards for window and door installation, avoiding confusion.
- Adequate clarification of the Code provisions, contributing to proper installation practices and ensuring the performance and integrity of window and door systems. This could lead to benefits such as preventing air and water infiltration, increasing energy efficiency, and avoiding potential structural problems.

- Sufficient protection against water accumulation, which avoids the risk of moisture damage that can degrade building materials, promote mould growth, and compromise indoor air quality. This in turn could also lead to increased energy efficiency and lower operational costs.

Additionally, as buildings move towards higher standards of energy performance, involving higher insulation levels and lower air leakage rates, the drying potential of the building envelope is limited. Therefore, it becomes even more crucial to have robust methods and clear Code requirements to effectively protect rough openings. Updating the Code language could promote the achievement of energy performance goals and improve the overall performance and durability of buildings.

Enforcement implications

The proposed change is expected to simplify enforcement for authorities having jurisdiction.

By clarifying the rough opening and differentiating it from other penetrations without rough openings, this proposed change would facilitate enforcement. As a result, the proposed change should not require additional resources and could be enforced using the existing Code enforcement infrastructure.

Who is affected

This proposed change would impact designers, engineers, architects, manufacturers, builders, specification writers, and building officials in a positive manner. It aligns more closely with established building science principles and current methods stated in CSA A440.4, promoting better understanding and facilitating the discussion related to first and second planes of protection.

Supporting Document(s)

PCF 1951 (pcf_1951.pdf)

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[9.7.6.1.] 9.7.6.1. ([1] 1) [F20,F54,F55,F61,F63-OH1.1,OH1.2,OH1.3]

[9.7.6.1.] 9.7.6.1. ([1] 1) [F20,F61,F63-OS2.3]

~~**[9.7.6.1.] 9.7.6.1. ([1] 1) no attributions**~~

~~Intent 1:~~

~~To clarify that treated plywood shims are acceptable and that other Code requirements (Article 9.27.3.8.) for the preparation of the rough opening and the installation of flashing govern over requirements in the standard.~~

[9.7.6.1.] 9.7.6.1. ([2] 2) [F54,F55,F61,F63-OH1.1,OH1.2,OH1.3]

Intent 1:

To limit the probability that the installation of field-assembled~~, manufactured or pre-assembled~~ window~~s,~~ and door~~s~~ combination units~~, and skylights~~ will fall significantly below expectations.

This is to limit the probability of:

- premature deterioration of materials and components used for the installation,
- condensation on the surface of building elements and within assemblies,
- precipitation into interior space, or
- leakage of air induced by air pressure difference due to wind loads.

This is to limit the probability of:

- structural damage due to snow loads on skylights or where windows have sloped or near-horizontal components,
- the ingress of insects and vermin,
- excessive force required for operation of windows, doors and skylights, which could lead to inadequate ventilation, where windows are required for non-heating season ventilation
- the inadequate control of temperatures of interior spaces, drafts, relative humidity, or water accumulation,
- the generation of pollutants from biological growth or from materials that become unstable on wetting, or
- deterioration, which could lead to compromised integrity of assemblies acting as environmental separators.

This is to limit the probability of:

- negative effects on the air quality of indoor spaces,
- the inadequate thermal comfort of persons, and
- contact with moisture.

This is to limit the probability of harm to persons.

[9.7.6.1.] 9.7.6.1. ([2] 2) [F61,F63-OS2.3]

Intent 1:

To limit the probability that the installation of field-assembled~~, manufactured or pre-assembled~~ window~~s,~~ and door combination unit~~s, and skylights~~ will fall significantly below expectations.

This is to limit the probability of:

- premature deterioration of materials and components used for the installation,
- condensation on the surface of building elements and within assemblies,
- precipitation into interior space, or
- leakage of air induced by air pressure difference due to wind loads.

This is to limit the probability of:

- structural damage due to snow loads on skylights or where windows have sloped or near-horizontal components, and
- condensation or water accumulation, which could lead to deterioration, which could lead to compromised structural integrity of assemblies acting as environmental separators.

This is to limit the probability of harm to persons.

~~[9.7.6.1.]~~ ~~9.7.6.1. ([3] 3) [F55,F61,F63-OS2.3]~~

~~Intent 1:~~

~~To limit the probability of uncontrolled air leakage between walls and windows or doors, and between ceilings and skylights, which could lead to condensation on the surface of building elements and within assemblies, which could lead to deterioration, which could lead to compromised structural integrity of assemblies acting as environmental separators, which could lead to harm to persons.~~

~~[9.7.6.1.]~~ ~~9.7.6.1. ([3] 3) [F55,F61,F63-OH1.1,OH1.2,OH1.3]~~

~~Intent 1:~~

~~To limit the probability of uncontrolled air leakage between walls and windows or doors, and between ceilings and skylights, which could lead to~~

- ~~condensation on the surface of building elements or within building elements,~~
- ~~excessive heat loss or gain,~~
- ~~precipitation ingress, or~~
- ~~ingress of insect and vermin.~~

~~This is to limit the probability of:~~

- ~~the inadequate control of temperatures of interior spaces, drafts, relative humidity, or water accumulation,~~
- ~~the generation of pollutants from biological growth or from materials that become unstable on wetting, or~~
- ~~deterioration, which could lead to compromised integrity of assemblies acting as environmental separators.~~

~~This is to limit the probability of:~~

- ~~negative effects on the air quality of indoor spaces,~~
- ~~the inadequate thermal comfort of persons, and~~
- ~~contact with moisture.~~

~~This is to limit the probability of harm to persons.~~

[9.27.2.1.] 9.27.2.1. ([1] 1) [F61-OS2.3]

[9.27.2.1.] 9.27.2.1. ([1] 1) [F61-OH1.1,OH1.2,OH1.3]

[9.27.2.1.] 9.27.2.1. ([2] 2) [F80,F81-OS2.3]

[9.27.2.1.] 9.27.2.1. ([2] 2) [F80,F81-OH1.1,OH1.2,OH1.3]

[9.27.2.2.] 9.27.2.2. ([1] 1) no attributions

[9.27.2.2.] 9.27.2.2. ([2] 2) no attributions

[9.27.2.2.] 9.27.2.2. ([3] 3) [F62-OS2.3]

[9.27.2.2.] 9.27.2.2. ([3] 3) [F62-OH1.1,OH1.2,OH1.3]

[9.27.2.2.] 9.27.2.2. ([4] 4) [F61,F62-OS2.3]

[9.27.2.2.] 9.27.2.2. ([4] 4) [F61,F62-OH1.1,OH1.2,OH1.3]

[9.27.2.2.] 9.27.2.2. ([5] 5) [F61,F62-OS2.3]

[9.27.2.2.] 9.27.2.2. ([5] 5) [F61,F62-OH1.1,OH1.2,OH1.3]

[9.27.2.2.] 9.27.2.2. ([6] 6) no attributions

[9.27.2.3.] 9.27.2.3. ([1] 1) [F61,F62-OS2.3]

Intent 1:

To limit the probability of:

- precipitation or meltwater ingress
    - through the first and second planes of protection,
    - at the rough opening sills of windows and doors, ~~and~~
    - at wall penetrations through the first and second planes of protection created by the installation of components and services, and
    - at interfaces with other wall assemblies, and
- an inadequate dissipation to the exterior of precipitation or meltwater that does bypass the first plane of protection.

This is to limit the probability of deterioration, which could lead to structural failure of exterior walls or elements supported or protected by exterior walls, which could lead to harm to persons.

[9.27.2.3.] 9.27.2.3. ([1] 1) [F61,F62-OH1.1,OH1.2,OH1.3]

[9.27.2.4.] 9.27.2.4. ([1] 1) [F61,F80-OS2.3]

[9.27.2.4.] 9.27.2.4. ([1] 1) [F61,F80-OH1.1,OH1.2,OH1.3]

[9.27.2.4.] 9.27.2.4. ([2] 2) [F61,F80-OS2.3]

[9.27.2.4.] 9.27.2.4. ([2] 2) [F61-OH1.1,OH1.2,OH1.3]

[9.27.3.1.] 9.27.3.1. ([1] 1) [F61,F62-OS2.3]

[9.27.3.1.] 9.27.3.1. ([1] 1) [F61,F62-OH1.1,OH1.2,OH1.3]

[9.27.3.1.] 9.27.3.1. ([2] 2) no attributions

[9.27.3.1.] 9.27.3.1. ([3] 3) [F61,F62-OS2.3]

Intent 1:

To limit the probability of:

- precipitation or meltwater ingress through the second plane of protection, ~~and~~
- at wall penetrations through the first and second planes of protection created by installation of components and services other than windows and doors, and
- an inadequate dissipation to the exterior of precipitation or meltwater that does bypass the first plane of protection.

This is to limit the probability of deterioration, which could lead to the structural failure of exterior walls or elements supported or protected by exterior walls, which could lead to harm to persons.

[9.27.3.1.] 9.27.3.1. ([3] 3) [F61,F62-OH1.1,OH1.2,OH1.3]

[9.27.3.1.] -- ([4] --) no attributions

Intent 1:

To direct Code users to Article 9.7.6.1. for requirements applicable to the installation of windows, doors and skylights.

[9.27.3.1.] -- ([5] --) no attributions

Intent 1:

To limit the probability of

- precipitation or meltwater ingress through the second plane of protection,
- negative effects on the air quality of indoor spaces,
- the inadequate thermal comfort of persons, or
- contact with moisture.

This is to limit the probability of harm to persons.

[9.27.3.1.] 9.27.3.1. ([6] 4) no attributions

[9.27.3.2.] 9.27.3.2. ([1] 1) [F20,F61,F62,F55-OS2.3]

[9.27.3.2.] 9.27.3.2. ([1] 1) [F20,F61,F62,F55-OH1.1,OH1.2,OH1.3]

[9.27.3.3.] 9.27.3.3. ([1] 1) [F61,F55-OS2.3]

[9.27.3.3.] 9.27.3.3. ([1] 1) [F61,F55-OH1.1,OH1.2,OH1.3]

[9.27.3.3.] 9.27.3.3. ([2] 2) [F61,F55-OS2.3]

[9.27.3.3.] 9.27.3.3. ([2] 2) [F61,F55-OH1.1,OH1.2,OH1.3]

[9.27.3.3.] 9.27.3.3. ([3] 3) [F61-OS2.3]

[9.27.3.3.] 9.27.3.3. ([3] 3) [F61-OH1.1,OH1.2,OH1.3]

[9.27.3.4.] **9.27.3.4. ([1] 1) no attributions**

[9.27.3.4.] **9.27.3.4. ([2] 2) [F61,F55-OS2.3]**

[9.27.3.4.] **9.27.3.4. ([2] 2) [F61,F55-OH1.1,OH1.2,OH1.3]**

[9.27.3.5.] **9.27.3.5. ([1] 1) [F61,F55-OS2.3]**

[9.27.3.5.] **9.27.3.5. ([1] 1) [F61,F55-OH1.1,OH1.2,OH1.3]**

[9.27.3.5.] **9.27.3.5. ([2] 2) [F61,F55-OS2.3]**

[9.27.3.5.] **9.27.3.5. ([2] 2) [F61,F55-OH1.1,OH1.2,OH1.3]**

[9.27.3.5.] **9.27.3.5. ([3] 3) no attributions**

[9.27.3.6.] **9.27.3.6. ([1] 1) no attributions**

[9.27.3.6.] **9.27.3.6. ([2] 2) [F20,F61,F55-OS2.3]**

[9.27.3.6.] **9.27.3.6. ([2] 2) [F20,F61,F55-OH1.1,OH1.2,OH1.3]**

[9.27.3.6.] **9.27.3.6. ([3] 3) [F61,F55-OS2.3]**

[9.27.3.6.] **9.27.3.6. ([3] 3) [F61,F55-OH1.1,OH1.2,OH1.3]**

[9.27.3.7.] **9.27.3.7. ([1] 1) [F61,F62,F80-OS2.3]**

[9.27.3.7.] **9.27.3.7. ([1] 1) [F61,F62,F80-OH1.1,OH1.2,OH1.3]**

[9.27.3.8.] **9.27.3.8. ([1] 1) ([a] a),([b] b),([c] c)([i] i) [F61-OS2.3]**

[9.27.3.8.] **9.27.3.8. ([1] 1) ([a] a),([b] b),([c] c)([i] i) [F61-OH1.1,OH1.2,OH1.3]**

[9.27.3.8.] **9.27.3.8. ([1] 1) ([c] c)([ii] ii) [F61,F62-OS2.3]**

[9.27.3.8.] **9.27.3.8. ([1] 1) ([c] c)([ii] ii) [F61,F62-OH1.1,OH1.2,OH1.3]**

[9.27.3.8.] **9.27.3.8. ([2] 2) ([a] a),([b] b)([ii] ii),([c] c)([i] i) [F61-OS2.3]** Applies to detailing of horizontal joints.

[9.27.3.8.] **9.27.3.8. ([2] 2) ([a] a),([b] b)([ii] ii),([c] c)([i] i) [F61-OH1.1,OH1.2,OH1.3]** Applies to detailing of horizontal joints.

[9.27.3.8.] **9.27.3.8. ([2] 2) ([b] b)([i] i),([c] c)([ii] ii) [F61,F62-OS2.3]** Applies to cladding installed outboard of a drained and vented air space.

[9.27.3.8.] **9.27.3.8. ([2] 2) ([b] b)([i] i),([c] c)([ii] ii) [F61,F62-OH1.1,OH1.2,OH1.3]** Applies to cladding installed outboard of a drained and vented air space.

[9.27.3.8.] **9.27.3.8. ([3] 3) [F61,F62-OS2.3]**

[9.27.3.8.] **9.27.3.8. ([3] 3) [F61,F62-OH1.1,OH1.2,OH1.3]**

[9.27.3.8.] **9.27.3.8. ([4] 4) [F61,F62-OS2.3]**

[9.27.3.8.] 9.27.3.8. ([4] 4) [F61,F62-OH1.1,OH1.2,OH1.3]

[9.27.3.8.] 9.27.3.8. ([5] 5) [F61,F62-OS2.3]

[9.27.3.8.] 9.27.3.8. ([5] 5) [F61,F62-OH1.1,OH1.2,OH1.3]

Submit a comment

Proposed Change 2026

Code Reference(s):	**NBC20 Div.B 9.36. (first printing)**
Subject:	Greenhouse Gas Emissions
Title:	Operational GHG Emissions: Tiered Prescriptive Requirements in the NBC
Description:	This proposed change introduces prescriptive requirements in the NBC to reduce operational GHG emissions.
Related Proposed Change(s):	PCF 1820, PCF 1843, PCF 1989, PCF 2003, PCF 2004, PCF 2016

This change could potentially affect the following topic areas:

- ☐ Division A
- ☐ Division C
- ☑ Building operations
- ☑ Small Buildings
- ☐ Fire Protection
- ☐ Accessibility
- ☐ Building Envelope
- ☑ Heating, Ventilating and Air Conditioning
- ☑ Division B
- ☑ Design and Construction
- ☑ Housing
- ☐ Large Buildings
- ☐ Occupant safety in use
- ☐ Structural Requirements
- ☑ Energy Efficiency
- ☐ Plumbing
- ☐ Construction and Demolition Sites

Problem

Approximately 13% of Canada's total greenhouse gas (GHG) emissions can be attributed to houses and buildings. This is primarily a result of using fossil fuels for space and water heating. Additionally, the combined impact of electricity consumption for cooling, lighting and running other appliances raises the overall contribution of buildings to GHG emissions to approximately 18%.[1] The 2020 GHG emissions from residential and building sectors are outlined in Table 1, which shows the sources and their percentage of electricity consumption.

Table 1. 2020 GHG Emissions in the Residential and Building Sectors(1)

Sector	Source	GHG Emissions, %
Residential	Space heating	64
	Water heating	20
	Running appliances	11
	Lighting	3
	Space cooling	2
Building	Space heating	65
	Running auxiliary equipment	12
	Lighting	10

	Water heating	7
	Space cooling	3
	Other	3

Note to Table 1:

(1)
https://oee.nrcan.gc.ca/corporate/statistics/neud/dpa/menus/trends/comprehensive_tables/list.cfm

There has been a growing recognition of the importance of addressing climate change and reducing GHG emissions from all sectors, including the built environment. However, the National Model Codes (the Codes) do not presently consider the type or quality of energy sources used by buildings and houses, nor do they address or regulate embodied and operational GHG emissions. As the industry moves towards higher energy efficiencies, the differences between energy sources must be examined because they contribute to GHG emissions differently. Historically, the Codes focused on design and construction requirements related to safety, structural integrity, accessibility and energy efficiency. With the latter, the emphasis was on reducing energy consumption during the construction and operational phases, but did not explicitly address operational GHG emissions. Furthermore, Canada is a large and diverse country with different climatic regions and building practices. This reality has led to regional variations in building codes and regulations, making it challenging to establish a unified approach to address operational GHG emissions at the national level.

The Codes currently contain an energy-efficiency objective and related requirements for the design and construction of new buildings and houses. In the 2020 editions of the National Energy Code of Canada for Buildings (NECB) and National Building Code of Canada (NBC), energy-efficiency tiers were introduced, containing measures that progressively increase energy efficiency and reduce the amount of energy needed to operate a building. These requirements play a crucial role in reducing GHG emissions by focusing on the amount of energy used. However, the Canadian Board for Harmonized Construction Codes (CBHCC) recognizes that energy savings alone will not lead to reducing emissions to meet the national goals stated in the Pan-Canadian Framework.

GHG emissions across Canadian provinces and territories exhibit substantial variations, influenced by factors such as population density, climate, energy sources and economic considerations.[2] Provinces and territories with larger populations, resource-based economies or heavy reliance on fossil fuels for electricity generation generally register higher emissions levels. This demonstrates a greatly varied energy landscape across Canada.

Ultimately, the goal is to reduce operational GHG emissions to zero or near zero across provinces and territories by 2050. Consequently, authorities having jurisdiction require a flexible framework to regulate GHG emissions due to building operation by using "levels" that move towards lower operational GHG emissions.

References

[1] https://www.canada.ca/en/services/environment/weather/climatechange/climate-plan/climate-plan-overview/healthy-environment-healthy-economy/annex-homes-buildings.html

[2] https://www.canada.ca/en/environment-climate-change/services/environmental-indicators/greenhouse-gas-emissions.html

Justification

Since 2010, the NBC and NECB have included requirements to prevent excessive use of energy. Though these requirements have improved the energy efficiency of new houses and buildings, the Codes remain silent on the type of energy used and the emissions associated with production, distribution and use. As a result, many new Code-compliant buildings contribute GHG emissions through their year-over-year operation. Reducing these emissions is an important step to enable action towards climate goals. Climate change is the biggest challenge facing humanity today, consequently, it is vital that the Codes address this gap to support Canada in reaching its emissions reduction target of 40% below 2005 levels by 2030 and net-zero emissions by 2050. Furthermore, achieving long-term climate goals requires early action on operational GHG emissions. Failure to address this pivotal issue could impede Canada's progress towards its emissions-reduction targets, jeopardizing the ability to effectively combat climate change and protect the future well-being of the country. The commitment to a sustainable future demands that these emissions be addressed comprehensively and urgently.

If these emissions are to be regulated, designers, builders and enforcement officials need a consistent and accurate means to convert expected energy use into expected GHG emissions. For years, governments and industry have relied on emissions factors (also referred to as emissions intensity factors) for this task. Emissions factors describe the amount of GHG emissions (in kg CO_2 equivalent) per unit of energy consumed, for instance, of electricity (in kWh), of natural gas (in m^3), and of heating oil (in L). Environment and Climate Change Canada compiles this data annually and publishes estimates as part of Canada’s national greenhouse gas inventory report. Emissions factors reflect the carbon intensity of different fuels, as well as regional differences in energy production and distribution. Data is generally published after two years; factors reflecting 2021 data were published in April 2023.

If Canada’s energy sector were unchanging, this data would suffice for building design and Code-administration purposes. But provincial, territorial and regional utilities are presently undergoing unprecedented transition. Electric utilities are shifting away from coal power generation, while gas utilities are experimenting with new technologies to lower emissions through use of hydrogen and renewable biogas sources. These changes are expected to occur rapidly; some provincial utilities expect to reduce electric emissions by 60% or more by 2030. In this environment, referencing the most recent (2021) emissions data currently available in the Codes could encourage the construction of buildings with higher-than-expected emissions. For this reason, this proposed change is based on the best available future-looking forecasts for utility emissions, averaged for the years 2031 to 2035. Emissions factor forecasts for electricity are sourced from Environment and Climate Change Canada’s most recent (2023) projections. While no similar projections are currently available for natural gas utilities, such projections are expected in future years and could be incorporated into the Codes at a later date.

PROPOSED CHANGE AS SUBMITTED TO WINTER 2024 PUBLIC REVIEW

[9.36.] 9.36. Energy Efficiency

[9.36.1.] 9.36.1. General

[9.36.1.1.] 9.36.1.1. Scope

[9.36.1.2.] 9.36.1.2. Definitions

[9.36.1.3.] 9.36.1.3. Compliance and Application

(See Note A-9.36.1.3.)

[1] 1) Except as provided in Sentences (3) to (7)-2025 ~~(2) to (6)~~, *buildings* shall comply with

[a] a) the prescriptive or trade-off requirements in Subsections 9.36.2. to 9.36.4.,

[b] b) the performance requirements in Subsection 9.36.5.,

[c] c) the tiered performance requirements in Subsection 9.36.7.,

[d] d) the tiered prescriptive requirements in Subsection 9.36.8., or

[e] e) the NECB.

[2] --) Except as provided in Sentence (6)-2025, *buildings* shall comply with

[a] --) the tiered operational GHG emissions prescriptive requirements in Subsection 9.36.12.-2025, or

[b] --) the NECB.

[3] 2) Subsections 9.36.2. to 9.36.4. apply to

[a] a) *buildings* of *residential occupancy* to which Part 9 applies,

[b] b) *buildings* containing *business and personal services*, *mercantile* or *low-hazard industrial occupancies* to which Part 9 applies whose combined total *floor area* does not exceed 300 m^2, excluding parking garages that serve *residential occupancies*, and

[c] c) *buildings* containing a mix of the *residential* and non-*residential occupancies* described in Clauses (a) and (b).

[4] 3) Subsection 9.36.5. and 9.36.7. apply only to

[a] a) houses with or without a *secondary suite*, and

[b] b) *buildings* containing only *dwelling units* and common spaces whose total *floor area* does not exceed 20% of the total *floor area* of the *building*.

(See Note A-9.36.1.3.(3).)

[5] 4) Subsections 9.36.8. and 9.36.12.-2025 ~~applies~~apply only to *buildings* of *residential occupancy* to which Part 9 applies.

[6] 5) *Buildings* containing non-*residential occupancies* whose combined total *floor area* exceeds 300 m^2 or *medium-hazard industrial occupancies* shall comply with the NECB.

[7] 6) *Buildings* or portions of *buildings* that are not required to be *conditioned spaces* are exempted from the requirements of this Section. (See Note A-9.36.1.3.(6).)

[9.36.2.] 9.36.2. Building Envelope

[9.36.2.1.] 9.36.2.1. Scope and Application

[9.36.2.2.] 9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies

[9.36.2.3.] 9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas

[9.36.2.4.] 9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies

[9.36.2.5.] 9.36.2.5. Continuity of Insulation

[9.36.2.6.] 9.36.2.6. Thermal Characteristics of Above-ground Opaque Building Assemblies

[9.36.2.7.] 9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights

[9.36.2.8.] 9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground

[9.36.2.9.] 9.36.2.9. Airtightness

[9.36.2.10.] 9.36.2.10. Construction of Air Barrier Details

[9.36.2.11.] 9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies

[9.36.3.] 9.36.3. HVAC Requirements

[9.36.3.1.] 9.36.3.1. Scope and Application

[9.36.3.2.] 9.36.3.2. Equipment and Ducts

[9.36.3.3.] 9.36.3.3. Air Intake and Outlet Dampers

[9.36.3.4.] 9.36.3.4. Piping for Heating and Cooling Systems

[9.36.3.5.] 9.36.3.5. Equipment for Heating and Air-conditioning Systems

[9.36.3.6.] 9.36.3.6. Temperature Controls

[9.36.3.7.] 9.36.3.7. Humidification

[9.36.3.8.] 9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub

[9.36.3.9.] 9.36.3.9. Heat Recovery from Ventilation Systems

[9.36.3.10.] 9.36.3.10. Equipment Efficiency

[9.36.3.11.] 9.36.3.11. Solar Thermal Systems

[9.36.4.] 9.36.4. Service Water Heating Systems

[9.36.6.4.] **9.36.6.4. Determination of Airtightness Level**

[9.36.7.] 9.36.7. Tiered Energy Performance Compliance: Performance Path

[9.36.7.1.] **9.36.7.1. Scope and Application**

[9.36.7.2.] **9.36.7.2. Compliance**

[9.36.7.3.] **9.36.7.3. Energy Performance Improvement Compliance Calculations**

[9.36.8.] 9.36.8. Tiered Energy Performance Compliance: Prescriptive Path

[9.36.8.1.] **9.36.8.1. Scope**

[9.36.8.2.] **9.36.8.2. Compliance**

[9.36.8.3.] **9.36.8.3. Definitions**

[9.36.8.4.] **9.36.8.4. Building Envelope – General**

[9.36.8.5.] **9.36.8.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies**

[9.36.8.6.] **9.36.8.6. Energy Conservation Measures for Fenestration and Doors**

[9.36.8.7.] **9.36.8.7. Energy Conservation Measures for Opaque Building Assemblies Below-Grade or in Contact with the Ground**

[9.36.8.8.] **9.36.8.8. Energy Conservation Measures Relating to Airtightness**

[9.36.8.9.] **9.36.8.9. Energy Conservation Measures for HVAC Systems**

[9.36.8.10.] **9.36.8.10. Energy Conservation Measures for Service Water Heating Equipment**

[9.36.8.11.] **9.36.8.11. Energy Conservation Points for Building Volume**

[9.36.9.] -- Reserved

[9.36.10.] -- Reserved

[9.36.11.] -- Reserved

[9.36.12.] -- Tiered Operational GHG Emissions Prescriptive Compliance

[9.36.12.1.] --- **Scope**

[1] --) This Subsection is concerned with GHG emissions, determined at the time of design, resulting from the supply and consumption of energy used by the *building* for

[a] --) systems used for heating, ventilating and air-conditioning, and

[b] --) systems used to heat service water.

[9.36.12.2.] --- Application

[1] --) This Subsection applies to the *buildings* described in Article 9.36.1.3.-2025.

[9.36.12.3.] --- Compliance

[1] --) The GHG emissions factor (GEF) for an energy source shall be determined in accordance with Article 9.36.11.6.-2025 (PCF 2004).

[2] --) The energy performance tier achieved by the *building* shall be determined in accordance with

[a] --) the tiered points-based prescriptive trade-off requirements in Subsection 9.36.8., or

[b] --) the tiered prescriptive requirements in Subsection 9.36.9.-2025 (PCF 1830).

[3] --) Compliance with this Subsection shall be achieved by designing and constructing *buildings* in accordance with one of the GHG emissions performance levels A to F specified in Article 9.36.12.4.

[9.36.12.4.] --- GHG Emissions Performance Levels

[1] --) Except as provided in Sentence (2), to comply with one of the GHG emissions performance levels A to F, the *building* shall be designed and constructed so that its energy performance meets or exceeds the minimum energy performance tier required for that performance level, as specified in Tables 9.36.12.4.-A to 9.36.12.4.-F for the energy sources or types of equipment used for space and service water heating and the applicable GHG emissions factor for electricity.

Table [9.36.12.4.-A]
Minimum Energy Performance Tier for GHG Emissions Performance Level A
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		**Electricity GEF, (1) g CO_2e/kWh**	**Minimum Energy Performance Tier (2)**
Space Heating	**Service Water Heating**		
Electricity	Electricity	GEF ≤ 25	2
		25 < GEF ≤ 100	4
Heat pump (3) with electric back-up (4)	Electric *storage-type service water heater* or heat pump water heater	GEF ≤ 25	1
		25 < GEF ≤ 100	3
Heat pump (3) with natural gas or propane back-up (4)	Electric *storage-type service water heater* or heat pump water heater	GEF ≤ 100	4
Cold-climate heat pump (3) (5) with electric back-up (4)	Heat pump water heater	GEF ≤ 25	1
		25 < GEF ≤ 100	2
		100 < GEF < 200	4

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Energy Performance Tier (2)
Space Heating	Service Water Heating		
	Electric *storage-type service water heater*	GEF ≤ 25	1
		25 < GEF ≤ 100	3
Other source with GEF < 25	Other source with GEF < 25	GEF < 200	2

Notes to Table [9.36.12.4.-A] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*.

(5) A cold-climate heat pump is an air-source heat pump that has a rated coefficient of performance not less than 1.8 at −15°C and a rated capacity at −15°C not less than 70% of the rated capacity at 8.3°C.

Table [9.36.12.4.-B]
Minimum Energy Performance Tier for GHG Emissions Performance Level B
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Energy Performance Tier (2)
Space Heating	Service Water Heating		
Electricity	Electricity	GEF ≤ 25	2
		25 < GEF ≤ 100	3
Heat pump (3) with electric back-up (4)	Electric *storage-type service water heater* or heat pump water heater	GEF ≤ 25	1
		25 < GEF ≤ 100	2
		100 < GEF < 200	4

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Energy Performance Tier (2)
Space Heating	Service Water Heating		
Heat pump (3) with natural gas or propane back-up (4)	Electric *storage-type service water heater* or heat pump water heater	GEF ≤ 100	3
		100 < GEF < 200	4
Other source with GEF < 25	Other source with GEF < 25	GEF < 200	2

Notes to Table [9.36.12.4.-B] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*.

Table [9.36.12.4.-C]
Minimum Energy Performance Tier for GHG Emissions Performance Level C
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Energy Performance Tier (2)
Space Heating	Service Water Heating		
Electricity	Electricity	GEF ≤ 100	2
		100 < GEF < 200	3
Heat pump (3) with electric back-up (4)	Electric *storage-type service water heater* or heat pump water heater	GEF ≤ 100	1
		100 < GEF < 200	2
Heat pump (3) with natural gas or propane back-up (4)	Electric *storage-type service water heater* or heat pump water heater	GEF ≤ 100	2
		100 < GEF < 200	3
Other source with GEF < 25	Other source with GEF < 25	GEF < 200	2

Notes to Table [9.36.12.4.-C] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*.

Table [9.36.12.4.-D]
Minimum Energy Performance Tier for GHG Emissions Performance Level D
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Energy Performance Tier (2)
Space Heating	Service Water Heating		
Natural gas	Natural gas	Any	4
	Electricity	GEF ≤ 100	1
Electricity	Electricity	GEF ≤ 100	2
		100 < GEF < 200	3
Heat pump (3) with electric, natural gas, or propane back-up, (4) or other source with GEF < 25	Electricity, including electric *storage-type service water heaters* and heat pump water heaters, or other source with GEF < 25	Any	1

Notes to Table [9.36.12.4.-D] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*.

Table [9.36.12.4.-E]
Minimum Energy Performance Tier for GHG Emission Performance Level E
Forming Part of Sentence 9.36.12.4.(1)

Energy Source		Minimum Energy Performance Tier (1)
Space Heating	Service Water Heating (2)	
Natural gas	Natural gas	3
Natural gas	Electricity or other source with GEF ≤ 25	1
Electricity, heat pump (3) with electric, natural gas, or propane back-up, (4) or other source with GEF ≤ 25	Natural gas, electricity or other source with GEF ≤ 25	1

Notes to Table [9.36.12.4.-E] :

(1) See Sentence 9.36.12.3.(2).

(2) GEF = GHG emissions factor in g CO_2e/kWh

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*.

Table [9.36.12.4.-F]
Minimum Energy Performance Tier for GHG Emission Performance Level F
Forming Part of Sentence 9.36.12.4.(1)

Energy Source		Minimum Energy Performance Tier (1)
Space Heating	Service Water Heating	
Natural gas, electricity, heat pump (2) with electric, natural gas, or propane back-up, (3) or other source with GEF (4) ≤ 25	Natural gas, electricity or other source with GEF (4) ≤ 25	1

Notes to Table [9.36.12.4.-F] :

(1) See Sentence 9.36.12.3.(2).

(2) Electrically operated.

(3) The heat pump must be sized to meet at least 60% of the heating load of the *building*.

(4) GEF = GHG emissions factor in g CO_2e/kWh

[2] --) Where the *building* cannot reasonably be connected to the provincial or territorial electrical power grid, the *building* shall be deemed to comply with GHG emissions performance level F.

REVISED PROPOSED CHANGE FOLLOWING WINTER 2024 PUBLIC REVIEW

[9.36.] 9.36. Energy Efficiency

[9.36.1.] 9.36.1. General

[9.36.1.1.] 9.36.1.1. Scope

[9.36.1.2.] 9.36.1.2. Definitions

[9.36.1.3.] 9.36.1.3. Compliance and Application

(See Note A-9.36.1.3.)

[1] 1) Except as provided in Sentences (3) to (7)-2025, *buildings* shall comply with

[a] a) the prescriptive or trade-off requirements in Subsections 9.36.2. to 9.36.4.,

[b] b) the performance requirements in Subsection 9.36.5.,

[c] c) the tiered performance requirements in Subsection 9.36.7.,

[d] d) the tiered prescriptive requirements in Subsection 9.36.8., or

[e] e) the NECB.

[2] --) Except as provided in Sentences (6) and (8)-2025, *buildings* shall comply with

[a] --) the tiered operational GHG emissions prescriptive requirements in Subsection 9.36.12.-2025, or

[b] --) the NECB.

[3] 2) Subsections 9.36.2. to 9.36.4. apply to

[a] a) *buildings* of *residential occupancy* to which Part 9 applies,

[b] b) *buildings* containing *business and personal services*, *mercantile* or *low-hazard industrial occupancies* to which Part 9 applies whose combined total *floor area* does not exceed 300 m^2, excluding parking garages that serve *residential occupancies*, and

[c] c) *buildings* containing a mix of the *residential* and non-*residential occupancies* described in Clauses (a) and (b).

[4] 3) Subsection 9.36.5. and 9.36.7. apply only to

[a] a) houses with or without a *secondary suite*, and

[b] b) *buildings* containing only *dwelling units* and common spaces whose total *floor*

area does not exceed 20% of the total *floor area* of the *building*.

(See Note A-9.36.1.3.(3).)

[5] 4) Subsections 9.36.8. and 9.36.12.-2025 apply only to *buildings* of *residential occupancy* to which Part 9 applies.

[6] 5) *Buildings* containing non-*residential occupancies* whose combined total *floor area* exceeds 300 m^2 or *medium-hazard industrial occupancies* shall comply with the NECB.

[7] 6) *Buildings* or portions of *buildings* that are not required to be *conditioned spaces* are exempted from the requirements of this Section. (See Note A-9.36.1.3.(6).)

[8] --) Extensions added to *existing buildings* that have a *floor area* not greater than 60% of the original gross *floor area* of the *existing building* are exempted from the requirements of Subsections 9.36.11. (PCF 2004) and 9.36.12.-2025.

[9.36.2.] 9.36.2. Building Envelope

[9.36.2.1.] 9.36.2.1. Scope and Application

[9.36.2.2.] 9.36.2.2. Determination of Thermal Characteristics of Materials, Components and Assemblies

[9.36.2.3.] 9.36.2.3. Calculation of Ceiling, Wall, Fenestration and Door Areas

[9.36.2.4.] 9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies

[9.36.2.5.] 9.36.2.5. Continuity of Insulation

[9.36.2.6.] 9.36.2.6. Thermal Characteristics of Above-ground Opaque Building Assemblies

[9.36.2.7.] 9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights

[9.36.2.8.] 9.36.2.8. Thermal Characteristics of Building Assemblies Below-Grade or in Contact with the Ground

[9.36.2.9.] 9.36.2.9. Airtightness

[9.36.2.10.] 9.36.2.10. Construction of Air Barrier Details

[9.36.2.11.] 9.36.2.11. Trade-off Options for Above-ground Building Envelope Components and Assemblies

[9.36.3.] 9.36.3. HVAC Requirements

[9.36.3.1.] 9.36.3.1. Scope and Application

[9.36.3.2.] 9.36.3.2. Equipment and Ducts

[9.36.3.3.] 9.36.3.3. Air Intake and Outlet Dampers

[9.36.3.4.] 9.36.3.4. Piping for Heating and Cooling Systems

[9.36.3.5.] 9.36.3.5. Equipment for Heating and Air-conditioning Systems

[9.36.3.6.] 9.36.3.6. Temperature Controls

[9.36.3.7.] 9.36.3.7. Humidification

[9.36.3.8.] 9.36.3.8. Heat Recovery from Dehumidification in Spaces with an Indoor Pool or Hot Tub

[9.36.3.9.] 9.36.3.9. Heat Recovery from Ventilation Systems

[9.36.3.10.] 9.36.3.10. Equipment Efficiency

[9.36.3.11.] 9.36.3.11. Solar Thermal Systems

[9.36.4.] 9.36.4. Service Water Heating Systems

[9.36.6.4.] 9.36.6.4. Determination of Airtightness Level

[9.36.7.] 9.36.7. Tiered Energy Performance Compliance: Performance Path

[9.36.7.1.] 9.36.7.1. Scope and Application

[9.36.7.2.] 9.36.7.2. Compliance

[9.36.7.3.] 9.36.7.3. Energy Performance Improvement Compliance Calculations

[9.36.8.] 9.36.8. Tiered Energy Performance Compliance: Prescriptive Path

[9.36.8.1.] 9.36.8.1. Scope

[9.36.8.2.] 9.36.8.2. Compliance

[9.36.8.3.] 9.36.8.3. Definitions

[9.36.8.4.] 9.36.8.4. Building Envelope – General

[9.36.8.5.] 9.36.8.5. Energy Conservation Measures for Above-Ground Opaque Building Assemblies

[9.36.8.6.] 9.36.8.6. Energy Conservation Measures for Fenestration and Doors

[9.36.8.7.] 9.36.8.7. Energy Conservation Measures for Opaque Building Assemblies Below-Grade or in Contact with the Ground

[9.36.8.8.] 9.36.8.8. Energy Conservation Measures Relating to Airtightness

[9.36.8.9.] 9.36.8.9. Energy Conservation Measures for HVAC Systems

[9.36.8.10.] 9.36.8.10. Energy Conservation Measures for Service Water Heating Equipment

[9.36.8.11.] 9.36.8.11. Energy Conservation Points for Building Volume

[9.36.9.] -- Reserved

[9.36.10.] -- Reserved

[9.36.11.] -- Reserved

[9.36.12.] -- Tiered Operational GHG Emissions Prescriptive Compliance

[9.36.12.1.] --- Scope

[9.36.12.2.] --- Application

[9.36.12.3.] --- Compliance

[1] --) The GHG emissions factor (GEF) for an energy source shall be determined in

accordance with Article 9.36.11.6.-2025 (PCF 2004).

[2] --) The total number of energy conservation points ~~performance tier~~ achieved by the *building* shall be determined in accordance with

[a] --) the tiered points-based prescriptive trade-off requirements in Subsection 9.36.8., or

[b] --) the tiered prescriptive requirements in ~~Subsection 9.36.9.-2025 (PCF 1830).~~

[i] --) Subsection 9.36.9.-2025 (PCF 2042), where Tier 1 is assigned 0 energy conservation points,

[ii] --) Reserved,

[iii] --) Reserved,

[iv] --) Reserved, or

[v] --) Subsection 9.36.13.-2025 (PCF 1830), where Tier 5 is assigned 75 energy conservation points.

[3] --) Compliance with this Subsection shall be achieved by designing and constructing *buildings* in accordance with one of the GHG emissions performance levels A to F specified in Article 9.36.12.4.

[9.36.12.4.] --- GHG Emissions Performance Levels

[1] --) Except as provided in Sentence (2), to comply with one of the GHG emissions performance levels A to F, the *building* shall be designed and constructed so that its total number of energy ~~performance~~conservation points, as determined in accordance with Sentence 9.36.12.3.(2), meets or exceeds the minimum number of energy conservation points~~performance tier~~ required for that GHG emissions performance level, as specified in Tables 9.36.12.4.-A to 9.36.12.4.-F for the energy sources or types of equipment used for space and service water heating and the applicable GHG emissions factor for electricity.

Table [9.36.12.4.-A]
Minimum Number of Energy Conservation Points~~Performance Tier~~ for GHG Emissions Performance Level A
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		**Electricity GEF, (1) g CO_2e/kWh**	**Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)**
Space Heating	**Service Water Heating**		
Electricity	~~Electricity~~Heat pump water heater	GEF ≤ 25	~~2~~ 10
		25 < GEF ≤ 100	~~4~~ 70
	Electric tankless or *storage-type service water heater*	GEF ≤ 25	15
Heat pump (3) with electric ~~back-up~~supplemental system (4)	Electric tankless or *storage-type service water heater* or heat pump water heater	GEF ≤ 25	~~1~~ 0
		25 < GEF ≤ 100	~~3~~ 65
~~Heat pump (3) with natural gas or propane back-up (4)~~	~~Electric *storage-type service water heater* or heat pump water heater~~	~~GEF ≤ 100~~	~~4~~

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
~~Cold-climate heat pump (3) (5) with electric back-up (4)~~	~~Heat pump water heater~~	~~GEF ≤ 25~~	~~1~~
		~~25 < GEF ≤ 100~~	~~2~~
		~~100 < GEF < 200~~	~~4~~
	~~Electric *storage-type service water heater*~~	~~GEF ≤ 25~~	~~1~~
		~~25 < GEF ≤ 100~~	~~3~~
Other source with GEF ~~<~~≤ 25	Other source with GEF ~~<~~≤ 25	GEF < 200	~~2~~ 10

Notes to Table [9.36.12.4.-A] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*; the remainder of the heating load must be met by the supplemental system.

(5) ~~A cold-climate heat pump is an air-source heat pump that has a rated coefficient of performance not less than 1.8 at −15°C and a rated capacity at −15°C not less than 70% of the rated capacity at 8.3°C.~~

Table [9.36.12.4.-B]
Minimum Number of Energy Conservation Points ~~Performance Tier~~ for GHG Emissions Performance Level B
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
Electricity	~~Electricity~~Heat pump water heater	GEF ≤ 25	~~2~~ 10
		25 < GEF ≤ 100	~~3~~ 35
	Electric tankless or *storage-type service water heater*	GEF ≤ 25	15
		25 < GEF ≤ 100	35

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
Heat pump (3) with electric ~~back-up~~supplemental system (4)	Heat pump water heater	GEF ≤ 25	0
		25 < GEF ≤ 100	10
		100 < GEF < 200	65
	Electric tankless or *storage-type service water heater* ~~or heat pump water heater~~	GEF ≤ 25	~~1~~ 0
		25 < GEF ≤ 100	~~2~~ 20
		100 < GEF < 200	~~4~~ 65
~~Heat pump (3) with natural gas or propane back-up (4)~~	~~Electric *storage-type service water heater* or heat pump water heater~~	~~GEF ≤ 100~~	~~3~~
		~~100 < GEF < 200~~	~~4~~
Other source with GEF ~~<~~≤ 25	Other source with GEF ~~<~~≤ 25	GEF < 200	~~2~~ 10

Notes to Table [9.36.12.4.-B] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*; the remainder of the heating load must be met by the supplemental system.

Table [9.36.12.4.-C]
Minimum Number of Energy Conservation Points ~~Performance Tier~~ for GHG Emissions Performance Level C
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
Electricity	~~Electricity~~Heat pump water heater	GEF ≤ ~~100~~25	~~2~~ 10
		~~100~~25 < GEF < 200	~~3~~ 35
	Electric tankless or *storage-type service water heater*	GEF ≤ 25	15
		25 < GEF ≤ 100	35
		100 < GEF < 200	40

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
Heat pump (3) with electric ~~back-up~~supplemental system (4)	Heat pump water heater	GEF ≤ 25	0
		25 < GEF ≤ 100	10
		100 < GEF < 200	15
	Electric tankless or *storage-type service water heater* ~~or heat pump water heater~~	GEF ≤ 25	0
		~~GEF ≤ 100~~	~~1~~
		~~100~~25 < GEF < 200	~~2~~ 15
Heat pump (3) with ~~natural~~utility gas or propane ~~back-up~~supplemental system (4)	Electric, utility gas or propane tankless or *storage-type service water heater* or heat pump water heater	~~GEF ≤ 100~~	~~2~~
		~~100 <~~ GEF < 200	~~3~~ 35
Other source with GEF ~~<~~≤ 25	Other source with GEF ~~<~~≤ 25	GEF < 200	~~2~~ 10

Notes to Table [9.36.12.4.-C] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*; the remainder of the heating load must be met by the supplemental system.

Table [9.36.12.4.-D]
Minimum Number of Energy Conservation Points~~Performance Tier~~ for GHG Emissions Performance Level D
Forming Part of Sentence 9.36.12.4.(1)

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
~~Natural~~Utility gas or propane	~~Natural~~Utility gas or propane	Any	~~4~~ 35
	Electricity	GEF ≤ 100	~~1~~ 10
Electricity	Electricity	~~GEF ≤ 100~~	~~2~~

Energy Source or Type of Equipment		Electricity GEF, (1) g CO_2e/kWh	Minimum Number of Energy Conservation Points~~Performance Tier~~ (2)
Space Heating	**Service Water Heating**		
		~~100 <~ GEF < 200	~~3~~ 10
Heat pump (3) with electric supplemental system (4)	Electric tankless or *storage-type service water heater* or heat pump water heater	GEF < 200	0
Heat pump (3) with utility gas or propane supplemental system (4)	Electric, utility gas or propane tankless or *storage-type service water heater* or heat pump water heater	GEF < 200	10
~~Heat pump (5) with electric, natural gas, or propane back-up, (6) or o~~Other source with GEF ~~<~~≤ 25	~~Electricity, including electric storage-type service water heaters and heat pump water heaters, or o~~Other source with GEF ~~<~~≤ 25	~~Any~~GEF < 200	~~1~~ 10

Notes to Table [9.36.12.4.-D] :

(1) GEF = GHG emissions factor

(2) See Sentence 9.36.12.3.(2).

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*; the remainder of the heating load must be met by the supplemental system.

(5) ~~Electrically operated.~~

(6) ~~The heat pump must be sized to meet at least 60% of the heating load of the *building*.~~

Table [9.36.12.4.-E]
Minimum Number of Energy Conservation Points~~Performance Tier~~ for GHG Emission Performance Level E
Forming Part of Sentence 9.36.12.4.(1)

Energy Source		Minimum Number of Energy Conservation Points~~Performance Tier~~ (1)
Space Heating	**Service Water Heating (2)**	
~~Natural~~Utility gas ~~Natural gas~~ or propane	~~Natural~~Utility gas or propane	~~3~~ 15
	Electricity or other source with GEF ≤ 25	~~1~~ 0
Electricity, heat pump (3) with electric, ~~natural~~utility gas, or propane ~~back-up~~supplemental system, (4) or other source with GEF ≤ 25	~~Natural~~Utility gas, electricity, propane, or other source with GEF ≤ 25	~~1~~ 0

Notes to Table [9.36.12.4.-E] :

(1) See Sentence 9.36.12.3.(2).

(2) GEF = GHG emissions factor in g CO_2e/kWh

(3) Electrically operated.

(4) The heat pump must be sized to meet at least 60% of the heating load of the *building*; the remainder of the heating load must be met by the supplemental system.

Table [9.36.12.4.-F]
Minimum Number of Energy Conservation PointsPerformance Tier for GHG Emissions
Performance Level F
Forming Part of Sentence 9.36.12.4.(1)

Energy Source		Minimum Number of Energy Conservation PointsPerformance Tier (1)
Space Heating	**Service Water Heating**	
Utility gas	Utility gas, electricity, propane, or other source with GEF ≤ 25	0
Propane	Propane	10
	Electricity or other source with GEF ≤ 25	0
Natural gas, eElectricity, heat pump (2) with electric, naturalutility gas, or propane back-upsupplemental system, (3) or other source with GEF (4) ≤ 25	NaturalUtility gas, electricity, propane, or other source with GEF (4) ≤ 25	1 0

Notes to Table [9.36.12.4.-F] :

(1) See Sentence 9.36.12.3.(2).

(2) Electrically operated.

(3) The heat pump must be sized to meet at least 60% of the heating load of the *building*; the remainder of the heating load must be met by the supplemental system.

(4) GEF = GHG emissions factor in g CO_2e/kWh

[2] --) Where the *building* cannot reasonably be connected to the provincial or territorial electrical power grid, the *building* shall be exempted from compliance with the requirements of this Subsection.deemed to comply with GHG emissions performance level F.

Impact analysis

This section describes the approach that was adopted for performing an impact analysis of the tiered prescriptive operational GHG emissions requirements for the NBC. The analysis is in accordance with the methodologies developed PCF 2004 to propose operational GHG emissions requirements in Section 9.36. The impact analysis was performed using simulations that use reference emissions factor values of 235 g CO_2e/kWh and 260 g CO_2e/kWh for determining the GHG emissions target for space heating and service water heating, respectively. The GHG emissions of all non-heating regulated loads were calculated taking into account the emissions factor of electricity for each province or territory (average projected 2031–2035 values). PCFs 2004 and 2026 were developed based on average emissions factors, not marginal emissions factors.

The introduction of tiered operational GHG emissions levels would provide the provinces and territories with the option to adopt the operational GHG emissions level that is the most suitable for their needs. Even though energy performance modeling is commonly used in the industry currently, in order to provide simplicity in achieving compliance with the proposed operational GHG emissions levels, in addition to the performance path, Section 9.36. would provide a prescriptive compliance path as well.

The 2020 edition of the NBC introduced energy performance tiers for buildings and houses, with increasing levels of energy performance improvement. The amount of annual operational GHG emissions is directly correlated with the annual energy use of the house. In order to provide simplicity for Code users in achieving both energy efficiency and operational GHG emissions reduction, the following correlation between energy tiers and operational GHG emissions levels was proposed.

Table 1 presents the operational GHG emissions performance levels that can be achieved through the implementation of energy conservation measures, using utility gas as the energy source for space heating and service water heating in the proposed house.

Table 1. Operational GHG Emissions Performance Levels using Utility Gas as the Energy Source for Space Heating and Service Water Heating

Minimum Energy Conservation Points	Operational GHG Emissions Performance Levels	Operational GHG Emissions Percentage Improvement
0	F	≥ 0%
15	E	≥ 10%
35	D	≥ 25%

According to Table 1, using utility gas as the energy source for the proposed house, at leas 80% of the archetypes complying with the minimum requirements of the NBC will be able to achieve level F. If additional energy efficiency measures are implemented, and the minimum number of energy conservation points achieved is 15, at least 80% of the archetypes will be able to achieve operational GHG emissions level E. Improving further the energy efficiency of the proposed house, and achieving 35 minimum energy conservation points, will result in at least 80% of the archetypes meeting operational GHG emissions level D.

The scenario using electricity as the energy source was investigated as well. Depending on the emissions factor for electricity for each province or territory (2031–2035 values), there is a significant variability between provinces and territories, as such the electric grids were divided into groups based on the emissions factor value (high, moderate or low), as presented in Table 2.

Table 2. Classification of Provincial and Territorial Electric Grids.

Province or Territory	Electric Grid GHG Emissions(1)	Electric Grid GHG Emissions Factor, g CO_2e/kWh
British Columbia	Low	1.32
Alberta	High	181.86
Saskatchewan	High	146.60
Manitoba	Low	0.00
Ontario	Moderate	57.90
Quebec	Low	0.38
New Brunswick	Moderate	77.88

Nova Scotia	High	161.64
Prince Edward Island	Moderate	80.42
Newfoundland and Labrador	Low	11.08
Northwest Territories	Low	6.82
Yukon	Low	25.00
Nunavut	High	465.16

Note to Table 2:

(1) High: emissions factor greater than 100 g CO_2e/kWh

Moderate: emissions factor greater than 25 g CO_2e/kWh and less than or equal to 100 g CO_2e/kWh

Low: emissions factor less than or equal to 25 g CO_2e/kWh

Table 3. GHG Emissions Performance Levels for Electric Space Heating and Service Water Heating

Grid GHG Emissions Factors	Minimum Energy Conservation Points	Operational GHG Emissions Performance Levels
Low (less than or equal to 25 g CO_2e/kWh)	10	Level A
Moderate (more than 25 g CO_2e/kWh and less than or equal to 100 g CO_2e/kWh)	70	Level A
	35	Level B
	10	Level C
High (more than 100 g CO_2e/kWh and less than or equal to 200 g CO_2e/kWh)	40	Level C
	10	Level D

Note to Table 3: Nunavut with an electricity emissions factor of 465.16 g CO_2e/kWh (significantly higher than the average emission factor for utility gas) was excluded from the analysis.

According to Table 3, a noticeable improvement in operational GHG emissions performance levels can be observed across all provinces/territories at higher energy performance tiers. For example, achieving Energy Performance Tier 2 would result in operational GHG emissions Level A for grids with low emissions factors, Level C for grids with moderate emissions factors, and Level D for grids with high emissions factors.

Table 4 presents the operational GHG emissions levels for the scenario of the proposed house using utility gas for space heating and electricity for service water heating.

Table 4. GHG Emission Performance Levels for Utility Gas Space Heating and Electric Service Water Heating

Grid GHG Emissions Factor	GHG Emission Performance Level
Low (less than or equal to 25 g CO_2e/kWh)	Level D
Moderate (more than 25 g CO_2e/kWh and less than or equal to 100 g CO_2e/kWh)	Level D
High (more than 100 g CO_2e/kWh)	Level E

As Table 4 illustrates, replacing utility gas with electricity for service water heating results in better operational GHG emissions levels without implementing any energy-efficiency measures. The provinces and territories with low and moderate emissions grids are able to achieve Level D (compared with Level F when utility gas is the energy source), while the provinces and territories with high emissions grids can achieve Level E (compared with Level F when utility gas is the energy source).

Installing an air-source heat pump in the proposed house contributes to significant energy savings. Code users who choose to install a high-efficiency air-source heat pump would benefit from the additional energy savings provided by the equipment and, at the same time, from the reduction of operational GHG emissions. Table 5 presents the operational GHG emissions levels that can be achieved across provinces and territories when installing an air-source heat pump for space heating and a heat pump water heater for service water.

Table 5. GHG Emissions Performance Levels for Electrically Operated, Air-Source Heat Pump for Space Heating and Heat Pump Service Water Heating

Province or Territory	Grid GHG Emissions	GHG Emissions Performance Level
British Columbia	Low	Level A
Alberta	High	Level D
Saskatchewan	High	Level C
Manitoba	Low	Level A
Ontario	Moderate	Level A
Quebec	Low	Level A
New Brunswick	Moderate	Level B
Nova Scotia	High	Level C
Prince Edward Island	Moderate	Level B
Newfoundland and Labrador	Low	Level A
Northwest Territories	Low	Level A
Yukon	Low	Level A

According to Table 5, when using an air-source heat pump for space heating and a heat pump for service water heating, the provinces and territories having low emissions grids would be able to achieve operational GHG emissions Level A. The provinces and territories having moderate emissions grids would be able to achieve Level A or B, while the ones having high emissions grids would achieve Level A, D or C, depending on climate and grid emissions factor.

For some locations, a cold climate air-source heat pump would be more appropriate than a regular air-source heat pump. Table 6 presents the operational GHG emissions levels that could be achieved by each province or territory where the air-source heat pump is replaced with a cold climate air-source heat pump.

Table 6. GHG Emissions Performance Levels for Electrically Operated, Cold Climate Air-Source Heat Pump for Space Heating and Heat Pump Service Water Heating

Province or Territory	Grid GHG Emissions	GHG Emissions Performance Level
British Columbia	Low	Level A
Alberta	High	Level D
Saskatchewan	High	Level C
Manitoba	Low	Level A
Ontario	Moderate	Level A
Quebec	Low	Level A
New Brunswick	Moderate	Level B
Nova Scotia	High	Level C
Prince Edward Island	Moderate	Level B
Newfoundland and Labrador	Low	Level A
Northwest Territories	Low	Level A
Yukon	Low	Level A

As in the previous scenario, when using a cold climate air-source heat pump for space heating and a heat pump for service water heating, the provinces and territories having low emissions grids are able to achieve operational GHG emissions Level A. The provinces and territories having moderate emissions grids are able to achieve Level A or B, while the ones having high emissions grids achieve Level A, C or D, depending on climate and grid emissions factor.

From the results presented in Tables 1 to 6, it is evident that the majority of house archetypes are able to meet the minimum level of operational GHG emissions without implementing energy-efficiency measures (Tier 1 in Section 9.36.). As Table 3 illustrates, when electricity is the energy source, depending on the emissions factor of the grid, some house archetypes compliant with Tier 1 are able to reach better operational GHG emissions levels. However, in some cases, changing the energy source is not enough to achieve better operational GHG emissions levels. The prescriptive trade-off path in Subsection 9.36.8. allows Code users to obtain energy conservation points associated with the energy savings and implicitly with operational GHG emissions reduction from a variety of measures, such as increasing the insulation of exterior walls, improving the energy performance of windows or installing mechanical equipment exceeding NBC minimum requirements (Energy Performance Tier 1 and operational GHG emissions Level F). All of these energy performance/operational GHG emissions conservation measures would have incremental costs associated with their implementation.

Table 7 presents the average cost of equipment for space heating and service water heating to meet or better the minimum performance requirements in Section 9.36. However, since the cost associated with reaching a specific GHG emissions performance level cannot be generalized for all provinces and territories, the incremental cost must be evaluated in more depth, individually case by case.

Table 7. Cost of Energy-Efficient Mechanical Equipment for an Average House

Type	Equipment	Cost(1), $
Space heating/cooling	Gas furnace	4 750(2)
	Electric baseboard heater	6 000(3)
	Electric furnace	3 400(4)
	Air-source heat pump	15 500(5)
	Cold climate air-source heat pump	24 000(6)
Service water heating	Storage tank (natural gas)	2 500(7)
	Storage tank (electric)	1 500(8)
	Heat pump water heater	4 000(8)

Notes to Table 7:

(1) The cost:

- takes into account the equipment, materials and installation,

- of the heating equipment is based on the sizing for an average house (floor area approx. 200 m^2),
- of the service water heating is based on the load for a family of four members, and
- does not take into account inter-province/territory variability. For some locations (especially in the North), the cost may be higher.

(2) Homedepot, Gas Furnace Prices (including Installation), https://www.homedepot.ca/en/home/ideas-how-to/heating-and-cooling/cost-install-gas-furnace.html

(3) HomeAdvisor, How Much Does an Electric Baseboard Heater Cost?, https://www.homeadvisor.com/cost/heating-and-cooling/install-an-electric-baseboard-or-wall-heater/

(4) Modernize Home Services, 2023 Buying Guide: Electric Furnace Costs, https://modernize.com/hvac/heating-repair-installation/furnace/electric

(5) 2 Ton, 24000 BTU, HVACTrust, https://hvactrust.ca/

(6) 24000 BTU, 1Click Heating&Cooling, https://1clickheat.com/

(7) Enercare, 2023 Water Heater Buyer's Guide for Homeowners, https://www.enercare.ca/water/water-heating/buyers-guide-to-water-heaters

(8) Homedepot, Tank Electric Water Heaters, https://www.homedepot.ca/en/home/categories/building-materials/plumbing/water-heaters/tank-water-heaters/tank-electric-water-heaters.html

Building envelope measures exceeding the minimum energy performance for tier 1 result in energy conservation points that allow the Code user to obtain credit for the energy savings associated with the building envelope measures adopted. The energy savings associated with envelope measures result in a reduction of operational GHG emissions of the house as well.

A further estimation of the costs associated with building envelope improvement will be presented. RSMeans data for residential costs was used to estimate the incremental costs associated with the improvement of exterior wall insulation. A range of estimated values was calculated to account for the inter-province/territory variability (location factors provided by RSMeans).

Table 8. Incremental Costs Associated with the Improvement of Insulation of Above-Ground Walls

Effective RSI Value, $(m^2 \times K)/W$	Energy Savings, %	Incremental Cost of Insulation(1), $/$m^2$	Incremental Cost for a 200 m^2 House, $
2.97	2.0	14.10–19.5	3 384–4 680
3.08	2.3	14.30–19.90	3 432–4 776
3.69	4.3–6.3	16.10–23.70	3 864–5 688
3.85	5.0–6.9	17.40–23.70	4 176–5 688
3.96	0.6–7.5	17.90–24.50	4 296–5 880
4.29	2.3–8.9	22.80–31.20	5 472–7 488
4.40	2.7–9.2	24.80–33.90	5 952–8 136
4.57	3.4–9.8	27.10–36.80	6 504–8 832
4.73	4.1–10.4	27.20–37.00	6 528–8 880
4.84	4.5–10.7	27.3–37.20	6 552–8 928
5.01	5.0–11.1	27.80–37.90	6 672–9 096
5.45	6.4–12.2	28.50–39.30	6 840–9 432

Source: RSMeans 2023 – Residential costs.

Note to Table 8:

(1) Insulation type: non-rigid insulation (batt), fibre-glass, kraft-faced.

As Table 8 illustrates, the energy savings and the incremental costs increase with an increase in the effective RSI value of the exterior wall. In Section 9.36., no-cost measures, such as a decrease in the volume of the house, can result in between 1 and 10 energy-saving points, depending on the volume reduction.

Section 9.36. provides energy conservation measures for fenestration as well. Table 9 presents the costs associated with window performance improvement.

Table 9. Costs Associated with Window Performance Improvement

U-Value, W/(m^2×K)	Energy Savings, %	Cost, $/m^2	Incremental Cost, $/m^2	Incremental Cost for a 200 m^2 House with 20% WWR(1), $
1.84	–	410	–	–
1.61	1.8–1.9	450	40	1 920
1.44	1.6–3.8	480	70	2 800
1.22	3.2–7.0	510	100	4 800

Note to Table 9:

(1) WWR = window-to-wall ratio

According to Table 9, the incremental costs associated with performance improvement of windows increase with a decreasing U-value (or increasing RSI value) of the window. The percentage energy savings depends on the U-value of the window and the climate zone.

Taking into account the costs presented in Tables 6 to 9, an incremental cost can be calculated for various combinations of building envelope and mechanical system improvements (i.e., "packages"). It is assumed that when the energy source is either natural gas or electricity and the properties of the building envelope meet tier 1 in Section 9.36. the incremental cost is zero. Table 10 presents the incremental costs for certain packages resulting in decreased energy use and, implicitly, decreased annual GHG emissions.

Table 10. Incremental costs associated with the adoption of energy performance/GHG emissions reduction measures

Energy Performance/GHG Emissions Conservation Measure	Incremental Cost, $
Tier 1 building envelope + Tier 1 natural gas space heating and service water heating systems	0
Tier 1 building envelope + Tier 1 electric space heating and service water heating systems	0
Tier 1 building envelope + Tier 1 natural gas space heating system, and electric service water heating system	0
Tier 1 building envelope + electrically operated, air-source heat pump and heat pump water heater	12 250
Tier 1 building envelope + electrically operated, cold climate air-source heat pump and heat pump water heater	20 750
Tier 2 building envelope(1) + Tier 1 natural gas space heating and service water heating systems	8 488
Tier 2 building envelope(1) + electrically operated, air-source heat pump and heat pump water heater	20 738

Note to Table 10:

(1) Incremental cost varies with climate zone and house size. The example assumes climate zone 4 and floor area of approximately 200 m^2.

As Table 10 illustrates, the incremental cost depends on the energy conservation measures adopted to reach a specific energy performance tier/GHG emissions level. Section 9.36 provides detailed prescriptive measures for achieving Energy Performance Tier 2. The proposed changes for the

2025 edition of NBC provide Code users with prescriptive measures for achieving energy performance tiers beyond tier 2. According to Tables 1 to 6, the GHG emissions level achieved depends on the energy source and value of electricity grid emissions factor of each province or territory. Together with the tiered energy prescriptive path, the operational GHG emissions prescriptive path would provide an acceptable means of achieving the goal of reducing energy consumption and GHG emissions.

Enforcement implications

Enforcement of the technical requirements to minimize the excessive emission of operational GHG emissions would require additional effort by authorities having jurisdiction.

A consistent set of technical requirements to minimize the excessive emission of operational GHG emissions across Canada would contribute to meeting provincial, territorial and federal GHG emissions reduction targets and climate action plans, including Canada’s goal to reduce total national GHG emissions to 40% to 45% below 2005 levels by 2030 and to reach net-zero by 2050.

Who is affected

Designers, engineers, architects, builders, and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[9.36.1.1.] 9.36.1.1. ([1] 1) no attributions

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[9.36.2.7.] 9.36.2.7. ([8] 8) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([1] 1) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([2] 2) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([3] 3) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([4] 4) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([5] 5) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([6] 6) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([7] 7) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([8] 8) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([9] 9) [F92-OE1.1]

[9.36.2.8.] 9.36.2.8. ([10] 10) no attributions

[9.36.2.9.] 9.36.2.9. ([1] 1) [F90-OE1.1]

[9.36.2.9.] 9.36.2.9. ([2] 2) [F90-OE1.1]

[9.36.2.9.] 9.36.2.9. ([3] 3) [F90-OE1.1]

[9.36.2.9.] 9.36.2.9. ([4] 4) [F90-OE1.1]

[9.36.2.9.] 9.36.2.9. ([5] 5) [F90-OE1.1]

[9.36.2.9.] 9.36.2.9. ([6] 6) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([1] 1) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([2] 2) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([3] 3) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([4] 4) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([5] 5) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([6] 6) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([7] 7) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.2.10.] 9.36.2.10. ([8] 8) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([9] 9) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([10] 10) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([11] 11) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([12] 12) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([13] 13) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([14] 14) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([15] 15) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([16] 16) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([17] 17) [F90-OE1.1]

[9.36.2.10.] 9.36.2.10. ([18] 18) [F90-OE1.1]

[9.36.2.11.] 9.36.2.11. ([1] 1) no attributions

[9.36.2.11.] 9.36.2.11. ([2] 2) [F92-OE1.1]

[9.36.2.11.] 9.36.2.11. ([2] 2) no attributions

[9.36.2.11.] 9.36.2.11. ([3] 3) [F92-OE1.1]

[9.36.2.11.] 9.36.2.11. ([3] 3) no attributions

[9.36.2.11.] 9.36.2.11. ([4] 4) [F92-OE1.1]

[9.36.2.11.] 9.36.2.11. ([5] 5) [F92-OE1.1]

[9.36.2.11.] 9.36.2.11. ([6] 6) [F92-OE1.1]

[9.36.2.11.] 9.36.2.11. ([7] 7) [F92-OE1.1]

[9.36.2.11.] 9.36.2.11. ([8] 8) [F92-OE1.1]

[9.36.3.1.] 9.36.3.1. ([1] 1) no attributions

[9.36.3.1.] 9.36.3.1. ([2] 2) no attributions

[9.36.3.2.] 9.36.3.2. ([1] 1) [F95-OE1.1]

[9.36.3.2.] 9.36.3.2. ([2] 2) no attributions

[9.36.3.2.] 9.36.3.2. ([3] 3) [F91,F93-OE1.1]

[9.36.3.2.] 9.36.3.2. ([4] 4) [F91,F93-OE1.1]

[9.36.3.2.] 9.36.3.2. ([5] 5) no attributions

[9.36.3.2.] 9.36.3.2. ([5] 5) [F91,F93-OE1.1]

[9.36.3.3.] 9.36.3.3. ([1] 1) [F91,F95-OE1.1]

[9.36.3.3.] 9.36.3.3. ([2] 2) [F91,F95-OE1.1]

[9.36.3.3.] 9.36.3.3. ([3] 3) no attributions

[9.36.3.3.] 9.36.3.3. ([4] 4) no attributions

[9.36.3.4.] 9.36.3.4. ([1] 1) no attributions

[9.36.3.4.] 9.36.3.4. ([2] 2) [F93-OE1.1]

[9.36.3.5.] 9.36.3.5. ([1] 1) [F98-OE1.1]

[9.36.3.6.] 9.36.3.6. ([1] 1) [F95-OE1.1]

[9.36.3.6.] 9.36.3.6. ([1] 1) no attributions

[9.36.3.6.] 9.36.3.6. ([2] 2) [F95,F98-OE1.1]

[9.36.3.6.] 9.36.3.6. ([3] 3) [F95-OE1.1]

[9.36.3.6.] 9.36.3.6. ([4] 4) [F95-OE1.1]

[9.36.3.6.] 9.36.3.6. ([5] 5) [F95-OE1.1]

[9.36.3.6.] 9.36.3.6. ([6] 6) [F95-OE1.1]

[9.36.3.6.] 9.36.3.6. ([7] 7) [F95-OE1.1]

[9.36.3.7.] 9.36.3.7. ([1] 1) [F95-OE1.1]

[9.36.3.8.] 9.36.3.8. ([1] 1) [F95,F100-OE1.1]

[9.36.3.8.] 9.36.3.8. ([2] 2) no attributions

[9.36.3.8.] 9.36.3.8. ([3] 3) no attributions

[9.36.3.8.] 9.36.3.8. ([4] 4) [F98,F100-OE1.1]

[9.36.3.8.] 9.36.3.8. ([5] 5) [F98,F100-OE1.1]

[9.36.3.9.] 9.36.3.9. ([1] 1) no attributions

[9.36.3.9.] 9.36.3.9. ([2] 2) [F95,F100-OE1.1]

[9.36.3.9.] 9.36.3.9. ([3] 3) [F95,F100-OE1.1]

[9.36.3.9.] 9.36.3.9. ([4] 4) [F95,F98,F100-OE1.1]

[9.36.3.10.] 9.36.3.10. ([1] 1) [F95,F98,F99-OE1.1]

[9.36.3.10.] 9.36.3.10. ([2] 2) [F95,F98,F99-OE1.1]

[9.36.3.10.] 9.36.3.10. ([3] 3) no attributions

[9.36.3.11.] 9.36.3.11. ([1] 1) [F95,F98,F99-OE1.1]

[9.36.3.11.] 9.36.3.11. ([2] 2) no attributions

[9.36.3.11.] 9.36.3.11. ([3] 3) [F93,F96-OE1.1]

[9.36.4.1.] 9.36.4.1. ([1] 1) no attributions

[9.36.4.1.] 9.36.4.1. ([2] 2) no attributions

[9.36.4.2.] 9.36.4.2. ([1] 1) [F96,F98-OE1.1]

[9.36.4.2.] 9.36.4.2. ([2] 2) [F93,F96-OE1.1]

[9.36.4.2.] 9.36.4.2. ([3] 3) [F98-OE1.1]

[9.36.4.3.] 9.36.4.3. ([1] 1) [F96,F98-OE1.1]

[9.36.4.3.] 9.36.4.3. ([2] 2) no attributions

[9.36.4.3.] 9.36.4.3. ([3] 3) [F93,F96-OE1.1]

[9.36.4.4.] 9.36.4.4. ([1] 1) [F93,F96-OE1.1]

[9.36.4.4.] 9.36.4.4. ([2] 2) [F93,F96-OE1.1]

[9.36.4.4.] 9.36.4.4. ([3] 3) [F93,F96-OE1.1]

[9.36.4.5.] 9.36.4.5. ([1] 1) [F96-OE1.1]

[9.36.4.6.] 9.36.4.6. ([1] 1) [F96-OE1.1]

[9.36.4.6.] 9.36.4.6. ([2] 2) [F96-OE1.1]

[9.36.5.1.] 9.36.5.1. ([1] 1) no attributions

[9.36.5.1.] 9.36.5.1. ([2] 2) no attributions

[9.36.5.2.] 9.36.5.2. ([1] 1) no attributions

[9.36.5.2.] 9.36.5.2. ([2] 2) no attributions

[9.36.5.3.] 9.36.5.3. ([1] 1) no attributions

[9.36.5.3.] 9.36.5.3. ([2] 2) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.5.3.] 9.36.5.3. ([3] 3) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.5.3.] 9.36.5.3. ([4] 4) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.5.3.] 9.36.5.3. ([5] 5) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.5.3.] 9.36.5.3. ([6] 6) [F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([1] 1) no attributions

[9.36.5.4.] 9.36.5.4. ([2] 2) no attributions

[9.36.5.4.] 9.36.5.4. ([3] 3) [F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([4] 4) [F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([5] 5) [F95,F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([6] 6) [F95,F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([7] 7) [F95,F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([8] 8) [F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([9] 9) [F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([10] 10) [F90,F99-OE1.1]

[9.36.5.4.] 9.36.5.4. ([11] 11) [F90,F99-OE1.1]

[9.36.5.5.] 9.36.5.5. ([1] 1) [F99-OE1.1]

[9.36.5.5.] 9.36.5.5. ([2] 2) [F99-OE1.1]

[9.36.5.5.] 9.36.5.5. ([3] 3) [F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([1] 1) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([2] 2) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([3] 3) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([4] 4) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([5] 5) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([6] 6) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([7] 7) [F92,F93,F95,F96,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([8] 8) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([9] 9) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([10] 10) [F92,F99-OE1.1]

[9.36.5.6.] 9.36.5.6. ([11] 11) [F92,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([1] 1) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([2] 2) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([3] 3) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([4] 4) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([5] 5) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([6] 6) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([7] 7) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([8] 8) [F95,F99-OE1.1]

[9.36.5.7.] 9.36.5.7. ([9] 9) [F95,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([1] 1) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([2] 2) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([3] 3) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([4] 4) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([5] 5) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([6] 6) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([7] 7) [F96,F99-OE1.1]

[9.36.5.8.] 9.36.5.8. ([8] 8) [F96,F99-OE1.1]

[9.36.5.9.] 9.36.5.9. ([1] 1) [F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([1] 1) [F92,F95,F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([2] 2) no attributions

[9.36.5.10.] 9.36.5.10. ([3] 3) no attributions

[9.36.5.10.] 9.36.5.10. ([4] 4) [F92,F95,F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([5] 5) [F92,F95,F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([6] 6) [F92,F95,F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([7] 7) [F92,F95,F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([8] 8) no attributions

[9.36.5.10.] 9.36.5.10. ([9] 9) [F90,F91,F92,F95,F99-OE1.1]

[9.36.5.10.] 9.36.5.10. ([10] 10) [F90,F91,F92,F93,F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([1] 1) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([2] 2) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([3] 3) [F92,F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([4] 4) [F95,F99,F100-OE1.1]

[9.36.5.11.] 9.36.5.11. ([5] 5) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([6] 6) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([7] 7) no attributions

[9.36.5.11.] 9.36.5.11. ([8] 8) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([9] 9) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([10] 10) [F95,F99,F100-OE1.1]

[9.36.5.11.] 9.36.5.11. ([11] 11) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([12] 12) [F95,F99,F100-OE1.1]

[9.36.5.11.] 9.36.5.11. ([13] 13) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([14] 14) [F95,F99,F100-OE1.1]

[9.36.5.11.] 9.36.5.11. ([15] 15) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([16] 16) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([17] 17) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([18] 18) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([19] 19) [F95,F99-OE1.1]

[9.36.5.11.] 9.36.5.11. ([20] 20) [F95,F99-OE1.1]

[9.36.5.12.] 9.36.5.12. ([1] 1) [F96,F99-OE1.1]

[9.36.5.12.] 9.36.5.12. ([2] 2) no attributions

[9.36.5.13.] 9.36.5.13. ([1] 1) [F99-OE1.1]

[9.36.5.13.] 9.36.5.13. ([2] 2) [F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([1] 1) [F92,F95,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([2] 2) [F90,F91,F92,F95,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([3] 3) [F92,F95,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([4] 4) [F92,F95,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([5] 5) [F92,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([6] 6) [F92,F95,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([7] 7) [F92,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([8] 8) [F92,F99-OE1.1]

[9.36.5.14.] 9.36.5.14. ([9] 9) [F92,F99,F95-OE1.1]

[9.36.5.14.] 9.36.5.14. ([10] 10) [F92,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([1] 1) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([2] 2) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([3] 3) [F95,F99,F100-OE1.1]

[9.36.5.15.] 9.36.5.15. ([4] 4) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([5] 5) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([6] 6) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([7] 7) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([8] 8) [F95,F99,F100-OE1.1]

[9.36.5.15.] 9.36.5.15. ([9] 9) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([10] 10) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([11] 11) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([12] 12) [F95,F99,F100-OE1.1]

[9.36.5.15.] 9.36.5.15. ([13] 13) [F95,F99,F100-OE1.1]

[9.36.5.15.] 9.36.5.15. ([14] 14) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([15] 15) [F95,F99-OE1.1]

[9.36.5.15.] 9.36.5.15. ([16] 16) [F95,F99-OE1.1]

[9.36.5.16.] 9.36.5.16. ([1] 1) [F95,F99-OE1.1]

[9.36.5.16.] 9.36.5.16. ([2] 2) [F95,F99-OE1.1]

[9.36.5.16.] 9.36.5.16. ([3] 3) [F95,F99-OE1.1]

[9.36.6.1.] 9.36.6.1. ([1] 1) no attributions

[9.36.6.2.] 9.36.6.2. ([1] 1) no attributions

[9.36.6.3.] 9.36.6.3. ([1] 1) no attributions

[9.36.6.3.] 9.36.6.3. ([1] 1) [F90-OE1.1]

[9.36.6.3.] 9.36.6.3. ([2] 2) no attributions

[9.36.6.3.] 9.36.6.3. ([3] 3) no attributions

[9.36.6.4.] 9.36.6.4. ([1] 1) no attributions

[9.36.6.4.] 9.36.6.4. ([1] 1) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.6.4.] 9.36.6.4. ([2] 2) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.6.4.] 9.36.6.4. ([3] 3) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.6.4.] 9.36.6.4. ([4] 4) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.7.1.] 9.36.7.1. ([1] 1) no attributions

[9.36.7.1.] 9.36.7.1. ([2] 2) no attributions

[9.36.7.2.] 9.36.7.2. ([1] 1) no attributions

[9.36.7.2.] 9.36.7.2. ([1] 1) [F90,F91,F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.7.3.] 9.36.7.3. ([1] 1) no attributions

[9.36.7.3.] 9.36.7.3. ([2] 2) [F95-OE1.1]

[9.36.7.3.] 9.36.7.3. ([3] 3) no attributions

[9.36.7.3.] 9.36.7.3. ([3] 3) [F90,F91,F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.7.3.] 9.36.7.3. ([4] 4) no attributions

[9.36.7.3.] 9.36.7.3. ([5] 5) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.7.3.] 9.36.7.3. ([6] 6) no attributions

[9.36.7.3.] 9.36.7.3. ([6] 6) [F99-OE1.1]

[9.36.7.3.] 9.36.7.3. ([7] 7) [F99-OE1.1]

[9.36.7.3.] 9.36.7.3. ([8] 8) [F90,F91,F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.7.3.] 9.36.7.3. ([9] 9) [F90,F91,F92,F93,F95,F100-OE1.1]

[9.36.8.1.] 9.36.8.1. ([1] 1) no attributions

[9.36.8.2.] 9.36.8.2. ([1] 1) no attributions

[9.36.8.2.] 9.36.8.2. ([1] 1) [F90,F91,F92,F93,F95,F96,F98,F99,F100-OE1.1]

[9.36.8.4.] 9.36.8.4. ([1] 1) no attributions

[9.36.8.5.] 9.36.8.5. ([1] 1) no attributions

[9.36.8.5.] 9.36.8.5. ([2] 2) [F92-OE1.1]

[9.36.8.5.] 9.36.8.5. ([3] 3) [F92-OE1.1]

[9.36.8.5.] 9.36.8.5. ([4] 4) no attributions

[9.36.8.5.] 9.36.8.5. ([4] 4) [F92-OE1.1]

[9.36.8.5.] 9.36.8.5. ([5] 5) no attributions

[9.36.8.5.] 9.36.8.5. ([5] 5) [F92-OE1.1]

[9.36.8.5.] 9.36.8.5. ([6] 6) [F92-OE1.1]

[9.36.8.5.] 9.36.8.5. ([7] 7) [F92-OE1.1]

[9.36.8.6.] 9.36.8.6. ([1] 1) [F92-OE1.1]

[9.36.8.6.] 9.36.8.6. ([2] 2) no attributions

[9.36.8.6.] 9.36.8.6. ([3] 3) no attributions

[9.36.8.6.] 9.36.8.6. ([3] 3) [F92-OE1.1]

[9.36.8.6.] 9.36.8.6. ([4] 4) [F92-OE1.1]

[9.36.8.7.] 9.36.8.7. ([1] 1) no attributions

[9.36.8.7.] 9.36.8.7. ([2] 2) [F92-OE1.1]

[9.36.8.7.] 9.36.8.7. ([3] 3) [F92-OE1.1]

[9.36.8.7.] 9.36.8.7. ([4] 4) no attributions

[9.36.8.8.] 9.36.8.8. ([1] 1) no attributions

[9.36.8.8.] 9.36.8.8. ([2] 2) [F90-OE1.1]

[9.36.8.9.] 9.36.8.9. ([1] 1) no attributions

[9.36.8.9.] 9.36.8.9. ([2] 2) no attributions

[9.36.8.9.] 9.36.8.9. ([3] 3) no attributions

[9.36.8.9.] 9.36.8.9. ([3] 3) [F95,F100-OE1.1]

[9.36.8.9.] 9.36.8.9. ([4] 4) [F95-OE1.1]

[9.36.8.10.] 9.36.8.10. ([1] 1) no attributions

[9.36.8.10.] 9.36.8.10. ([2] 2) no attributions

[9.36.8.10.] 9.36.8.10. ([3] 3) [F96-OE1.1]

[9.36.8.11.] 9.36.8.11. ([1] 1) [F95-OE1.1]

[9.36.8.11.] 9.36.8.11. ([2] 2) [F95-OE1.1]

[9.36.12.1.] -- ([1] --) no attributions

[9.36.12.2.] -- ([1] --) no attributions

[9.36.12.3.] -- ([1] --) no attributions

[9.36.12.3.] -- ([2] --) no attributions

[9.36.12.3.] -- ([3] --) no attributions

[9.36.12.4.] -- ([1] --) [F101-OE2.1]

[9.36.12.4.] -- ([2] --) [F101-OE2.1]

Submit a comment

Proposed Change 1823

Code Reference(s):	**NBC20 Div.B 9.36.2.7. (first printing)** **NBC20 Div.B 9.36.5.3. (first printing)** **NBC20 Div.B 9.36.7.3. (first printing)**
Subject:	Fenestration
Title:	Thermal Characteristics of Fenestration and Doors
Description:	This proposed change places a limit on the maximum solar heat gain coefficient for fenestration and doors based on the fenestration and door area to gross wall area ratio.

This change could potentially affect the following topic areas:

- ☐ Division A
- ☐ Division C
- ☐ Building operations
- ☑ Small Buildings
- ☑ Fire Protection
- ☐ Accessibility
- ☑ Building Envelope
- ☐ Heating, Ventilating and Air Conditioning
- ☑ Division B
- ☑ Design and Construction
- ☑ Housing
- ☐ Large Buildings
- ☑ Occupant safety in use
- ☐ Structural Requirements
- ☑ Energy Efficiency
- ☐ Plumbing
- ☐ Construction and Demolition Sites

Problem

Currently, Article 9.36.2.7. of Division B of the National Building Code of Canada (NBC) 2020 allows Code users to choose either the overall thermal transmittance (U-value) or Energy Rating (ER) path to comply with the Code requirements on the thermal characteristics of fenestration and doors.

The Code does not adequately address the risk of the overheating of buildings due to the relationship between the solar heat gain coefficient (SHGC) of glazing and the fenestration and door area to gross wall area ratio (FDWR). Buildings that have large areas of high solar heat gain from fenestration on orientations with significant solar exposure are the most susceptible to overheating. East-west orientations in particular may cause higher peak cooling loads and overheating potential. In homes using the prescriptive path for compliance that have mechanical cooling, this situation can result in higher energy use; and, in homes that do not have mechanical cooling, this situation can result in overheating, leading to a higher likelihood of homeowners installing mechanical cooling systems in future that are not included in the energy model used at the time of construction. These risks may be further amplified when solar heat gain energy is beneficial to modeling for compliance with energy-efficiency requirements.

Conversely, in the NBC 2020, Sentence 9.36.7.3.(2) requires that peak cooling in the proposed house be lower than that of the reference house. The reference house is always modeled with an SHGC of 0.26 for all fenestration, which is considered a very low solar gain coefficient. Use of this SHGC can cause non-compliance in homes that otherwise appear to meet the intent of the Code and may be overly restrictive to Code users.

Justification

An ongoing concern about the potential overheating of homes and the related impact on energy use was identified. While Sentence 9.36.8.6.(4) in the prescriptive compliance path attempts to address the potential for overheating by restricting ER compliance to orientations with less than 17% FDWR, there are no explicit limitations on high solar heat gain from fenestration, which can allow for the selection of high solar heat gain fenestration that is compliant with the current requirement. This situation can result in homes that use the prescriptive path for compliance having high energy usage for cooling, causing discomfort to occupants, and increasingly causing their owners to install mechanical cooling after occupancy that is not accounted for in the energy compliance models of the Code.

A study completed by NRC titled, "Climate Resilience Buildings: Guideline for management of overheating risk in residential buildings," [1] in 2021 (updated in 2022) in section 10.1 identifies 0.40 SHGC or lower as a notional threshold for low solar gain and shows that the selection of low solar gain fenestration correlates with a reduced risk of overheating in homes. An analysis titled, "Building Energy Simulations: Impact of SHGC on the thermal performance of detached houses in different Canadian climate zones," [2] presents additional information about the varying impact of SHGC on the increased risk of overheating by climate zone in response to the initial proposed change presented during the Fall 2023 public review.

This proposed change restricts the SHGC of fenestration depending on both the FDWR of the whole building and the climate zone of the proposed house, as specified in proposed Table 9.36.2.7.-B.

Using the performance path, NBC Sentence 9.36.7.3.(2) requires that the Code user demonstrate compliance in the proposed house by achieving a peak cooling load that is lower than that of the reference house. While this approach is intended to limit the risk of houses overheating, in application it can cause houses that appear to comply with the intent of the Code to fail the compliance metric, causing undue hardship for Code users. This situation is due in part to the use of an SHGC of 0.26 for all fenestration in the reference house (Clause 9.36.5.14.(2)(c)). Combined with the procedure for redistribution of windows in the reference house (Sentence 9.36.5.14.(5)), a peak cooling value that is unduly restrictive can be established.

Examples of types of houses that may be affected include low-load houses with small volumes, houses with overall small cooling loads, and houses with mechanical cooling installed that is already accounted for in the energy model.

It was determined that revising the SHGC used in the reference house to a higher value would trigger substantial changes to the already established tables of prescriptive points (Subsection 9.36.8.), as well as make compliance with the energy performance tiers more difficult by reducing the heating energy required by the reference house.

It was also determined that a solution would require the following two additional considerations to be incorporated into the compliance requirements to reduce the risk of overheating related to NBC Article 9.36.7.3.:

1. The introduction of a cooling intensity metric that limits the design cooling intensity of the proposed house to 10 W/m^3, based on the research presented by CanmetENERGY Ottawa to the Joint Task Group on Potential Consequences [3].
2. The installation of a mechanical cooling system in the proposed house that has the capacity to meet the peak cooling load, and that is included in the energy model calculation for compliance with NBC Article 9.36.7.2.

Taken together, the above-mentioned changes would provide relief to the owners of houses at the margins of compliance with the current requirements that meet the intent of the overheating requirements. The above-mentioned changes would also reduce the risk of overheating in houses that comply with the requirements using the prescriptive path.

The narrow scope of the work related to the above-mentioned changes limits the solutions in this proposed change to addressing concerns about overheating as they relate to energy use in houses. Overheating due to extreme climate events was deemed to be outside of scope and is not directly addressed. While this proposed change may form part of a broader solution to the overheating issue, it should not be construed as having that goal.

EXISTING PROVISION

9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights

1) Except as provided in Sentences (2) to (8) and Article 9.36.2.11., fenestration and doors shall have an overall thermal transmittance (U-value) not greater than, or an Energy Rating not less than, the values listed in Table 9.36.2.7.-A for the applicable heating-degree day category. (See Note A-9.36.2.7.(1) and (2).)

Table 9.36.2.7.-A
Required Thermal Characteristics of Fenestration and Doors
Forming Part of Sentence 9.36.2.7.(1)

Components	Thermal Characteristics (1)	Heating Degree-Days of *Building* Location, (2) in Celsius Degree-Days					
		Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
Fenestration (3) and doors	Max. U-value, $W/(m^2 \times K)$	1.84	1.84	1.61	1.61	1.44	1.44
	Min. Energy Rating	21	21	25	25	29	29

Notes to Table 9.36.2.7.-A:

(1) See Note A-Table 9.36.2.7.-A.

(2) See Article 1.1.3.1.

(3) Except skylights (see Sentence (2)) and glass block assemblies (see Sentence (4)).

2) Skylights shall have an overall thermal transmittance not greater than the values listed in Table 9.36.2.7.-B for the applicable heating-degree day category. (See Note

A-9.36.2.7.(1) and (2).)

Table 9.36.2.7.-B
Overall Thermal Transmittance of Skylights
Forming Part of Sentence 9.36.2.7.(2)

Component	Heating Degree-Days of *Building* Location, (1) in Celsius Degree-Days					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Maximum Overall Thermal Transmittance, W/(m²×K)					
Skylights	2.92	2.92	2.75	2.75	2.41	2.41

Note to Table 9.36.2.7.-B:

(1) See Article 1.1.3.1.

3) Except for site-assembled or site-glazed factory-made fenestration products, curtain wall construction, and site-built windows and glazed doors that are tested in accordance with Sentence 9.36.2.2.(3), site-built windows and glazed doors need not comply with Sentence (1), provided they are constructed in accordance with one of the options presented in Table 9.36.2.7.-C for the applicable climate zone. (See Note A-9.36.2.7.(3).)

Table 9.36.2.7.-C
Compliance Options for Site-built Windows and Glazed Portion of Doors
Forming Part of Sentence 9.36.2.7.(3)

Component	Description of Component	Compliance Options							
		Climate Zones 4 and 5			Climate Zones 6 and 7A			Climate Zones 7B and 8	
		≤ 3999 HDD			4000 to 5999 HDD			≥ 6000 HDD	
		1	2	3	1	2	3	1	2
Frame	non-metallic	✓	✓	—	✓	✓	—	✓	✓
	thermally broken metallic	—	—	✓	—	—	✓	—	—
Glazing	double	—	✓	—	—	—	—	—	—
	triple	✓	—	✓	✓	✓	✓	✓	✓
	argon-filled	—	✓	—	✓	—	✓	—	✓
Low-e coating	none	✓	—	—	—	—	—	—	—
	number of panes with ≤ 0.10	—	≥ 1	—	—	—	—	≥ 2	—

Component	Description of Component	Compliance Options							
		Climate Zones 4 and 5			Climate Zones 6 and 7A			Climate Zones 7B and 8	
		≤ 3999 HDD			4000 to 5999 HDD			≥ 6000 HDD	
		1	2	3	1	2	3	1	2
	number of panes with ≤ 0.20	—	—	2	≥ 1	2	≥ 2	—	≥ 2
Spacer	size, mm	12.7	—	12.7	≥ 12.7	12.7	≥ 12.7	≥ 12.7	≥ 12.7
	non-metallic	—	✓	—	—	—	—	—	—

4) Glass block assemblies separating *conditioned space* from unconditioned space or the exterior shall have

a) an overall thermal transmittance of not more than 2.9 W/(m^2×K), and

b) a total aggregate area of not more than 1.85 m^2.

5) One door separating a *conditioned space* from an unconditioned space or the exterior is permitted to have an overall thermal transmittance up to 2.6 W/(m^2×K).

6) Storm windows and doors need not comply with Sentence (1).

7) Vehicular access doors separating a *conditioned space* from an unconditioned space or the exterior shall have a nominal thermal resistance of not less than 1.1 (m^2×K)/W.

8) Access hatches separating a *conditioned space* from an unconditioned space shall be insulated to a nominal thermal resistance of not less than 2.6 (m^2×K)/W.

Note A-9.36.2.7.(1) and (2) Design of Windows, Glazed Doors and Skylights.

The design of windows, glazed doors and skylights involves many variables that impact their energy performance and their compliance with the Code's energy efficiency requirements, such as the type of framing material, number of glass layers, type and position of low-emissivity (low-e) coating, type and size of spacer between glass layers, type of gas used to fill the glass unit, and additionally for glazed doors, type of materials used to construct the door slab.

Here are a few examples of common window and glazed door constructions:

- a U-value of about 1.8 is typically achieved using argon-filled glazing units with a low-e coating and energy-efficient spacer materials installed in a frame chosen mostly for aesthetic reasons;
- a U-value of about 1.6 is typically achieved using triple glazing but may be achieved using double glazing with an optimized gas, spacer and coating configuration installed in an insulated frame;
- a U-value of about 1.4 is typically achieved using triple glazing and multiple low-e coatings.

U-values and Energy Ratings (ER) for manufactured windows, glazed doors and skylights are obtained through testing in accordance with the standards referenced in Sentence 9.36.2.2.(3). The U-value and/or ER number for a proprietary product that has been tested can be found in the manufacturer's literature or on a label affixed to the product.

Note A-Table 9.36.2.7.-A Thermal Characteristics of Windows and Doors.

Energy Ratings, also known as ER numbers, are based on CSA A440.2/A440.3, "Fenestration energy performance/User guide to CSA A440.2:19, Fenestration energy performance".

They are derived from a formula that measures the overall performance of windows or doors based on solar heat gain, heat loss and air leakage through frames, spacers and glass. The ER formula produces a single unitless ER number between 0 and 50 for each of the specified sample sizes found in CSA A440.2/A440.3 (the number only applies to the product at the sample size and not to a particular proprietary window or door). The higher the ER number, the more energy-efficient the product. Note that the ER formula does not apply to sloped glazing so skylights do not have an ER value.

The maximum U-values specified in Table 9.36.2.7.-A are based on the following assumptions:

- that of moderate solar gain for each window and glazed door,
- that houses have a mix of picture and sash windows, each of which performs differently from an energy-efficiency perspective, and
- that fenestration area to gross wall area ratios typically vary between 8% and 25%.

Note A-9.36.2.7.(3) Site-built Windows.

Site-built windows are often installed in custom-built homes or in unique configurations for which manufactured units are not available. The airtightness requirements in Section 9.7. also apply to site-built windows.

9.36.5.3. Compliance

(See Note A-9.36.5.3.)

1) The performance compliance calculations shall determine the annual energy consumption of the proposed house and the house energy target of a reference house in accordance with

a) this Subsection, or

b) the EnerGuide Rating System, version 15, and Sentence (2).

(See Note A-9.36.5.3.(1).)

2) The annual energy consumption of the proposed house shall not exceed the house energy target of the reference house. (See Note A-9.36.5.3.(2).)

3) In establishing the house energy target, *building* components, systems and assemblies shall be accounted for in accordance with the prescriptive requirements of Subsections 9.36.2. to 9.36.4. for the climate zone under consideration.

4) In establishing the annual energy consumption, *building* components, systems and assemblies that are addressed in the scope of the prescriptive requirements of Subsections 9.36.2. to 9.36.4. shall be accounted for for the climate zone under consideration.

5) Where the construction techniques or *building* components, systems or assemblies used are more energy-efficient than those prescribed by the prescriptive requirements, the performance compliance calculations are permitted to take this increased performance level into account in the determination of the annual energy consumption, provided it can be quantified and is not dependent on occupant interaction.

6) Both the proposed and reference houses shall be modeled using the same climatic data, *soil* conditions, operating schedules in Article 9.36.5.4. and temperature set-points.

Note A-9.36.5.3. Compliance.

Where a Part 9 building contains more than one dwelling unit, compliance with Section 9.36. can be demonstrated on a per-unit basis. For dwelling units that are house-like in form, such as single detached houses, semi-detached houses, row houses and townhouses, this approach is commonly used as it can simplify airtightness testing. For dwelling units that are apartment-like in form, airtightness testing can be simplified by subdividing buildings into zones containing one or more dwelling units that are connected by a common space.

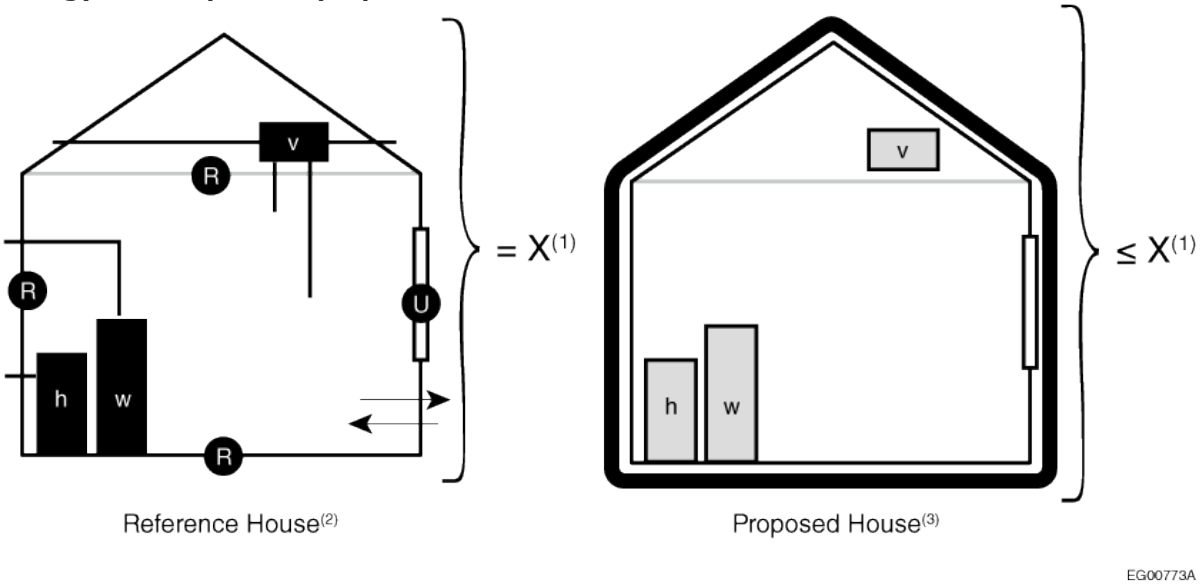
Note A-9.36.5.3.(1) Energy Modeling.

The energy modeling of the proposed and reference houses should be performed using the same software. An energy modeling platform other than the EnerGuide Rating System may be used to demonstrate compliance with Clause 9.36.5.3.(1)(a).

Note A-9.36.5.3.(2) Concept of Comparing Performance.

Comparing the performance of a reference house to that of a proposed house is one way to benchmark the performance of a proposed house in relation to Code requirements. There are other ways to benchmark energy consumption models: for example, by setting a quantitative energy target or using a benchmark design. In the performance compliance option presented in Subsection 9.36.5., the user must demonstrate that their design results in a similar level of performance to that of the prescriptive requirements— an approach that is consistent with the concept of objective-based codes.

Figure A-9.36.5.3.(2)
Energy consumption of proposed house versus that of reference house



Notes to Figure A-9.36.5.3.(2):

(1) X = calculated house energy target of reference house

(2) Complies with prescriptive requirements in Subsections 9.36.2. to 9.36.4.

(3) Complies with objectives of Subsections 9.36.2. to 9.36.4. using performance compliance option

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9.36.7.3. Energy Performance Improvement Compliance Calculations

1) Except where otherwise stated in this Article, the proposed and reference houses shall be modeled in accordance with Subsection 9.36.5. to determine

a) the annual energy consumption of the proposed house and the house energy

target of the reference house,

b) the annual gross space heat loss of the proposed and reference houses calculated in accordance with Sentence (5), and

c) the peak cooling load of the proposed and reference houses (see Sentence (4)).

(See Note A-9.36.7.3.(1).)

2) The peak cooling load for the proposed house shall not be greater than the peak cooling load for the reference house. (See Sentence (4).)

3) Except for energy performance tier 1, where space heating is provided by a heat pump in the proposed house, the reference house shall be modeled using

a) equipment of the same type as the secondary or back-up system in the proposed house, but made to comply with the energy efficiency requirements of Article 9.36.3.10., or

b) electric resistance heaters, where no back-up is provided in the proposed house.

4) Where cooling systems are not installed in the proposed house, both the proposed and reference houses shall have additional models using appropriately sized space-cooling equipment serving all *conditioned spaces* to determine the peak cooling load. (See Note A-9.36.7.3.(4).)

5) The annual gross space heat loss shall be calculated as the sum of the cumulative heat loss from

a) conduction across opaque and transparent elements of the *building* envelope,

b) air infiltration and exfiltration, and

c) mechanical ventilation.

(See Note A-9.36.7.3.(5).)

6) The percent heat loss reduction shall be calculated by subtracting the annual gross space heat loss of the proposed house from the annual gross space heat loss of the reference house and dividing the result by the annual gross space heat loss of the reference house.

7) The percent improvement shall be calculated by subtracting the annual energy consumption of the proposed house from the house energy target of the reference house and dividing the result by the house energy target of the reference house.

8) The percent house energy target shall be calculated by dividing the annual energy consumption of the proposed house by the house energy target of the reference house.

9) The airtightness value used in the energy model for the proposed house shall be

a) the airtightness value set out in Clause 9.36.5.10.(9)(a), or

b) where an airtightness test is to be conducted, a design airtightness, until the airtightness has been measured in accordance with Sentence 9.36.6.3.(1) and the appropriate airtightness value set out in Sentence 9.36.5.10.(9) can be selected.

(See Note A-9.36.7.3.(9).)

Note A-9.36.7.3.(1) Reference House and Proposed House.

The terms "reference house" and "proposed house" have the same meanings as in Subsection 9.36.5. and they apply to energy models for both houses and multi-unit residential buildings. The term "house" is used for consistency and is intended to be applied to both houses and buildings within the scope of Subsection 9.36.7.

Note A-9.36.7.3.(4) Peak Cooling Load.

The term "peak cooling load" refers to the highest hourly-averaged rate of mechanical cooling required to maintain the building or house at the cooling set-point temperature over the course of the year. The peak cooling load must reflect the rate at which heat is extracted from the conditioned space, and not the rate of energy consumption of any cooling equipment.

Some modeling software only report peak cooling loads when the building or house model is configured with an air conditioner; in such cases, the model should include air-conditioning for the purpose of computing the peak cooling load. If the modeling software does not report peak hourly loads, the design cooling load may be used instead.

The peak cooling load criteria is intended to reduce the risk that houses built under the tiered energy performance compliance path will overheat in the summer. To meet this goal, the proposed house must achieve a peak cooling load that is no more than that of the reference house. Even so, this modeling requirement does not guarantee that a house will not overheat, as a reference house complying with Subsection 9.36.5. may nevertheless be prone to overheating in some circumstances. Instead, houses complying with this modeling requirement should be no more prone to overheating than houses constructed under other energy efficiency compliance paths in the Code. This requirement does not prescribe the installation of cooling systems in new construction nor can the installation of air-conditioning be used as an alternative compliance path for houses not meeting this requirement.

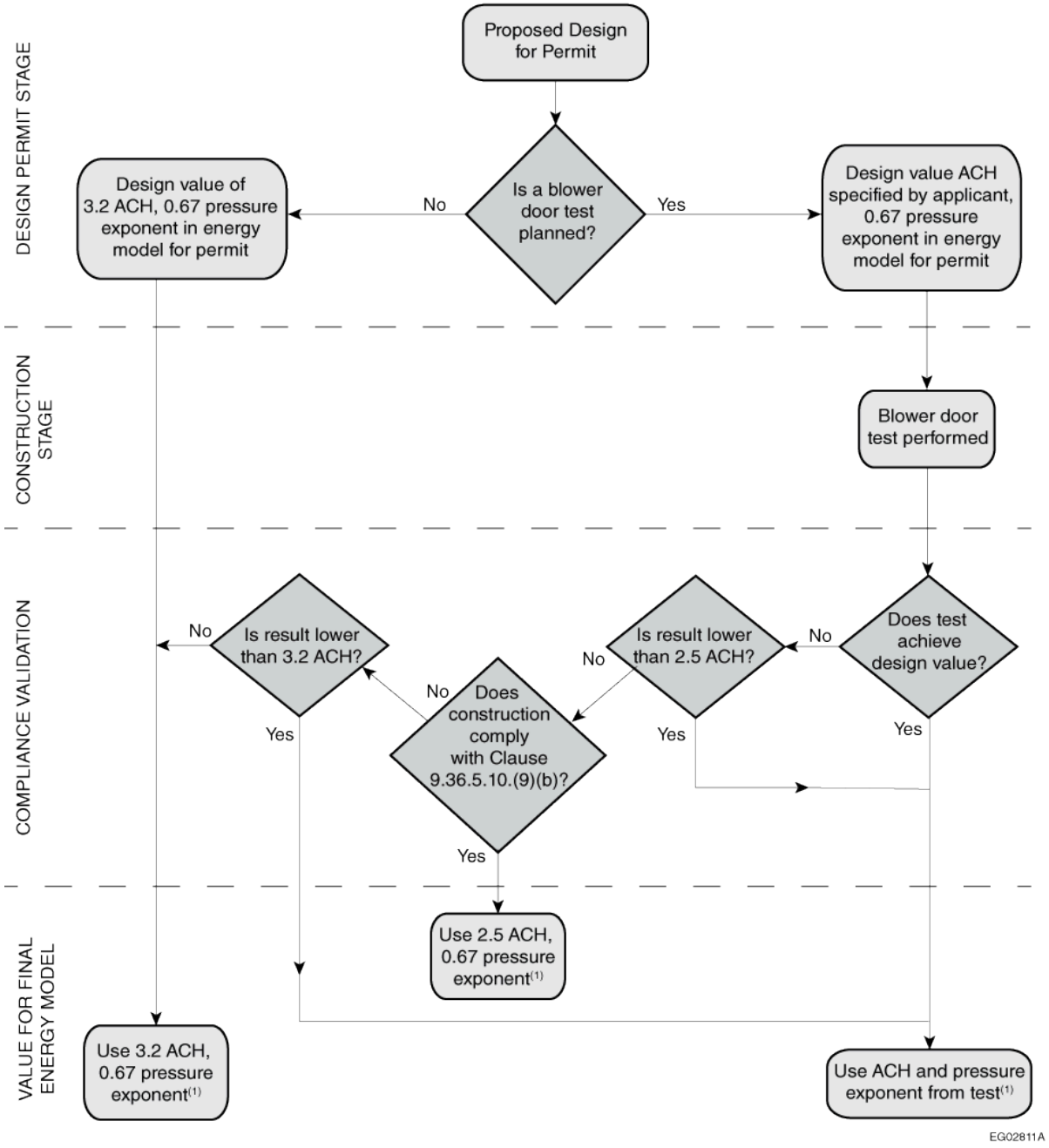
Note A-9.36.7.3.(5) Annual Gross Space Heat Loss.

The annual gross space heat loss has been selected as a good proxy for heat loss due to building envelope performance. It is readily extracted from building simulation models and correlates well with the combined conductive (through both fenestration and opaque elements) and air leakage losses, while excluding solar and internal gains. The inclusion of ventilation losses is not strictly relevant to building envelope performance, but their contribution to the annual gross space heat loss is generally small and, given that unbalanced ventilation is permitted by the Code and thus may be modeled, disaggregating energy losses due to unintentional air leakage from those due to intentional ventilation can be difficult in most simulation models.

Note A-9.36.7.3.(9) Airtightness Testing.

The flow chart in Figure A-9.36.7.3.(9) outlines the intended interpretation of Sentence 9.36.7.3.(9). Airtightness testing is voluntary, however, not testing will result in the proposed house model using a default airtightness of 3.2 air changes per hour (ACH) at 50 Pa pressure difference and a pressure exponent of 0.67.

Figure A-9.36.7.3.(9)
Determining the appropriate airtightness value to use in the energy model calculations in the tiered energy performance compliance path



Note to Figure A-9.36.7.3.(9):

(1) Airtightness value and pressure exponent of reference house shall be as per Sentence 9.36.5.14.(2).

Where testing is to be carried out, Code users may use a design value for ACH at 50 Pa pressure difference in the proposed house that they expect to achieve upon testing. Good airtightness is a significant contributor to energy-efficient performance and is likely to be needed to achieve the higher energy performance tiers, however, it requires careful detailing and planning. Caution is advised when choosing a design airtightness value, especially for Code users who are not used to delivering highly airtight buildings. Industry resources are available to assist with selecting and achieving a design airtightness.

Once an airtightness test has been performed, Code users may choose whether to use the test result, the default value of 3.2 ACH at 50 Pa pressure difference or, where the requirements of Clause 9.36.5.10.(9)(b) have been met, 2.5 ACH at 50 Pa pressure difference. It is important to note that a tested pressure exponent may only be used in cases where the tested ACH is used.

PROPOSED CHANGE AS SUBMITTED TO FALL 2023 PUBLIC REVIEW

[9.36.2.7.] 9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights

[1] 1) Except as provided in ~~Sentences (2) to (8)~~Sentences (3)-2025 to (9)-2025 and Article 9.36.2.11., fenestration and doors shall have an overall thermal transmittance (U-value) not greater than, or an Energy Rating not less than, the values listed in Table 9.36.2.7.-A for the applicable heating-degree day category. (See Note A-9.36.2.7.(1) and (3)~~Note A-9.36.2.7.(1) and (2)~~.)

Table [9.36.2.7.-A] 9.36.2.7.-A
Required Thermal Characteristics of Fenestration and Doors
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([1] 1)

Components	Thermal Characteristics (1)	Heating Degree-Days of *Building* Location, (2) in Celsius Degree-Days					
		Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
Fenestration (3) and doors	Max. U-value, W/(m^2×K)	1.84	1.84	1.61	1.61	1.44	1.44
	Min. Energy Rating	21	21	25	25	29	29

Notes to Table [9.36.2.7.-A] 9.36.2.7.-A:

(1) See Note A-Table 9.36.2.7.-A.

(2) See Article 1.1.3.1.

(3) Except skylights (see Sentence (3)-2025~~Sentence (2)~~) and glass block assemblies (see Sentence (5)-2025~~Sentence (4)~~).

[2] --) The solar heat gain coefficient of fenestration and doors in a given orientation shall not be greater than the value listed in Table 9.36.2.7.-B-2025 for the fenestration and door area to gross wall area ratio (FDWR) in that orientation.

Table [9.36.2.7.-B]
Solar Heat Gain Coefficient of Fenestration and Doors
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([3] 2)

Fenestration and door area to gross wall area ratio (FDWR)	Maximum solar heat gain coefficient of fenestration and doors
FDWR < 17%	0.45
17% < FDWR < 22%	0.40
FDWR > 22%	0.26

[3] 2) Skylights shall have an overall thermal transmittance not greater than the values listed in ~~Table 9.36.2.7.-B~~Table 9.36.2.7-C-2025 for the applicable heating-degree day category. (See Note A-9.36.2.7.(1) and (3)~~Note A-9.36.2.7.(1) and (2)~~.)

Table [9.36.2.7.-C] 9.36.2.7.-B
Overall Thermal Transmittance of Skylights
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([3] 2)

	Heating Degree-Days of *Building* Location, (1) in Celsius Degree-Days					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
Component	Maximum Overall Thermal Transmittance, W/(m^2×K)					
Skylights	2.92	2.92	2.75	2.75	2.41	2.41

Note to Table [9.36.2.7.-C] 9.36.2.7.-B:

(1) See Article 1.1.3.1.

[4] 3) Except for site-assembled or site-glazed factory-made fenestration products, curtain wall construction, and site-built windows and glazed doors that are tested in accordance with Sentence 9.36.2.2.(3), site-built windows and glazed doors need not comply with Sentence (1), provided they are constructed in accordance with one of the options presented in ~~Table 9.36.2.7.-C~~Table 9.36.2.7.-D for the applicable climate zone. (See Note A-9.36.2.7.(4)~~Note A-9.36.2.7.(3)~~.)

Table [9.36.2.7.-D] 9.36.2.7.-C
Compliance Options for Site-built Windows and Glazed Portion of Doors
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([4] 3)

Component	Description of Component	Compliance Options							
		Climate Zones 4 and 5			Climate Zones 6 and 7A			Climate Zones 7B and 8	
		≤ 3999 HDD			4000 to 5999 HDD			≥ 6000 HDD	
		1	2	3	1	2	3	1	2
Frame	non-metallic	✓	✓	—	✓	✓	—	✓	✓
	thermally broken metallic	—	—	✓	—	—	✓	—	—
Glazing	double	—	✓	—	—	—	—	—	—
	triple	✓	—	✓	✓	✓	✓	✓	✓
	argon-filled	—	✓	—	✓	—	✓	—	✓
Low-e coating	none	✓	—	—	—	—	—	—	—
	number of panes with ≤ 0.10	—	≥ 1	—	—	—	—	≥ 2	—
	number of panes with ≤ 0.20	—	—	2	≥ 1	2	≥ 2	—	≥ 2
Spacer	size, mm	12.7	—	12.7	≥ 12.7	12.7	≥ 12.7	≥ 12.7	≥ 12.7
	non-metallic	—	✓	—	—	—	—	—	—

[5] 4) Glass block assemblies separating *conditioned space* from unconditioned space or the exterior shall have

[a] a) an overall thermal transmittance of not more than 2.9 W/(m^2×K), and

[b] b) a total aggregate area of not more than 1.85 m^2.

[6] 5) One door separating a *conditioned space* from an unconditioned space or the exterior is permitted to have an overall thermal transmittance up to 2.6 W/(m^2×K).

[7] 6) Storm windows and doors need not comply with Sentence (1).

[8] 7) Vehicular access doors separating a *conditioned space* from an unconditioned space or the exterior shall have a nominal thermal resistance of not less than 1.1 (m^2×K)/W.

[9] 8) Access hatches separating a *conditioned space* from an unconditioned space shall be insulated to a nominal thermal resistance of not less than 2.6 (m^2×K)/W.

[9.36.5.3.] 9.36.5.3. Compliance
(See Note A-9.36.5.3.)

[1] 1) The performance compliance calculations shall determine the annual energy consumption of the proposed house and the house energy target of a reference house

in accordance with

[a] a) this Subsection, or

[b] b) the EnerGuide Rating System, version 15, and Sentence (2).

(See Note A-9.36.5.3.(1).)

[2] 2) The annual energy consumption of the proposed house shall not exceed the house energy target of the reference house. (See Note A-9.36.5.3.(2).)

[3] 3) In establishing the house energy target, *building* components, systems and assemblies shall be accounted for in accordance with the prescriptive requirements of Subsections 9.36.2. to 9.36.4. for the climate zone under consideration.

[4] 4) In establishing the annual energy consumption, *building* components, systems and assemblies that are addressed in the scope of the prescriptive requirements of Subsections 9.36.2. to 9.36.4. shall be accounted for for the climate zone under consideration.

[5] 5) Where the construction techniques or *building* components, systems or assemblies used are more energy-efficient than those prescribed by the prescriptive requirements, the performance compliance calculations are permitted to take this increased performance level into account in the determination of the annual energy consumption, provided it can be quantified and is not dependent on occupant interaction.

[6] 6) Both the proposed and reference houses shall be modeled using the same climatic data, *soil* conditions, operating schedules in Article 9.36.5.4. and temperature set-points.

[7] --) Where a cooling system is not installed in the proposed house, the peak cooling load shall be modeled for both the proposed and reference houses by using additional models with appropriately sized space-cooling equipment serving all *conditioned spaces*. (See Note A-9.36.5.3.(7).)

[8] --) The proposed house described in Sentence (7) shall have

[a] --) a peak cooling load not greater than 110% of the peak cooling load for the reference house, or

[b] --) a design cooling intensity not greater than 4.5 W/m^3.

Note A-9.36.5.3.(7). Peak Cooling Load.

The term "peak cooling load" refers to the highest hourly-averaged rate of mechanical cooling required to maintain the building or house at the cooling set-point temperature over the course of the year. The peak cooling load must reflect the rate at which heat is extracted from the conditioned space and not the rate of energy consumption of any cooling equipment. Some modeling software only reports peak cooling loads when the building or house model is configured with an air conditioner; in such cases, the model should include air-conditioning for the purpose of computing the peak cooling load. If the modeling software does not report peak hourly loads, the design cooling load may be used instead.

The peak cooling load criterion is intended to reduce the risk that houses will overheat in the summer as a consequence of the energy reduction measures required by the Code. To meet this goal, in houses without cooling systems, the proposed house must achieve a peak cooling load that is no more than 110% that of the reference house or a design cooling intensity of not more than 4.5 W/m^3. Even so, this modeling requirement does not guarantee that a house will not overheat, as a reference house complying with Subsection 9.36.5. may nevertheless be prone to overheating in some circumstances. This requirement does not prescribe the installation of cooling systems in new construction.

[9.36.7.3.] 9.36.7.3. Energy Performance Improvement Compliance Calculations

[1] 1) Except where otherwise stated in this Article, the proposed and reference houses shall be modeled in accordance with Subsection 9.36.5. to determine

[a] a) the annual energy consumption of the proposed house and the house energy target of the reference house,

[b] b) the annual gross space heat loss of the proposed and reference houses calculated in accordance with Sentence (5), and

[c] c) the peak cooling load of the proposed and reference houses ~~(see Sentence (4))~~.

(See Note A-9.36.7.3.(1).)

~~[2] 2)~~ ~~The peak cooling load for the proposed house shall not be greater than the peak cooling load for the reference house. (See Sentence (4).)~~

[3] 3) Except for energy performance tier 1, where space heating is provided by a heat pump in the proposed house, the reference house shall be modeled using

[a] a) equipment of the same type as the secondary or back-up system in the proposed house, but made to comply with the energy efficiency requirements of Article 9.36.3.10., or

[b] b) electric resistance heaters, where no back-up is provided in the proposed house.

~~[4] 4)~~ ~~Where cooling systems are not installed in the proposed house, both the proposed and reference houses shall have additional models using appropriately sized space-cooling equipment serving all *conditioned spaces* to determine the peak cooling load. (See Note A-9.36.7.3.(4).)~~

[5] 5) The annual gross space heat loss shall be calculated as the sum of the cumulative heat loss from

[a] a) conduction across opaque and transparent elements of the *building* envelope,

[b] b) air infiltration and exfiltration, and

[c] c) mechanical ventilation.

(See Note A-9.36.7.3.(5).)

[6] 6) The percent heat loss reduction shall be calculated by subtracting the annual gross space heat loss of the proposed house from the annual gross space heat loss of the reference house and dividing the result by the annual gross space heat loss of the reference house.

[7] 7) The percent improvement shall be calculated by subtracting the annual energy consumption of the proposed house from the house energy target of the reference house and dividing the result by the house energy target of the reference house.

[8] 8) The percent house energy target shall be calculated by dividing the annual energy consumption of the proposed house by the house energy target of the reference house.

[9] 9) The airtightness value used in the energy model for the proposed house shall be

[a] a) the airtightness value set out in Clause 9.36.5.10.(9)(a), or

[b] b) where an airtightness test is to be conducted, a design airtightness, until the airtightness has been measured in accordance with Sentence 9.36.6.3.(1) and the appropriate airtightness value set out in Sentence 9.36.5.10.(9) can be selected.

(See Note A-9.36.7.3.(9).)

~~Note A-9.36.7.3.(4) Peak Cooling Load.~~

~~The term "peak cooling load" refers to the highest hourly-averaged rate of mechanical cooling~~

~~required to maintain the building or house at the cooling set-point temperature over the course of the year. The peak cooling load must reflect the rate at which heat is extracted from the conditioned space, and not the rate of energy consumption of any cooling equipment.~~

~~Some modeling software only report peak cooling loads when the building or house model is configured with an air conditioner; in such cases, the model should include air-conditioning for the purpose of computing the peak cooling load. If the modeling software does not report peak hourly loads, the design cooling load may be used instead.~~

~~The peak cooling load criteria is intended to reduce the risk that houses built under the tiered energy performance compliance path will overheat in the summer. To meet this goal, the proposed house must achieve a peak cooling load that is no more than that of the reference house. Even so, this modeling requirement does not guarantee that a house will not overheat, as a reference house complying with Subsection 9.36.5. may nevertheless be prone to overheating in some circumstances. Instead, houses complying with this modeling requirement should be no more prone to overheating than houses constructed under other energy efficiency compliance paths in the Code. This requirement does not prescribe the installation of cooling systems in new construction nor can the installation of air-conditioning be used as an alternative compliance path for houses not meeting this requirement.~~

REVISED PROPOSED CHANGE FOLLOWING FALL 2023 PUBLIC REVIEW

[9.36.2.7.] 9.36.2.7. Thermal Characteristics of Fenestration, Doors and Skylights

[1] 1) Except as provided in Sentences (3)-2025 to (9)-2025 and Article 9.36.2.11., fenestration and doors shall have an overall thermal transmittance (U-value) not greater than, or an Energy Rating not less than, the values listed in Table 9.36.2.7.-A for the applicable heating-degree day category. (See Note A-9.36.2.7.(1) and (3).)

Table [9.36.2.7.-A] 9.36.2.7.-A
Required Thermal Characteristics of Fenestration and Doors
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([1] 1)

Components	Thermal Characteristics (1)	Heating Degree-Days of *Building* Location, (2) in Celsius Degree-Days					
		Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
Fenestration (3) and doors	Max. U-value, $W/(m^2 \times K)$	1.84	1.84	1.61	1.61	1.44	1.44
	Min. Energy Rating	21	21	25	25	29	29

Notes to Table [9.36.2.7.-A] 9.36.2.7.-A:

(1) See Note A-Table 9.36.2.7.-A.

(2) See Article 1.1.3.1.

(3) Except skylights (see Sentence (3)-2025) and glass block assemblies (see Sentence (5)-2025).

[2] --) The solar heat gain coefficient of fenestration and doors ~~in a given orientation~~ shall not be greater than the value listed in Table 9.36.2.7.-B-2025 for the fenestration and door area to gross wall area ratio (FDWR) ~~in that orientation~~.

Table [9.36.2.7.-B]
Solar Heat Gain Coefficient of Fenestration and Doors
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([3] 2)

Fenestration and Door Area to Gross Wall Area Ratio (FDWR)	Heating Degree-Days of Building Location (1) in Celsius Degree-Days					
	Maximum Solar Heat Gain Coefficient ~~of fenestration and doors~~					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 > 7000
FDWR ~~<~~≤ 17%	0.35	0.40	0.45	0.50	0.55	0.60
17% < FDWR ~~<~~≤ 22%	0.30	0.35	0.40	0.45	0.50	0.55
22% < FDWR ~~>~~≤ ~~22~~30%	0.26	0.30	0.35	0.40	0.45	0.50
FDWR > 30%	0.26					

Note to Table [9.36.2.7.-B] :

(1) See Article 1.1.3.1.

[3] 2) Skylights shall have an overall thermal transmittance not greater than the values listed in Table 9.36.2.7-C-2025 for the applicable heating-degree day category. (See Note A-9.36.2.7.(1) and (3).)

Table [9.36.2.7.-C] 9.36.2.7.-B
Overall Thermal Transmittance of Skylights
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([3] 2)

Component	Heating Degree-Days of *Building* Location, (1) in Celsius Degree-Days					
	Zone 4 < 3000	Zone 5 3000 to 3999	Zone 6 4000 to 4999	Zone 7A 5000 to 5999	Zone 7B 6000 to 6999	Zone 8 ≥ 7000
	Maximum Overall Thermal Transmittance, W/(m^2×K)					
Skylights	2.92	2.92	2.75	2.75	2.41	2.41

Note to Table [9.36.2.7.-C] 9.36.2.7.-B:

(1) See Article 1.1.3.1.

[4] 3) Except for site-assembled or site-glazed factory-made fenestration products, curtain wall construction, and site-built windows and glazed doors that are tested in accordance with Sentence 9.36.2.2.(3), site-built windows and glazed doors need not comply with Sentence (1), provided they are constructed in accordance with one of the options presented in Table 9.36.2.7.-D for the applicable climate zone. (See Note A-9.36.2.7.(4).)

Table [9.36.2.7.-D] 9.36.2.7.-C
Compliance Options for Site-built Windows and Glazed Portion of Doors
Forming Part of Sentence [9.36.2.7.] 9.36.2.7.([4] 3)

Component	Description of Component	Compliance Options							
		Climate Zones 4 and 5			Climate Zones 6 and 7A			Climate Zones 7B and 8	
		≤ 3999 HDD			4000 to 5999 HDD			≥ 6000 HDD	
		1	2	3	1	2	3	1	2
Frame	non-metallic	✓	✓	—	✓	✓	—	✓	✓
	thermally broken metallic	—	—	✓	—	—	✓	—	—
Glazing	double	—	✓	—	—	—	—	—	—
	triple	✓	—	✓	✓	✓	✓	✓	✓
	argon-filled	—	✓	—	✓	—	✓	—	✓
Low-e coating	none	✓	—	—	—	—	—	—	—
	number of panes with ≤ 0.10	—	≥ 1	—	—	—	—	≥ 2	—
	number of panes with ≤ 0.20	—	—	2	≥ 1	2	≥ 2	—	≥ 2
Spacer	size, mm	12.7	—	12.7	≥ 12.7	12.7	≥ 12.7	≥ 12.7	≥ 12.7
	non-metallic	—	✓	—	—	—	—	—	—

[5] 4) Glass block assemblies separating *conditioned space* from unconditioned space or the exterior shall have

[a] a) an overall thermal transmittance of not more than 2.9 W/(m^2×K), and

[b] b) a total aggregate area of not more than 1.85 m^2.

[6] 5) One door separating a *conditioned space* from an unconditioned space or the exterior is permitted to have an overall thermal transmittance up to 2.6 W/(m^2×K).

[7] 6) Storm windows and doors need not comply with Sentence (1).

[8] 7) Vehicular access doors separating a *conditioned space* from an unconditioned space

or the exterior shall have a nominal thermal resistance of not less than 1.1 (m^2×K)/W.

[9] 8) Access hatches separating a *conditioned space* from an unconditioned space shall be insulated to a nominal thermal resistance of not less than 2.6 (m^2×K)/W.

[9.36.5.3.] 9.36.5.3. Compliance

(See Note A-9.36.5.3.)

[1] 1) The performance compliance calculations shall determine the annual energy consumption of the proposed house and the house energy target of a reference house in accordance with

[a] a) this Subsection, or

[b] b) the EnerGuide Rating System, version 15, and Sentence (2).

(See Note A-9.36.5.3.(1).)

[2] 2) The annual energy consumption of the proposed house shall not exceed the house energy target of the reference house. (See Note A-9.36.5.3.(2).)

[3] 3) In establishing the house energy target, *building* components, systems and assemblies shall be accounted for in accordance with the prescriptive requirements of Subsections 9.36.2. to 9.36.4. for the climate zone under consideration.

[4] 4) In establishing the annual energy consumption, *building* components, systems and assemblies that are addressed in the scope of the prescriptive requirements of Subsections 9.36.2. to 9.36.4. shall be accounted for for the climate zone under consideration.

[5] 5) Where the construction techniques or *building* components, systems or assemblies used are more energy-efficient than those prescribed by the prescriptive requirements, the performance compliance calculations are permitted to take this increased performance level into account in the determination of the annual energy consumption, provided it can be quantified and is not dependent on occupant interaction.

[6] 6) Both the proposed and reference houses shall be modeled using the same climatic data, *soil* conditions, operating schedules in Article 9.36.5.4. and temperature set-points.

[7] --) Where a cooling system is not installed in the proposed house, or the cooling loads are not determined in accordance with CSA F280-12, "Determining the required capacity of residential space heating and cooling appliances," the peak cooling load shall be modeled for both the proposed and reference houses by using additional models with appropriately sized space-cooling equipment serving all *conditioned spaces*. (See Note A-9.36.5.3.(7).)

[8] --) The proposed house described in Sentence (7) shall have

[a] --) a peak cooling load not greater than ~~110~~100% of the peak cooling load for the reference house, or

[b] --) a design cooling intensity not greater than ~~4.5~~10 W/m^3.

Note A-9.36.5.3.(7). Peak Cooling Load.

The term "peak cooling load" refers to the highest hourly-averaged rate of mechanical cooling required to maintain the building or house at the cooling set-point temperature over the course of the year. The peak cooling load must reflect the rate at which heat is extracted from the conditioned space and not the rate of energy consumption of any cooling equipment. Some modeling software only reports peak cooling loads when the building or house model is configured with an air conditioner; in such cases, the model should include air-conditioning for the purpose of

computing the peak cooling load. If the modeling software does not report peak hourly loads, the design cooling load may be used instead.

The peak cooling load criterion is intended to reduce the risk that houses will overheat in the summer as a consequence of the energy reduction measures required by the Code. To meet this goal, in houses without cooling systems, the proposed house must achieve a peak cooling load that is no more than ~~110~~100% that of the reference house or a design cooling intensity of not more than ~~4.5~~10 W/m^3. Even so, this modeling requirement does not guarantee that a house will not overheat, as a reference house complying with Subsection 9.36.5. may nevertheless be prone to overheating in some circumstances. This requirement does not prescribe the installation of cooling systems in new construction.

[9.36.7.3.] 9.36.7.3. Energy Performance Improvement Compliance Calculations

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Impact analysis

This proposed change would restrict the use of windows with a high solar heat gain coefficient (SHGC) to varying degrees in certain climate zones, which may initially result in higher construction costs for some builders. High solar heat gain windows (under the Energy Rating path) generally cost less than the equivalent low SHGC windows. However, it is noted that mid- and low-SHGC glazing options are becoming increasingly available and cost-competitive as demand for this product type increases. As of June 2023, the difference in manufacturer's suggested retail unit price is $100 between low- and high-SHGC windows that are 48 in. × 48 in. in a double pane vinyl casement.

This proposed change would result in a lower operational cost to homeowners by reducing the cost of air-conditioning where cooling systems are installed and by limiting the discomfort of overheating where they are not. This proposed change has the additional benefit of reducing the likelihood of low SEER air conditioners being added or retrofitted by homeowners after closing that would not have been considered in the energy calculation at the time of construction. This situation would represent an increase in energy use in the house as a consequence of the requirements related to glazing selection, which are intended to reduce energy use, and would result in the additional energy use being omitted from the calculations. The National Research Council of Canada (NRC), Natural Resources Canada (NRCan) and Canada Mortgage and Housing Corporation (CMHC), with contributions from 37 companies, studied the impact of using glazing systems with high versus low solar heat gain in the webpage titled, "Low-Solar and High-Solar Gain Glazings" [4]. The results compiled throughout North America and the results for 10 Canadian locations indicated the following:

- High solar heat gain glazing systems offered 13% to 17% energy cost savings compared to conventional windows and offered annual energy cost savings of $117 to $354.
- Low solar heat gain glazing systems offered 8% to 10% energy cost savings compared to conventional windows and offered annual energy cost savings from $71 to $203.

Another study conducted by CanmetENERGY-Ottawa (NRCan) observed that, for a typical window-to-wall ratio, low-SHGC windows reduce the peak cooling load by 0.4 ton to 1 ton depending on the orientation. This translates into a savings of $6 to $15 for each heating period of 24 hours.

As a benefit to builders, this proposed change would help reduce customer discomfort and costly retrofits as a result of customer call-backs. Further, the additional compliance options introduced in the performance path in Article 9.36.5.3. would increase flexibility in compliance for builders by providing three options instead of only one. Anecdotal feedback indicated that the use of the

performance path for compliance often results in net-cost reductions for builders, where the costs of energy modeling are offset by trade-offs in specifications that may not be available under the prescriptive path method.

References

[1] Laouadi A., Bartko M., Gaur A., Lacasse M.A., "Climate Resilience Buildings: Guideline for management of overheating risk in residential buildings," National Research Council, CRBCPI-Y4-10, April 1, 2021, including revisions released on January 10, 2022 and February 16, 2022: nrc-publications.canada.ca/eng/view/ft/?id=9c60dc19-ca18-4f4c-871f-2633f002b95c&dp=2&dsl=en

[2] Association de vitrerie et fenestration du Québec (AVFQ), Building Energy Simulations: Impact of SHGC on the thermal performance of detached houses in different Canadian climate zones, December 2023.

[3] CanmetENERGY Buildings & Renewables Group, Adjusted cooling load requirements, May 2024.

[4] Natural Resources Canada, Low-Solar and High-Solar Gain Glazings, website: https://natural-resources.canada.ca/energy/efficiency/data-research-and-insights-energy-efficiency/housing-innovation/low-solar-and-high-solar-gain-glazings/5139

Enforcement implications

This proposed change can be enforced by the existing Code enforcement infrastructure without additional resources. There are no enforcement implications beyond the practices required to enforce the existing Code provisions.

Who is affected

Designers, engineers, architects, manufacturers, builders, specification writers and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[9.36.2.7.] 9.36.2.7. ([1] 1) [F92-OE1.1]

Intent 1:

To limit the probability that the overall thermal transmittance of fenestration and doors other than skylights and glass block masonry units will be unacceptably high or their energy rating will be unacceptably low, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.2.7.] -- ([2] --) [F95-OE1.1]

Intent 1:

To limit the probability that the maximum solar heat gain coefficient of fenestration and doors will be unacceptably high, which could lead to excessive use of energy for cooling, which could lead to an unacceptable effect on the environment.

[9.36.2.7.] 9.36.2.7. ([3] 2) [F92-OE1.1]

Intent 1:

To limit the probability that the overall thermal transmittance of skylights will be unacceptably high, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.2.7.] 9.36.2.7. ([4] 3) no attributions

Intent 1:

To exempt site-built windows and site-built glazed doors from the requirements stated in Sentence 9.36.2.7.(1), on the basis that constructing them according to the options presented in Table 9.36.2.7.-C will achieve an acceptable energy performance.

[9.36.2.7.] 9.36.2.7. ([4] 3) [F92-OE1.1]

Intent 1:

To limit the probability that the construction of site-built windows and site-built glazed doors will be inadequate to achieve an acceptable energy performance, which could lead to such windows and doors having an unacceptably high overall thermal transmittance, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.2.7.] 9.36.2.7. ([5] 4) [F92-OE1.1]

Intent 1:

To limit the probability that glass block assemblies separating conditioned space from unconditioned space or the exterior will have an unacceptably high overall thermal transmittance or make up too great an area of the separating assembly, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.2.7.] 9.36.2.7. ([6] 5) [F92-OE1.1]

Intent 1:

To allow one exterior door in a dwelling unit to have a higher overall thermal transmittance than permitted by Sentence 9.36.2.7.(1), which would otherwise require all doors to conform to the same maximum overall thermal transmittance requirements, on the basis that some doors, due to their function, cannot easily meet these requirements and some flexibility is needed.

[9.36.2.7.] 9.36.2.7. ([7] 6) no attributions

Intent 1:

To exempt storm windows and doors from the thermal characteristic requirements stated in Sentence 9.36.2.7.(1), on the basis that these types of windows and doors typically cannot achieve the performance levels of other doors due to their function and properties.

[9.36.2.7.] 9.36.2.7. ([8] 7) [F92-OE1.1]

Intent 1:

To allow vehicular access doors to have a higher overall thermal transmittance than permitted in the thermal characteristic requirements of Sentence 9.36.2.7.(1), which would otherwise require all doors to conform to the same maximum overall thermal transmittance requirements, on the basis that some doors, due to their function, cannot easily meet these requirements and some flexibility is needed.

[9.36.2.7.] 9.36.2.7. ([9] 8) [F92-OE1.1]

Intent 1:

To limit the probability that the effective thermal resistance of access hatches will be unacceptably low, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.5.3.] 9.36.5.3. ([1] 1) no attributions

Intent 1:

To explain the aim of the performance compliance calculations.

Intent 2:

To enable compliance with the EnerGuide Rating System as an acceptable alternative to the requirements of Subsection 9.36.5. This is to limit the probability that minor differences between Subsection 9.36.5. and the EnerGuide Rating System will lead to a requirement to prepare two energy models for compliance with Subsection 9.36.5. and the EnerGuide Rating System.

Intent 3:

To permit the use of the automatically generated reference house for compliance with Subsection 9.36.5. when complying with the EnerGuide Rating System, rather than manually modelling the reference building as required in Subsection 9.36.5.

[9.36.5.3.] 9.36.5.3. ([2] 2) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

Intent 1:

To limit the probability that the energy consumption of the proposed building will exceed the energy consumption of the reference building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.5.3.] 9.36.5.3. ([3] 3) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

Intent 1:

To limit the probability that the house energy target of the reference building will not account for energy uses covered by the prescriptive requirements, which could lead to overestimation of the energy used by the reference building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.5.3.] 9.36.5.3. ([4] 4) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

Intent 1:

To limit the probability that the annual energy consumption of the proposed building will not account for energy uses covered by the prescriptive requirements, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to

an unacceptable effect on the environment.

[9.36.5.3.] 9.36.5.3. ([5] 5) [F92,F93,F95,F96,F98,F99,F100-OE1.1]

Intent 1:

To limit the probability that the annual energy consumption of the proposed building will include a credit for construction techniques or building components whose better-than-prescriptive performance cannot be quantified or is dependent on occupant interaction, which could lead to underestimation of the annual energy consumption, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.5.3.] 9.36.5.3. ([6] 6) [F99-OE1.1]

Intent 1:

To limit the probability that different climatic data, soil conditions, schedules and temperature set-points will be used in modeling the proposed and reference houses, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.5.3.] -- ([7] --) [F95,F99-OE1.1]

Intent 1:

To limit the probability that the energy model calculation will not model the energy required for cooling, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.5.3.] -- ([8] --) [F95,F99-OE1.1]

Intent 1:

To limit the probability that the design and construction of the proposed house will lead to a decrease in the rate at which heat is extracted from the conditioned space, which could lead to overheating in the summer, which could lead to excessive use of energy for cooling, which could lead to an unacceptable effect on the environment.

[9.36.7.3.] 9.36.7.3. ([1] 1) no attributions

Intent 1:

To direct Code users to Subsection 9.36.5. for the determination of the envelope performance improvement and overall performance improvements.

[9.36.7.3.] 9.36.7.3. ([2] 3) no attributions

Intent 1:

To permit a reduction in the overall energy performance, building envelope performance and airtightness level requirements of building or dwelling units with a conditioned space equal to or less than 230 m^3 on the basis that they consume less energy.

[9.36.7.3.] 9.36.7.3. ([2] 3) [F90,F91,F92,F93,F95,F96,F98,F99,F100-OE1.1]

Intent 1:

To limit the probability that the overall energy performance, building envelope performance and airtightness level of building or dwelling units containing not more than 230 m^3 of conditioned space will be unacceptably low for each tier, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.7.3.] 9.36.7.3. ([3] 5) [F90,F91,F92,F93,F95,F100-OE1.1]

Intent 1:

To limit the probability that the annual gross space heat loss will not be properly calculated, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.7.3.] 9.36.7.3. ([4] 6) no attributions

Intent 1:

To direct Code users to Article 9.36.5.2. for the determination of the house energy target and the annual energy consumption.

[9.36.7.3.] 9.36.7.3. ([4] 6) [F99-OE1.1]

Intent 1:

To limit the probability that the overall performance improvement is inaccurately determined, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.7.3.] 9.36.7.3. ([5] 7) [F99-OE1.1]

Intent 1:

To limit the probability that the envelope performance improvement is inaccurately determined, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[9.36.7.3.] 9.36.7.3. ([6] 8) [F90,F91,F92,F93,F95,F96,F98,F99,F100-OE1.1]

Intent 1:

To limit the probability that the percent house energy target will not be properly calculated, which could lead to overestimation of the percent house energy target, which could lead to excessive use of energy for heating and cooling, which could lead to an unacceptable effect on the environment.

[9.36.7.3.] 9.36.7.3. ([7] 9) [F90,F91,F92,F93,F95,F100-OE1.1]

Intent 1:

To limit the probability that the energy model calculation will not account for air leakage through the building envelope, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

Submit a comment

Proposed Change 2056

Code Reference(s):	**NECB20 Div.B 3.1.1.5. (first printing)** **NECB20 Div.B 3.1.1.7.(4) (first printing)** **NECB20 Div.B 8.4.2. (first printing)** **NECB20 Div.B 8.4.3.9. (first printing)**
Subject:	Performance Compliance - Other
Title:	Energy Modeling Software Requirements
Description:	This proposed change updates the edition year of ANSI/ASHRAE 140, "Method of Test for Evaluating Building Performance Simulation Software," to 2023 and adds new Articles on acceptance criteria for energy modeling software and on exceptional calculation methods.
Related Code Change Request(s):	CCR 2158
Related Proposed Change(s):	PCF 2067

This change could potentially affect the following topic areas:

- [ ] Division A
- [ ] Division C
- [ ] Building operations
- [x] Small Buildings
- [ ] Fire Protection
- [ ] Accessibility
- [ ] Building Envelope
- [ ] Heating, Ventilating and Air Conditioning
- [x] Division B
- [ ] Design and Construction
- [ ] Housing
- [x] Large Buildings
- [ ] Occupant safety in use
- [ ] Structural Requirements
- [x] Energy Efficiency
- [ ] Plumbing
- [ ] Construction and Demolition Sites

Problem

The 2020 edition of the National Energy Code of Canada for Buildings (NECB) references ANSI/ASHRAE 140-2011, "Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs," to identify acceptable software to be used for carrying out compliance calculations for energy modeling.

The 2011 edition of this referenced standard includes test cases for the evaluation of building performance software, but does not include information about the acceptable software results for those test cases. This means that authorities having jurisdiction would only require that the software was capable of running the tests, but not that the results were within an acceptable range. The absence of pass/fail criteria in the 2011 edition of the standard presents a gap in the Code for authorities having jurisdiction when they determine if the software used to demonstrate Code compliance complies with the standard.

In addition, the Code uses inconsistent terminology when referring to energy modeling software, which may cause confusion for Code users.

Justification

Referencing the 2023 edition of ANSI/ASHRAE 140, "Method of Test for Evaluating Building Performance Simulation Software," would address the problem by providing pass/fail criteria by which compliance of the software with the standard may be determined.

The 2023 edition of ANSI/ASHRAE 140:

- Introduces acceptance criteria for determining if the energy modeling software is suitable for use by a citing authority having jurisdiction (AHJ).
- Adds informative sections for AHJs on developing the acceptance criteria.

The 2023 edition also includes test suites that are new or have been updated since the 2011 edition in the following addenda[1]:

- ground coupled slab-on-grade analytical verification tests (ANSI/ASHRAE 140-2011, Addendum *a*),
- air-side HVAC equipment analytical verification tests (ANSI/ASHRAE 140-2014, Addendum *a*),
- building thermal envelope and fabric load tests (ANSI/ASHRAE 140-2017, Addendum *a*), and
- weather drivers tests (ANSI/ASHRAE 140-2020, Addendum *a*).

Consistent use of the term "energy modeling software," as appears in Article 8.4.3.9. of the NECB 2020, would clarify the Code requirements in other provisions that reference this software.

[1] The listed addenda are available at https://www.ashrae.org/technical-resources/standards-and-guidelines/standards-addenda.

PROPOSED CHANGE

[3.1.1.5.] 3.1.1.5. Thermal Characteristics of Building Assemblies

Note A-3.1.1.5. Thermal Characteristics of Building Assemblies.

Thermal characteristics of building assemblies can also be determined through the use of ~~computer simulation models~~energy modeling software.

[3.1.1.7.] 3.1.1.7. Calculation of Overall Thermal Transmittance

[1] 4) Where a component of the *building envelope* is protected by an enclosed unconditioned space, such as a sun porch, enclosed veranda or vestibule, the unconditioned enclosure may be considered to have an *overall thermal transmittance* of 6.25 W/(m^2×K). (See Note A-3.1.1.7.(4).)

Note A-3.1.1.7.(4) Effect of an Unconditioned Space.

The conservative overall thermal transmittance allowed in Sentence 3.1.1.7.(4), which is equivalent to that of a layer of glass, is intended to provide an easy credit under the prescriptive path for any unconditioned space that may be protecting a component of the building envelope.

The value given does not take into account the construction of the enclosure surrounding the unconditioned space; the construction of this enclosure being uncontrolled by this Code, too many variables, such as its size or airtightness, may negate any higher credit that could be allowed. There may be ~~simulation tools~~ energy modeling software under the performance path that can provide a better assessment of the effect of an indirectly heated space, which may be used to advantage when an unheated space is designed to provide significantly better protection than the worst-case scenario assumed here. Vented spaces, such as attic and roof spaces or crawl spaces, are considered to be part of the exterior space; therefore, Sentence 3.1.1.7.(4) does not apply when calculating the overall thermal transmittance of their building envelope components.

[8.4.2.] 8.4.2. Compliance Calculations

[8.4.2.1.] 8.4.2.1. General

[8.4.2.2.] 8.4.2.2. Calculation Methods

[1] 1) Except as provided in Sentence (5), the energy model calculations shall account for the *annual energy consumption* of

[a] a) space-heating equipment,

[b] b) space-cooling equipment,

[c] c) fans,

[d] d) *interior* and *exterior lighting* devices,

[e] e) *service water* heating equipment,

[f] f) pumps,

[g] g) auxiliary HVAC equipment (see Note A-8.4.2.2.(1)(g)),

[h] h) receptacle loads and miscellaneous equipment as per Article 8.4.2.7.,

[i] i) appliances, and

[j] j) elevators and escalators.

[2] 2) The energy model calculations shall be performed for a one-year period (8 760 hours) using time intervals no greater than one hour.

[3] 3) Operating schedules and climatic data input in the energy model shall use a time interval no greater than one hour.

[4] 4) Energy modeling software that~~If a computer program~~ is used for the energy model~~to carry out the compliance~~ calculations~~, the calculation methods employed in the energy model~~ shall conform to

[a] a) the testing requirements for energy modeling software stated in Article 8.4.2.11.,~~ANSI/ASHRAE 140, "Standard Method of Test for the Evaluation of Building Energy Analysis Computer Programs",~~ or

[b] b) an equivalent test method.

[5] 5) Redundant or back-up equipment is permitted to be excluded from the energy model, provided it is equipped with controls that operate the equipment only when the primary equipment is not operating.

[6] --) *Building* components that cannot be modeled by the energy modeling software in Sentence (4) shall be modeled using an exceptional calculation method in accordance with Article 8.4.2.12.

[8.4.2.3.] 8.4.2.3. Climatic Data

[8.4.2.4.] 8.4.2.4. Thermal Mass

[8.4.2.5.] 8.4.2.5. Space Temperature

[8.4.2.6.] 8.4.2.6. Heat Transfer Between Thermal Blocks

[8.4.2.7.] 8.4.2.7. Internal and Service Water Heating Loads

[8.4.2.8.] 8.4.2.8. Building Envelope

[8.4.2.9.] 8.4.2.9. Air Leakage

[8.4.2.10.] 8.4.2.10. HVAC Systems Calculations

[8.4.2.11.] --- Testing of Energy Modeling Software

[1] --) Energy modeling software shall be tested in accordance with ANSI/ASHRAE 140-2023, "Method of Test for Evaluating Building Performance Simulation Software," except for Section 12, and including the following tests described in Sections 6 to 11:

[a] --) weather drivers tests,

[b] --) building thermal envelope and fabric load tests,

[c] --) ground coupled slab-on-grade analytical verification tests,

[d] --) space-cooling equipment performance tests,

[e] --) space-heating equipment performance tests, and

[f] --) air-side HVAC equipment analytical verification tests.

[2] --) For each version of the energy modeling software tested in accordance with ANSI/ASHRAE 140, the following shall be provided:

[a] --) test results demonstrating that the energy modeling software was tested in accordance with Annex A3 and that the values for the "Minimum Number of Range Cases within the Test Group to Pass" given in Table A3-14 were met or exceeded for all test groups,

[b] --) the input files used to generate the test cases, the test results, and the example results from other energy modeling software included in Annexes B8 and B16 for comparison, and

[c] --) the modeler report provided in Annex A2, Attachment A2.8 with Report Blocks A and G completed for any test results exceeding the maximum or falling below the minimum reference values shown in Tables A3-1 to A3-13, and with Report Blocks A and E completed for any omitted test results.

[3] --) The same tested version of the energy modeling software shall be used to model the proposed *building* and the reference *building*.

[8.4.2.12.] --- Exceptional Calculation Methods

[1] --) Where the energy modeling software is not used to model a design, material or device, an exceptional calculation method shall be used that complies with ANSI/ASHRAE 140-2023.

[2] --) Where multiple designs, materials or devices cannot be modeled by the energy modeling software, the energy savings for each shall be calculated separately using the exceptional calculation method, and the sum of the calculated energy savings shall be determined.

[3] --) The sum determined in Sentence (2) shall not constitute more than 50% of the difference between the *building energy target* of the reference *building* and the *annual energy consumption* of the proposed *building*.

[8.4.3.9.] 8.4.3.9. Ice Plants

Note A-8.4.3.9. Heat Recovery from Ice Plants.

Where the energy modeling software does not allow for modeling of ice plants, a water-cooled, double-bundle water chiller with a load profile corresponding to the expected loading on the ice plant is adequate for the purposes of Part 8 and allows the modeling of heat recovery using most types of ~~simulation~~energy modeling software.

The following documents may be helpful in setting a more detailed model using refrigeration equipment rather than a water chiller and modeling the ice sheet itself and its interaction with adjacent components and spaces:

- Zmeureanu, R., E.M. Zelaya and D. Giguère. (2002). Simulation de la consommation d'énergie d'un aréna à l'aide du logiciel DOE-2.1E. ESim 2002 Conference, Montreal.
- Ouzzane, M. et al. Cooling Load and Environmental Measurements in a Canadian Indoor Ice Rink. ASHRAE Transactions, Vol. 112, Pt. 2, Paper no. QC-06-008, pp. 538-545, 2006.
- Sunyé, R. et al. ASHRAE Research Report 1289, Develop and Verify Methods For Determining Ice Sheet Cooling Loads, 2007.
- Teyssedou, G., R. Zmeureanu, and D. Giguère. (2009). Thermal Response of the Concrete Slab of an Indoor Ice Rink. ASHRAE HVAC&R Research, Vol. 15, No. 3, May 2009.

Since ice-making for rinks is often associated with resurfacing activities, which require a significant amount of heated service water, the energy models of the proposed and reference buildings should account for this load.

Impact analysis

This proposed change is expected to be cost neutral. The energy modeler must use software that complies with ANSI/ASHRAE 140, which is no different than the current practice. The additional burden of testing software using the 2023 edition of the

standard rests with the building performance software vendor, many of whom already incurred much of this cost when submitting results during the development of the acceptance criteria.

All major developers of energy modeling software for buildings were invited to participate in the process to determine the acceptance ranges, and many software developers participated. The acceptance ranges were set so that most commonly used software programs are within the ranges, and additional software programs are expected to be within the ranges once software developers address outlying results.

Overall, this approach would encourage building performance simulation software to be more accurate and consistent. No comments were provided during the public review of the new acceptance criteria in ANSI/ASHRAE 140-2023, which reflects the consensus reached within the software and modeling community.

Enforcement implications

Currently, building officials need to confirm that the energy modeling software complies with ANSI/ASHRAE 140 by visiting the website of the energy modeling software vendor. While the vendor needs to provide enough information to allow others to verify that the results meet the criteria set in ANSI/ASHRAE 140, it is not expected that building officials would themselves do this. Instead, third-party certification of software is expected to certify that the software meets the requirements of ANSI/ASHRAE 140-2023.

Who is affected

Energy modelers, energy modeling software vendors, and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[3.1.1.5.] 3.1.1.5. ([1] 1) [F92-OE1.1]

Intent 1:

To limit the probability that the thermal characteristics of building envelope materials will be determined incorrectly, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[3.1.1.5.] 3.1.1.5. ([2] 2) [F92-OE1.1]

Intent 1:

To limit the probability that the thermal characteristics of building envelope materials will be determined incorrectly, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[3.1.1.5.] 3.1.1.5. ([3] 3) [F92-OE1.1]

Intent 1:

To limit the probability that the overall thermal transmittance of fenestration and doors will be determined incorrectly, which could lead to the underestimation of overall thermal transmittance values, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[3.1.1.5.] 3.1.1.5. ([4] 4) [F92-OE1.1]

Intent 1:

To limit the probability that the overall thermal transmittance of fenestration and doors will be determined incorrectly, which could lead to the underestimation of overall thermal transmittance values, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[3.1.1.5.] 3.1.1.5. ([5] 5) [F92-OE1.1]

Intent 1:

To limit the probability that tests to determine the thermal characteristics of building assemblies other than fenestration and doors will be conducted incorrectly or that the thermal characteristics will be improperly determined, which could lead to the underestimation of overall thermal transmittance values, which could lead to excessive thermal transfer through the building envelope, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[3.1.1.7.] 3.1.1.7. ([1] 4) no attributions

Intent 1:

To state the overall thermal transmittance of unconditioned enclosures protecting a building envelope component.

[8.4.2.1.] 8.4.2.1. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that assessment of conformance will be performed incorrectly, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead toexcessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.2.] 8.4.2.2. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the annual energy consumption of the proposed building will not take into account the impact of all components that are addressed by the Code, which could lead to underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.2.] 8.4.2.2. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that the calculations will be performed for a period that is insufficiently long to represent the annual performance or over intervals that are too large to provide enough accuracy in the result, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.2.] 8.4.2.2. ([3] 3) [F99-OE1.1]

Intent 1:

To limit the probability that the schedules and climatic data for the energy model will use intervals that are too large to provide enough accuracy in the result, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.2.] 8.4.2.2. ([4] 4) [F99-OE1.1]

Intent 1:

To direct Code users to Article 8.4.2.11. for the testing requirements for energy modeling software.~~To limit the probability that the calculation methods will not be performed to a level set by an industry-recognized standard, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.~~

Intent 2:

To limit the probability that the calculation methods will not be performed to a level equivalent to an industry-recognized standard, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.2.] 8.4.2.2. ([5] 5) no attributions

Intent 1:

To exempt redundant or back-up equipment whose operation does not impact the building energy consumption from the modeling requirements of Sentence (1).

[8.4.2.2.] -- ([6] --) no attributions

Intent 1:

To direct Code users to Article 8.4.2.12. for the testing requirements for exceptional calculation methods.

[8.4.2.3.] 8.4.2.3. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that inappropriate or insufficient climatic data will be used, which could lead to inaccurate modeling, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.3.] 8.4.2.3. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that inappropriate, insufficient or incomplete climatic data will be used, which could lead to inaccurate modeling, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.4.] 8.4.2.4. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the effects of thermal mass will not be accounted for in the energy model, which could lead to inaccurate modeling, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.5.] 8.4.2.5. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the model will not perform a dynamic calculation of space temperatures that accounts for all effects, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.6.] 8.4.2.6. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the model will not account for adjacent thermal blocks with significant temperature differences, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.6.] 8.4.2.6. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that heat transfer calculation between thermal blocks not fully separated by solid partitions or walls will use an inappropriate value of equivalent heat transfer coefficient, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.7.] 8.4.2.7. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the model will not account for all internal and service water heating loads that affect the energy performance, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.7.] 8.4.2.7. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that the sensible and latent loads will not be accounted for in the energy model, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the

energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.7.] 8.4.2.7. ([3] 3) [F99-OE1.1]

Intent 1:

To limit the probability that the interior loads will not be properly adjusted for each time interval based on the appropriate schedule, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.7.] 8.4.2.7. ([4] 4) [F99-OE1.1]

Intent 1:

To limit the probability that the calculation of sensible loads due to lights will not take into account all effects, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.7.] 8.4.2.7. ([5] 5) [F99-OE1.1]

Intent 1:

To limit the probability that other equipment located within a conditioned space that affect the energy performance of the building will not be accounted for in the energy model, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the energy model will not account for heat transfer through all relevant building envelope elements for each thermal block, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

Intent 2:

To limit the probability that the dynamic response due to thermal characteristics of the building envelope assemblies will not be accounted for in the energy model, which could lead to inaccuracy of the model, which could lead to overestimation of the

energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that the effect of solar radiation on heat transfer through walls and roofs will not be accounted for in the energy model, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([3] 3) [F99-OE1.1]

Intent 1:

To limit the probability that the heat transfer through fenestration, including skylights, will not be appropriately accounted for in the energy model, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([4] 4) [F99-OE1.1]

Intent 1:

To limit the probability that the impacts of solar radiation through fenestration on the heating and cooling loads will not be appropriately accounted for, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([5] 5) [F99-OE1.1]

Intent 1:

To limit the probability that the insulated surface area of roof assemblies will be incorrectly determined, which could lead to incorrect modeling of the reference building, which could lead to overestimation of the energy used by the reference building, which could lead to excessive consumption of energy by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([6] 6) [F99-OE1.1]

Intent 1:

To limit the probability that the insulated surface area of exterior above-ground wall assemblies will be incorrectly determined, which could lead to incorrect modeling of the reference building, which could lead to overestimation of the energy used by the reference building, which could lead to excessive consumption of energy by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([7] 7) [F99-OE1.1]

Intent 1:

To limit the probability that the insulated surface area of above-ground exterior floor assemblies will be incorrectly determined, which could lead to incorrect modeling of the reference building, which could lead to overestimation of the energy used by the reference building, which could lead to excessive consumption of energy by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([8] 8) [F99-OE1.1]

Intent 1:

To limit the probability that the insulated surface areas of roof assemblies in contact with the ground will be incorrectly determined, which could lead to incorrect modeling of the reference building, which could lead to overestimation of the energy used by the reference building, which could lead to excessive consumption of energy by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([9] 9) [F99-OE1.1]

Intent 1:

To limit the probability that the insulated surface areas of wall assemblies in contact with the ground will be incorrectly determined, which could lead to incorrect modeling of the reference building, which could lead to overestimation of the energy used by the reference building, which could lead to excessive consumption of energy by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.8.] 8.4.2.8. ([10] 10) [F99-OE1.1]

Intent 1:

To limit the probability that the insulated surface area of floor assemblies in contact with the ground will be incorrectly determined, which could lead to incorrect modeling of the reference building, which could lead to overestimation of the energy used by the reference building, which could lead to excessive consumption of energy by the

proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.9.] 8.4.2.9. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the model will not account for air leakage through the building envelope, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.9.] 8.4.2.9. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that the adjusted air leakage rate will be inappropriately calculated, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.10.] 8.4.2.10. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that the HVAC system of the reference building will be incorrectly modeled, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.10.] 8.4.2.10. ([2] 2) [F99-OE1.1]

Intent 1:

To limit the probability that energy model will not take into account the effects of terminal devices, secondary and primary systems, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.10.] 8.4.2.10. ([3] 3) [F99-OE1.1]

Intent 1:

To limit the probability that the compliance calculations for secondary systems will not take into account all relevant factors, which could lead to inaccuracy of the

model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.10.] 8.4.2.10. ([4] 4) [F99-OE1.1]

Intent 1:

To limit the probability that the energy model will not take into account how many hours the primary system, secondary system and terminal device loads are not met, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.10.] 8.4.2.10. ([5] 5) [F99-OE1.1]

Intent 1:

To limit the probability that the energy model will not take into account the efficiency and capacity of HVAC equipment as a function of part load and all relevant parameters, which could lead to inaccuracy of the model, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.11.] -- ([1] --) [F99-OE1.1]

Intent 1:

To limit the probability that the calculation methods will not be performed to a level set by an industry-recognized standard, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

Intent 2:

To limit the probability that the testing of energy modeling software will not include all applicable sections of the testing standard, which could lead to inaccuracy of testing, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.11.] -- ([2] --) [F99-OE1.1]

Intent 1:

To limit the probability that the energy modeling software will not satisfy the criteria

set by an industry-recognized standard, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.11.] -- ([3] --) [F99-OE1.1]

Intent 1:

To limit the probability that different versions of the energy modeling software will be used for modeling the proposed and reference building, which could lead to underestimation of the energy used by the proposed building or overestimation of the energy used by the reference building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.12.] -- ([1] --) [F99-OE1.1]

Intent 1:

To limit the probability that an exceptional calculation method will not be performed to a level set by an industry-recognized standard, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.12.] -- ([2] --) [F99-OE1.1]

Intent 1:

To limit the probability that energy savings for multiple designs, materials, or devices will not be calculated separately, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.2.12.] -- ([3] --) [F99-OE1.1]

Intent 1:

To limit the probability that the sum of the results from the exceptional calculations for multiple designs, materials or devices will be more than 50% of the difference between the building energy target and the annual energy consumption, which could lead to overestimation of the energy used by the reference building or underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

[8.4.3.9.] 8.4.3.9. ([1] 1) [F99-OE1.1]

Intent 1:

To limit the probability that ice-making loads will be inappropriately set, which could lead to inaccuracy of the model, which could lead to underestimation of the energy used by the proposed building, which could lead to excessive use of energy, which could lead to an unacceptable effect on the environment.

Submit a comment

Proposed Change 2067

Code Reference(s):	**NECB20 Div.C 2.2.2. (first printing)**
Subject:	Performance Compliance - Other
Title:	Documentation on Exceptional Calculation Methods
Description:	This proposed change establishes requirements for documentation on exceptional calculation methods used when energy modeling software cannot be used.
Related Proposed Change(s):	PCF 2056

This change could potentially affect the following topic areas:

- [ ] Division A
- [x] Division C
- [ ] Building operations
- [x] Small Buildings
- [ ] Fire Protection
- [ ] Accessibility
- [ ] Building Envelope
- [ ] Heating, Ventilating and Air Conditioning
- [ ] Division B
- [x] Design and Construction
- [ ] Housing
- [x] Large Buildings
- [ ] Occupant safety in use
- [ ] Structural Requirements
- [x] Energy Efficiency
- [ ] Plumbing
- [ ] Construction and Demolition Sites

Problem

As part of the update to referenced documents, the 2023 edition of ANSI/ASHRAE 140, "Method of Test for Evaluating Building Performance Simulation Software," is recommended to appear in the National Energy Code of Canada for Buildings (NECB). Moreover, PCF 2056 proposes to add Article 8.4.2.12. in Division B of the NECB on exceptional calculation methods that can be used when energy modeling software is not used to model a design, material or device. Failing to update the relevant Division C requirements could result in difficulty for authorities having jurisdiction when enforcing the proposed Division B requirements for exceptional calculation methods.

Justification

This proposed change provides a list of documentation that would help authorities having jurisdiction to administer the new requirements when exceptional calculation methods are used to demonstrate compliance.

PROPOSED CHANGE

[2.2.2.] 2.2.2. Information Required for Proposed Work

[2.2.2.1.] 2.2.2.1. General Information Required

[2.2.2.2.] 2.2.2.2. Design Calculations and Analysis

[2.2.2.3.] 2.2.2.3. Documentation on the Building Envelope

[2.2.2.4.] 2.2.2.4. Documentation on Lighting Systems

[2.2.2.5.] 2.2.2.5. Documentation on HVAC Systems

[2.2.2.6.] 2.2.2.6. Documentation on Service Water Heating Systems

[2.2.2.7.] 2.2.2.7. Documentation on Electrical Power Systems and Motors

[2.2.2.8.] 2.2.2.8. Documentation Requirements for Building Performance Compliance

[2.2.2.9.] --- Documentation Requirements for Exceptional Calculation Methods

[1] --) Where an exceptional calculation method is used, the following documentation shall be provided:

[a] --) theoretical and empirical information that verifies the method's accuracy,

[b] --) step-by-step documentation of the exceptional calculation method performed, having enough detail to allow the results to be reproduced,

[c] --) copies of all spreadsheets or other tools used to perform the calculations,

[d] --) a sensitivity analysis of energy consumption where each input parameter that is estimated is varied from half to double the value assumed,

[e] --) evidence that calculations are performed on a time-step basis that are consistent with the energy modeling software and, where

appropriate, informed by outputs from the energy modeling software, and

[f] --) the *building energy target* of the reference *building* and the *annual energy consumption* of the proposed *building* calculated with and without the exceptional calculation method.

Impact analysis

This proposed change is expected to be cost neutral and complements PCF 2056, which proposes that the exceptional calculation method used by the energy modeler comply with ANSI/ASHRAE 140-2023, which is no different than the current practice and is also proposed to be required for energy modeling software.

Enforcement implications

The energy modeler would provide the information to certify that the exceptional calculation method meets the requirements of ASHRAE 140-2023.

Who is affected

Energy modelers, energy modeling software vendors, and building officials.

Submit a comment

Proposed Change 1872

Code Reference(s):	**NFC20 Div.B 2.8.2.11. (first printing)** **NFC20 Div.B 5.6.4. (first printing)**
Subject:	Encapsulated Mass Timber Construction
Title:	Revisions to Protection Requirements for EMTC During Construction
Description:	This proposed change revises the minimum requirements for and exceptions to the encapsulation of mass timber elements.
Related Code Change Request(s):	CCR 1381
Related Proposed Change(s):	PCF 1870, PCF 1879, PCF 1963

This change could potentially affect the following topic areas:

- ☐ Division A
- ☐ Division C
- ☐ Building operations
- ☐ Small Buildings
- ☑ Fire Protection
- ☐ Accessibility
- ☐ Building Envelope
- ☐ Heating, Ventilating and Air Conditioning
- ☑ Division B
- ☑ Design and Construction
- ☐ Housing
- ☑ Large Buildings
- ☐ Occupant safety in use
- ☐ Structural Requirements
- ☐ Energy Efficiency
- ☐ Plumbing
- ☑ Construction and Demolition Sites

Problem

Article 5.6.4.3. of Division B of the 2020 edition of the National Fire Code of Canada (NFC) provides requirements related to the type and degree of encapsulation protection of mass timber elements necessary in encapsulated mass timber construction (EMTC) while the building is under construction. In particular, these requirements mandate that at least 80% of the underside of mass timber floor assemblies be protected by some minimum level of encapsulation (e.g., using one layer of 12.7 mm thick Type X gypsum board).

This proposed change is related to PCFs 1870 and 1963 from the national public review of proposed changes to the 2020 National Model Codes (which ran from October 24, 2023 until December 18, 2023), which described proposed changes to Articles 3.1.6.4.

and 3.1.6.6., respectively, of Division B of the 2020 edition of the National Building Code of Canada (NBC). These NBC Articles address the requirements for and exceptions to the encapsulation of mass timber elements in finished buildings of EMTC. In particular, the Articles permit from 10% to 25% of the surface of mass timber ceilings to be left exposed within a suite.

PCFs 1870 and 1963 included proposed changes, based on several research studies involving mass timber compartment fire scenarios, to allow 100% of the surface of mass timber ceilings within a suite to be exposed.

After considering the comments from the public on PCFs 1870 and 1963, it was recommended that these proposed changes, with some minor modifications, be included in the NBC 2025.

Consequently, there is a need to propose the alignment of the requirements for mass timber protection for ceilings during construction in NFC Article 5.6.4.3. and allow ceilings to be left exposed where no such encapsulation is required in the finished building.

Further, during current EMTC projects, difficulties have been encountered when reconciling the requirements of NFC Article 5.6.4.3. during construction with measures to control moisture and mould affecting the encapsulated wood elements, as well as the materials used for encapsulation.

In aligning the provisions of the NBC and NFC to permit 100% exposed mass timber ceilings during construction, the following impacts of not encapsulating the ceilings must be considered:

- the risk of fire spread to more than one storey during a fire, and
- the need to ensure emergency responders and firefighters can access the fire floor.

Critical elements for reducing and limiting these impacts include:

- development of and compliance with a construction fire safety plan, which may include:
    - managing combustible materials on site,
    - maintaining access to exit routes from and ingress routes to the fire floor, and
    - providing site security (e.g., to reduce the threat of arson) and monitoring of fire hazards.
- reducing or protecting the physical pathways along which fire spreads within a storey or between storeys.

Experience has shown that light wood-frame buildings under construction constructed are highly susceptible to significant loss or collapse in a fire, especially when the passive and active fire protection measures that have been planned for the finished building are not in place. Recent fire research on mass timber buildings using both compartment and construction fire scenarios indicates that mass timber buildings are more structurally resistant to the effect of fire and more difficult to ignite and sustain combustion, especially given the reduced fuel load on a construction site.

Justification

PCFs 1870 and 1963 include proposed changes, based on the most recent fire research, to allow 100% of the underside of each mass timber floor assembly within a suite to be left exposed in the finished building, expanding the NBC provisions related to encapsulation of mass timber elements within buildings permitted to be of EMTC.

The rationales supporting both PCFs 1870 and 1963 explain how recent fire research was performed that supports the proposed changes to the permitted percentage exposure of mass timber elements. With that, this proposed change revises the degree of protection of mass timber ceiling elements in EMTC while a building is under construction. This proposed change would harmonize the NFC requirements with those of the NBC for finished buildings of EMTC.

The NRC report titled, "Large-Scale Fire Tests of a Mass Timber Building Structure for MTDFTP" [1], describes a total of five mass timber compartment fire tests in a large two-storey structure that included varying amounts of exposed mass timber wall, ceiling, floor, beam and column surfaces. Two of the five fire tests used construction site fire scenarios with different levels of fuel loads. Test 3 was conducted in a small (3.2 m × 7.0 m × 3.0 m) compartment on the second storey with a metal garbage can containing a wood crib fuel load, while Test 4 was run in a larger compartment (7.1 m × 7.5 m × 3.0 m), again on the second storey with a more severe moveable fuel load of wood cribs and unprotected light wood-frame partition walls. These relatively small compartments represented a severe fire scenario from the point of view of heat re-radiation between mass timber surfaces and other combustible surfaces, which is a critical aspect for the continued burn of the mass timber surfaces once the movable fuel load is consumed. The window openings of the compartments, located within the protected light frame steel exterior walls, provided a ventilation condition in which a longer fire duration and confinement led to higher plumes being ejected through the openings. This ventilation condition represented a more severe fire scenario compared to an open floor area undergoing construction. Table 1 provides a summary of the tests.

Table 1. Summary of Mass Timber Demonstration Fire Test Program (MTDFTP) Construction Site Fire Compartment Test Configurations

Test No.	Description	Exposed Mass Timber Surfaces	Percent of Exposed Mass Timber	Results
3	Construction site: Garbage bin fire source	CLT floor	100%	The garbage bin fire grew slowly, causing a flashover at 23 min. The fire plumes exiting from the window were short lived for only 1 min, reaching a peak height of 6 m for only a few seconds. No flames were visible on the CLT ceiling, wall or floor by 25 min. By 30 min, the temperatures in the compartment dropped to below 160°C. The remaining debris in the garbage bin was completely consumed by 35 min.
		CLT ceiling	100%	
		CLT exit stair wall	16% of total perimeter wall area	

4	Construction site: Wood crib and light wood-framing fire source	CLT floor	100%	The fire took approximately 8 min to fully involve the compartment, followed by a 10-min period of fully developed burning with plumes exiting from the windows, reaching over 6 m high. The fire started to decay at 18 min when most of the added fuel was consumed or had fallen onto the floor. The flaming combustion was quickly reduced on the mass timber elements and the fire plumes ceased to exit from the openings by 19 min. As the fire continued to decay, visible flaming on the mass timber elements mostly ceased after 30 min. The compartment temperatures decreased to 300–400°C at 60 min. However, the fire did not reach full extinguishment: the floor remained glowing, the mass timber elements exhibited intermittent small flames in the joints and junctions, and the compartment temperatures ascended to 400–600°C by the end of the test. Due to the smoke being blown towards the occupied buildings on the campus, the test had to be terminated at 148 min.
		DLT ceiling	100%	
		Glulam beams and columns	25% of total perimeter wall area	

Both fire test scenarios had 100% of the ceilings exposed, yet both design fires reached the decay phase within 60 min with no fire department intervention which, in a real construction scenario, would occur following site personnel detection. These results could suggest that other fire safety measures may be an option to encapsulation during construction while appropriately reducing the risk of fire spread to more than one storey.

Consideration of the Fire Safety Concepts Tree

The new fire safety strategies proposed in PCF 1872 for EMTC buildings are built upon, supplement, or provide options to the existing fire safety strategies in NFC Subsections 5.6.1., 5.6.3. and 5.6.4. Overall, these combined fire protection strategies for construction and demolition sites provide a holistic and reliability-structured approach to limit the escalation of fire and have generally been developed in the context of the Fire Safety Concepts Tree (FSCT) described in NFPA 550, "Guide to the Fire Safety Concepts Tree." The FSCT provides a structured means to examine fire safety strategies in a risk reduction context, and in consideration of the reliability of sets of measures (for more details, see Figure 4.3 in NFPA 550).

Two key objectives of the FSCT are:

1. Prevent fire ignition: reduce the probability of fire occurring
2. Manage fire impact: reduce the consequence of the fire

Table 2 categorizes and annotates select NFC provisions relative to the objectives and sub-objectives of the FSCT.

Table 2. NFC Provisions (Existing and Proposed) Relative to the Fire Safety Concepts Tree

FSCT Objective and Sub-objective(s), as applicable	**Mitigation Strategy Proposed to be Examined (NFC provision, existing or proposed)**(1)
1. Prevent Fire Ignition	

Control Heat Energy Sources	5.6.1.7. Hot Surface Applications 5.6.1.8. Ignition Sources 5.6.1.9. Building Services at Demolition Sites 5.6.1.14. Watch 5.6.1.15. Smoking Restrictions 5.6.3.2. Smoking Restrictions **(MR+MT)** 5.6.3.8. Site Security **(MR+MT)**
Control Source-Fuel Interactions	5.6.1.3. Fire Safety Plan 5.6.1.8. Ignition Sources 5.6.1.10. Fuel Supply Installation 5.6.1.14. Watch 5.6.1.18. Storage and Use of Dangerous Goods 5.6.1.19. Temporary Enclosures 5.6.3.8. Site Security **(MR+MT)**
Control Fuel	5.6.1.18. Storage and Use of Dangerous Goods 5.6.1.20. Disposal of Combustible Refuse 5.6.3.4. Disposal of Combustible Refuse **(MR+MT)** 5.6.4.7.-2025 Indoor Storage of Combustible Materials **(MT-p)**
2. Manage Fire Impact	
Manage Fire — Control Combustion Process	5.6.4.7.-2025 Indoor Storage of Combustible Materials **(MT-p)**
Manage Fire — Suppress Fire	5.6.1.4. Access for Firefighting 5.6.1.5. Portable Extinguishers 5.6.1.6. Standpipe Systems 5.6.3.3. Site Identification **(MR+MT)** 5.6.3.5. Water Supply **(MR+MT)** 5.6.3.6. Hydrant Access **(MR+MT)** 5.6.4.2. Standpipe Installation **(MT-e)** 5.6.4.6.-2025 Progressive Sprinklering **(MT-p)**
Manage Fire — Control Fire by Construction	5.6.4.4.-2025 Protective Encapsulation **(MT-e)** 5.6.4.5.-2025 Alternative Protection Measures **(MT-p)**
Manage Exposed — Limit Amount Exposed	5.6.1.2. Measures to Mitigate Fire Spread to Adjacent Buildings
Manage Exposed — Safeguard Exposed	5.6.1.12. Fire Separations in Partly Occupied Buildings 5.6.1.13. Protection during Shutdown 5.6.1.16. Provision for Egress 5.6.1.17. Fire Warning 5.6.3.7. Construction Access **(MR+MT)** 5.6.4.3.-2025 Measures to Reduce the Risk of Fire Spread Between Storeys **(MT-p)**

Note to Table 2:

(1) The abbreviations used in the table have the following meanings:

MR+MT = midrise and mass timber

MT-e = mass timber — existing

MT-p = mass timber — proposed

Organization of mitigation strategies based on the FSCT allows for consideration of the holistic approach to control fire initiation (ignition), growth and spread. These strategies can also be considered in the context of degrees of reliability in limiting fire escalation. For example, certain strategies limit the probability of fire initiation; however, where ignition occurs, additional measures then limit early fire growth. The probability of fire escalation is reduced at each stage of fire development by individual or groups of strategies. The proposed requirements build upon or provide options to the existing strategies to more specifically address the fire hazards associated with mass timber building construction and demolition sites.

Proposed Article 5.6.4.3.-2025 on Measures to Reduce the Risk of Fire Spread Between Storeys

This proposed Article addresses the reduction of risk of fire spread to more than one storey and includes a reference to both prescriptive and performance-based approaches applicable to all EMTC buildings under construction.

This proposed Article is analogous to the current NFC Article 5.6.1.2. for measures to mitigate fire spread to adjacent buildings, but includes an explicit prescriptive path as well. This proposed Article allows for the protection and hazard management approaches in Articles 5.6.4.4. to 5.6.4.7.-2025, while also allowing for the option of a fire risk assessment being conducted to determine the level of fire protection required on the site.

The proposed accompanying Note provides recommendations related to the professionals conducting the risk assessment.

Proposed Revision to Sentence 5.6.4.3.(2) (Now 5.6.4.4.(2)-2025) on Contiguous Storeys

A minor editorial revision is also proposed to clarify the intent of the existing requirement in Sentence 5.6.4.4.(2)-2025 regarding the four uppermost storeys.

Because this proposed change to the NFC aligns the requirements with the proposed changes to the NBC in PCFs 1870 and 1963, builders would not need to encapsulate the underside of floors during construction, only to remove the encapsulation when the building is finished, as would be permitted in the NBC as a result of PCFs 1870 and 1963.

Proposed Revision to Sentence 5.6.4.3.(3) (Now 5.6.4.4.(3)-2025) on Encapsulation Material

This minor revision aligns the existing provision on expanding the application methods for gypsum board encapsulation materials with the proposed changes to the NBC as a result of PCF 1963.

Proposed Article 5.6.4.5.-2025 on Alternative Protection Measures

Proposed Article 5.6.4.5.-2025 introduces an alternative to the requirements described in Clause 5.6.4.4.(1)(a)-2025, for protective encapsulation, and in Article 5.6.4.6.-2025, for progressive sprinklering. Article 5.6.4.5.-2025 introduces new fire protection measures to address safety during construction. These new measures are included in the following provisions:

- Sentence (2): the proposed measures for the protection of openings through

floor assemblies intend to limit the potential for fire spread through the openings to upper storeys for a minimum of 30 min. This 30-min value aligns with the 15-min fire performance required of fire block materials (see NBC Article 3.1.11.7.), wherein a 12.7 mm thick gypsum board and a 12.5 mm thick phenolic bonded plywood board are each deemed to remain in place and prevent the passage of flames for at least 15 min under standard fire exposure. The accompanying Note also explains that large openings may require additional fire protection.

- Sentence (3): the protection of perimeter joints between the edge of floor assemblies and exterior walls to limit the potential for fire spread through the joint to upper storeys.
- Sentences (4) and (5): the installation of hose stations with hose lines on standpipe systems for use in extinguishing or controlling any fires that may occur.
- Sentences (6) and (7): a person to conduct a fire watch on all storeys at certain times during the workday and afterwards to ensure the exits are kept clear and ensure the fire safety plan is followed. An explanatory Note provides recommendations regarding the knowledge and skill level of the person conducting the watch and considerations to be addressed by the construction fire safety plan, if necessary, such as the scheduled intervals of supervision of the site and the overall construction works during nonworking hours.

Proposed Sentence 5.6.4.5.(8)-2025 on Sequence of Implementation of Alternative Fire Protection Measures

Proposed Sentence 5.6.4.5.(8)-2025 is intended to be applied in conjunction with the other proposed requirements for protection described in that Article.

This involves a different approach than the current permission that allows the upper four unprotected contiguous storeys, in Article 5.6.4.4.-2025 and proposed Article 5.6.4.6.-2025. With that, once the fifth storey ceiling is installed, all storeys, including the first four storeys would then be required to use the alternative protection measures.

Proposed Article 5.6.4.6.-2025 on Progressive Sprinklering

Proposed Article 5.6.4.6.-2025 introduces an alternative to the requirements described in Clauses 5.6.4.4.(1)(a), (c) and (d)-2025 for protective encapsulation and in Article 5.6.4.5.-2025 for alternative protection measures. Proposed Article 5.6.4.6.-2025 introduces an alternative approach to the passive fire protection requirements by providing for an operational automatic sprinkler system that is installed progressively during construction in buildings of EMTC.

Proposed Article 5.6.4.7.-2025 on Indoor Storage of Combustible Materials

This proposed Article aims to manage the amount of combustible materials in discrete piles of limited sizes, as well as place restrictions on the relative locations of these piles. This provision aims to reduce the potential for fire spreading to multiple piles or from other ignition sources, without affecting the safe egress of occupants and while allowing for safe firefighting staging tactics.

Sentence (1): In line with current practices, the proposed limit on footprint area of an individual pile of combustible materials is representative of a standard wooden crate size (1.2 m × 2.4 m) used to transport materials.

Clause (2)(a): The proposed 3 m clearance between storage of combustible materials on a storey and the outer edge of the floor assembly has been established based on a study involving a radiant heat transfer analysis from the flame extension of the fire plume from a fire on the storey directly below the storey containing the storage.

The analysis assumed a vertical exposing plane on the upper storey, perpendicular to the slab edge, 20 m in length and extending the full 4 m storey height to represent the plume flame extension from below, reaching to and beyond the next storey above. Testing and studies of flame extension from openings in a compartment enclosure has shown a reduction of flame temperature away from the opening as a function of the horizontal distance, as well as a reduced emissivity as a function of the flame depth measured from the plane of the wall. A sensitivity study was conducted examining the radiant heat emissive power of the 20 m × 4 m plane as a function of temperature and emissivity, and the results from this study were then used to determine acceptable distances at which a critical heat flux of 30 kW/m² (approximate autoignition heat flux for wood) would not be reached.

In establishing an acceptable distance, the study considered heat flux measurements of 30 kW/m² in one of the construction site tests as part of the NRC report [1], as well as the acceptance and calibration criteria (35 kW/m² and 45 kW/m², respectively) used with respect to the NBC referenced standard CAN/ULC-S134, "Standard Method of Fire Test of Exterior Wall Assemblies," for exterior flame exposure.

This information is supportive of an upper emissive heat flux of approximately 50 kW/m² to establish acceptable corresponding distances from the sensitivity study. These distances ranged from 0 m to 2.6 m. Therefore, based on these results, 3 m has been identified as an acceptable distance for clearance between storage of combustible materials and the outer edge of the floor assembly.

Clauses (2)(b), (c) and (d): The proposed 3 m separation distance between individual piles is somewhat analogous to a similar provision for controlling the effects of fuels in proposed Sentence 3.1.6.4.(4)-2025 (PCF 1870), which would permit two facing or adjacent exposed mass timber walls within a suite provided a 4.5 m horizontal distance is maintained between them. A distance of 3 m between storage piles as well as between piles and exits is considered to provide a reasonable level of protection in this situation and maintains access to exits to facilitate the safe egress of occupants as well as staging for firefighting operations. The 3 m dimension is also applied elsewhere in the NFC and NBC where limits are placed on the distance between storage and other elements (e.g., wall openings, flammable liquid storage and exits) in occupied buildings.

Sentence (3): A clearance of 1.5 m is proposed to be maintained between the top of storage and the underside of the lowest plane of any beam, floor or roof assembly above the storage to permit hose streams to be directed onto the top of storage, which is 50% greater than the NFC provision (Sentence 3.2.2.3.(2)) for 1 m clearance above the indoor storage in a building that is not sprinklered.

Explanatory Note: Proposed Note A-5.6.4.6.-2025 provides further insight into the accumulation of short-term transient storage which may be necessary for daily construction activities and connects the management of combustible materials to the existing NFC provisions.

Reference

[1] J. Su, E. Gibbs, M. Weinfurter, P.-S. Lafrance, K. Gratton, A. Frade, and P. Leroux. "Large-scale fire tests of a mass timber building structure for MTDFTP". National Research Council of Canada. Report No: A1-018329.1/A1-018487.1 (Ottawa, Canada; May 2023).

PROPOSED CHANGE AS SUBMITTED TO FALL 2023 PUBLIC REVIEW

[2.8.2.11.] 2.8.2.11. Construction and Demolition Sites

[5.6.4.] 5.6.4. Additional Requirements for Buildings of Encapsulated Mass Timber Construction

[5.6.4.1.] 5.6.4.1. Application

[5.6.4.2.] 5.6.4.2. Standpipe Installation

[5.6.4.3.] 5.6.4.3. Protective Encapsulation and Fire Protection

[1] 1) Except as provided in ~~Sentences (2) and (3)~~Sentences (2) to (4) and (6)-2025, to address safety during construction, a protective encapsulation material or an assembly of materials providing an *encapsulation rating* of not less than 25 min, as determined in accordance with Sentence 3.1.6.5.(1) of Division B of the NBC, shall be installed

[a] a) such that not more than 20% of the area of the underside of each mass timber floor assembly on each *storey* is exposed during construction,

[b] b) on the interior side of stairways required by Sentence 5.6.3.7.(3) and of *vertical service spaces* where the enclosures are constructed of mass timber elements,

[c] c) on each face of solid lumber or mass timber *partitions* not less than 38 mm thick and on each face of *partitions* containing wood framing as permitted by Article 3.1.6.15. of Division B of the NBC, and

[d] d) such that not more than 35% of the total area of structural mass timber walls within the *storey* is exposed during construction.

(See Note A-5.6.4.3.(1).)

[2] --) Except as provided in Sentence (5)-2025, a protective encapsulation material or assembly of materials need not be installed as described in

Clause (1)(a), provided

[a] --) penetrations or openings through the floor assembly on any *storey* are

[i] --) protected with a firestop conforming to Sentence 3.1.9.1.(1) of Division B of the NBC,

[ii] --) filled with noncombustible insulation that is supported in place, or

[iii] --) protected, from the top of the floor assembly, with a single layer of not less than 12.7 mm thick Type X gypsum board mechanically fastened to not less than 12.7 mm thick plywood or OSB with the gypsum board facing the penetration

(see Note A-5.6.4.3.(2)(a)-2025),

[b] --) joints located in a horizontal plane between the floor and an exterior wall on any *storey* are

[i] --) protected with a firestop conforming to Sentence 3.1.8.3.(4) of Division B of the NBC, or

[ii] --) filled with noncombustible insulation that is supported in place,

[c] --) a standpipe system is installed in accordance with Articles 5.6.1.6. and 5.6.4.2., and is provided with hose stations for occupant use that are equipped with a hose line having

[i] --) a diameter of either 25 mm or 38 mm, and

[ii] --) a length sufficient to cover all parts of the storey with a hose stream of not less than 5 m

(see Note A-5.6.4.3.(2)(c)-2025), and

[d] --) a fire watch is conducted on all *storeys*

[i] --) at intervals of not more than 1 h when workers are present in the *building*, and

[ii] --) not less than 1 h after workers leave the *building*

(see Note A-5.6.4.3.(2)(d)-2025).

[3] --) Except as provided in Sentence (4)-2025, a protective encapsulation material or assembly of materials need not be installed as described in Clauses (1)(a), (c) and (d), provided an automatic sprinkler system

[a] --) is progressively installed during construction in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems" (see Note A-5.6.4.3.(3)(a)), and

[b] --) is in an operable condition at all times on any *storey* where it is not actively being worked on, until the automatic sprinkler system is completed.

[4] 2) ~~Not more than t~~The four uppermost ~~contiguous~~ *storeys* ~~are permitted to be unprotected as required by~~ need not conform to the requirements of Sentence (1) or the conditions of Sentence (3)-2025 during construction.

[5] --) The first four *storeys* need not conform to the conditions of Sentence (2)-2025 during construction, until the ceiling assembly of the fifth *storey* is installed. (See Note A-5.6.4.3.(5)-2025.)

[6] 3) The encapsulation material or assembly of materials used to meet the requirements of Sentence (1) is permitted to consist of a single layer of Type X gypsum board not less than 12.7 mm thick conforming to Clauses 3.1.6.6.(4)(a) and (c)-2025 of Division B of the NBC (PCF 1963).~~Clauses 3.1.6.6.(2)(a), (c) and (d) of Division B of the NBC.~~

Note A-5.6.4.3.(2)(a)-2025

Until permanent protection is provided, the fire protection of any penetrations or openings through the floor assembly can be temporary. Beyond those described in Clause 5.6.4.3.(2)(a)-2025, other forms of protection should have a noncombustible or other protective layer that will resist fire for a minimum of 30 min. Furthermore, any such protective layer should be structurally adequate over the penetrations or openings for the safety of occupants.

The fire protection of large penetrations or openings through floor assemblies, such as openings associated with convenience stairs, elevators or interconnected floor spaces, should address additional fire protection considerations, including structural support.

Note A-5.6.4.3.(2)(c)-2025

The length of hose should be sufficient to allow for adequate nozzle pressure and will depend on the chosen hose diameter. Typically, 38 mm diameter hose should have a length of not more than 30.5 m.

If construction reaches a height at which the public waterworks system can no longer provide the required flow and pressure, a temporary or permanent fire pump must be installed to adequately protect the uppermost storey of the building, unless the fire safety plan specifies an alternative approach that is permitted by the authority having jurisdiction.

Note A-5.6.4.3.(2)(d)-2025

The person conducting the fire watch should be familiar with all fire safety features of the building, including the fire safety plan, as provided in conformance with Section 2.8.

Note A-5.6.4.3.(3)(a)-2025

Even though NFPA 13, "Standard for the Installation of Sprinkler Systems", does not include specific provisions for installation of sprinklers during construction, it is expected that the requirements of NFPA 13 will be fully implemented as appropriate for the conditions that exist in the building under construction.

Note A-5.6.4.3.(5)-2025

It is intended that all storeys meet the conditions of Sentence 5.6.4.3.(2)-2025 once the ceiling assembly of the fifth storey has been installed.

REVISED PROPOSED CHANGE FOLLOWING FALL 2023 PUBLIC REVIEW

[2.8.2.11.] 2.8.2.11. Construction and Demolition Sites

(See Note A-5.6.4.7.)

[1] 1) Except as required in Sentence (2), prior to the commencement of construction, alteration or demolition operations, a fire safety plan shall be prepared for the site that includes

[a] a) the designation and organization of site personnel to carry out fire safety duties, including a fire watch service if applicable (see also Sentences 5.6.4.5.(6) and (7)),

[b] b) the emergency procedures to be followed in the event of a fire, including

[i] i) initiating a fire warning,

[ii] ii) notifying the fire department,

[iii] iii) instructing site personnel on the procedures to be followed once the warning has been initiated, and

[iv] iv) confining, controlling and extinguishing the fire,

[c] c) measures for controlling fire hazards in and around the *building* (see Note A-2.8.2.11.(1)(c)), and

[d] d) a maintenance procedure for firefighting measures required in Section 5.6.

[2] 2) Where construction, alteration or demolition operations are carried out in an existing *building* that is required to have a fire safety plan conforming to this Section, the fire safety plan shall take into account the changes occurring to the *building*.

[5.6.4.] 5.6.4. Additional Requirements for Buildings of Encapsulated Mass Timber Construction

[5.6.4.1.] 5.6.4.1. Application

[5.6.4.2.] 5.6.4.2. Standpipe Installation

[5.6.4.3.] --- Measures to Reduce the Risk of Fire Spread Between Storeys

(See Note A-5.6.4.3.-2025.)

[1] --) To reduce the risk of fire spread to more than one *storey* of a *building* or part of a *building* undergoing construction, alteration or demolition operations, measures shall be taken that

[a] --) conform to Articles 5.6.4.4. to 5.6.4.7., or

[b] --) employ the methods and materials that are deemed necessary following a risk assessment as part of a fire safety plan.

[5.6.4.4.] 5.6.4.3. Protective Encapsulation ~~and Fire Protection~~

[1] 1) Except as provided in Sentences (2) ~~to~~and (~~4~~3) and Articles 5.6.4.5. and 5.6.4.6.~~(6)-2025~~, to address safety during construction, a protective encapsulation material or an assembly of materials providing an *encapsulation rating* of not less than 25 min, as determined in accordance with Sentence 3.1.6.5.(1) of Division B of the NBC, shall be installed

[a] a) such that not more than 20% of the area of the underside of each mass timber floor assembly on each *storey* is exposed during construction,

[b] b) on the interior side of stairways required by Sentence 5.6.3.7.(3) and of *vertical service spaces* where the enclosures are constructed of mass timber elements,

[c] c) on each face of solid lumber or mass timber *partitions* not less than 38 mm thick and on each face of *partitions* containing wood framing as permitted by Article 3.1.6.15. of Division B of the NBC, and

[d] d) such that not more than 35% of the total area of structural mass timber walls within the *storey* is exposed during construction.

(See Note A-5.6.4.~~3~~4.(1).)

[2] 2) The four uppermost *storeys* need not conform to the requirements of Sentence (1) ~~or the conditions of Sentence (3)-2025~~ during construction.

[3] 3) The encapsulation material or assembly of materials used to meet the requirements of Sentence (1) is permitted to consist of a single layer of Type X gypsum board not less than 12.7 mm thick conforming to Clauses 3.1.6.6.(4)(a) and (c)-2025 of Division B of the NBC (PCF 1963).

[5.6.4.5.] --- Alternative Protection Measures

[1] --) Except as provided in Sentence (~~5~~8), the~~a~~ protective encapsulation material or assembly of materials ~~need not be installed as~~ described in Clause 5.6.4.4.(1)(a)~~,~~ and the progressive sprinklering described in Article 5.6.4.6. need not be provided where the conditions of Sentences (2) to (7) are met.

[2] --) ~~p~~Penetrations or openings through the floor assembly on any *storey* ~~are~~shall be

[a] --) protected with a firestop conforming to Sentence 3.1.9.1.(1) of Division B of the NBC,

[b] --) filled with noncombustible insulation that is supported in place, or

[c] --) protected, from the top of the floor assembly, with a single layer of not less than 12.7 mm thick Type X gypsum board mechanically fastened to not less than 12.7 mm thick plywood or OSB with the gypsum board facing the penetration.

(~~s~~See Note A-5.6.4.~~3~~5.(2)~~(a).~~)

[3] --) ~~j~~Joints located in a horizontal plane between the floor and an exterior wall on any *storey* ~~are~~shall be

[a] --) protected with a firestop conforming to Sentence 3.1.8.3.(4) of

Division B of the NBC, or

[b] --) filled with noncombustible insulation that is supported in place.

[4] --) ~~a~~A standpipe system ~~is~~shall be installed in accordance with Articles 5.6.1.6. and 5.6.4.2.,

[5] --) The standpipe system described in Sentence (4) shall be ~~and is~~ provided with hose stations ~~for occupant use~~ that are equipped with a hose line having

[a] --) a diameter of either 25 mm or 38 mm, and

[b] --) a length sufficient to cover all parts of the storey with a hose stream of not less than 5 m.

(~~s~~See Note A-5.6.4.~~3~~5.(~~2~~5)~~(c).~~)~~,~~ ~~and~~

[6] --) A person shall be employed to conduct a fire watch ~~is conducted~~on all *storeys* with tours

[a] --) at intervals of not more than 1 h when workers are present in the *building*, and

[b] --) not less than 1 h and no more than 2 h after ~~workers leave the *building*~~daily work is complete.

~~(see Note A-5.6.4.3.(2)(d)-2025).~~

[7] --) The person employed to conduct the fire watch described in Sentence (6) shall be familiar with all fire safety features, including

[a] --) the fire safety plan as provided in conformance with Section 2.8., and

[b] --) the location and condition of *exits*.

(See Note A-5.6.4.5.(7).)

[8] --) The first four *storeys* need not conform to the conditions of Sentences (2) to (7) during construction, until the ~~ceiling~~structural floor assembly ~~of~~above the fifth *storey* ~~is~~has been ~~installed~~constructed. (See Note A-5.6.4.~~3~~5.(~~5~~8)-2025.)

[5.6.4.6.] --- Progressive Sprinklering

[1] --) Except as provided in Sentence (~~4~~2)-2025, ~~a~~the protective encapsulation material or assembly of materials ~~need not be installed as~~ described in Clauses 5.6.4.4.(1)(a), (c) and (d)~~,~~ and the alternative protection measures described in Article 5.6.4.5. need not be provided where an automatic sprinkler system

[a] --) is progressively installed during construction in accordance with NFPA 13, "Standard for the Installation of Sprinkler Systems" (see Note A-5.6.4.~~3~~6.(~~3~~1)(a)), and

[b] --) is in an operable condition at all times on any *storey* where it is not actively being worked on, until the permanent automatic sprinkler system is completed.

[2] 2) The four uppermost *storeys* need not conform to the requirements of Sentence (1)~~or the conditions of Sentence (3)-2025~~ during construction.

[5.6.4.7.] --- Indoor Storage of Combustible Materials

(See Note A-5.6.4.7.)

[1] --) Combustible materials that are stored indoors shall be arranged in individual piles not exceeding 1.2 m in width and 2.4 m in length.

[2] --) A clearance of not less than 3 m shall be maintained between an individual pile of combustible materials described in Sentence (1) and

[a] --) the outer edge of the floor assembly,

[b] --) any *exit* serving the *storey*,

[c] --) any individual pile of combustible materials, and

[d] --) any ignition source.

[3] --) A clearance of not less than 1.5 m shall be maintained between the top of an individual pile of combustible materials described in Sentence (1) and the underside of the lowest plane of any beam, floor or roof assembly.

Note A-5.6.4.3.-2025

As part of a fire safety plan, the methods and materials deemed necessary following a risk assessment can be used to reduce the risk of fire spread between storeys. Articles 5.6.4.4. to 5.6.4.7., together, provide solutions deemed acceptable for reducing this risk.

The risk assessment performed as part of the fire safety plan should be carried out by an experienced practitioner who is qualified in developing, selecting and using fire risk assessment methodologies. A qualified practitioner may be a registered professional engineer, certified fire protection specialist, or other suitably qualified and experienced professional.

Note A-5.6.4.~~3~~4.(1)

The extent to which the structure under construction may need to be protected in accordance with Sentence 5.6.4.3.(1) may vary based on the fire safety plan. The protective encapsulation material or assembly of materials is intended to limit the potential for fire spread within the storey as well as to limit the potential for fire spread to upper storeys, thereby also limiting the potential exposure of adjacent structures to fire.

Note A-5.6.4.~~3~~5.(2)~~(a)~~

Until permanent protection is provided, the fire protection of any penetrations or openings through the floor assembly can be temporary. Beyond those described in Sentence~~Clause~~ 5.6.4.~~3~~5.(2)~~(a)~~, other forms of protection should have a noncombustible or other ~~protective~~ layer that will ~~resist~~provide protection from fire for a minimum of 30 min. Furthermore, any such protective layer should be structurally adequate over the penetrations or openings for the safety of occupants.

~~The fire protection of l~~Large penetrations or openings through floor assemblies, such as openings associated with convenience stairs, elevators or interconnected floor spaces, ~~should address~~may require additional fire protection ~~considerations~~, including structural support.

Note A-5.6.4.~~3~~5.(~~2~~5)~~(c)~~

The length of hose should be sufficient to allow for adequate nozzle pressure and will depend on the chosen hose diameter. Typically, 38 mm diameter hose should have a length of not more than 30.5 m.

If construction reaches a height at which the public waterworks system can no longer provide the required flow and pressure, a temporary or permanent fire pump must be installed to adequately protect the uppermost storey of the building, unless the fire safety plan specifies an alternative approach that is permitted by the authority having jurisdiction.

The fire safety plan is intended to address any temporary provisions implemented during construction, including connections to water supplies and fire department connection locations.

Note A-5.6.4.~~3~~5.(~~2~~7)~~(d)~~

~~The person conducting the fire watch should be familiar with all fire safety features of the building, including the fire safety plan, as provided in conformance with Section 2.8.~~

The person employed to conduct the fire watch should be trained in the use of fire extinguishing equipment, as established in the fire safety plan conforming to Section 2.8.

The need for supervision of the site and overall construction works at scheduled intervals during non-working hours, including weekends, should be determined as part of the fire safety plan, taking into consideration factors such as site security and local conditions.

Note A-5.6.4.~~3~~5.(~~5~~8)

It is intended that all storeys meet the conditions of Sentence~~s~~ 5.6.4.~~3~~5.(2) to (7) once the ~~ceiling~~structural floor assembly ~~of~~above the fifth storey has been ~~installed~~constructed.

Note A-5.6.4.~~3~~6.(~~3~~1)(a)

Even though NFPA 13, "Standard for the Installation of Sprinkler Systems", does not include specific provisions for installation of sprinklers during construction, it is expected that the requirements of NFPA 13 will be fully implemented as appropriate for the conditions that exist in the building under construction.

Note A-5.6.4.7.

The short-term and transient accumulation and storage of combustible materials that are necessary for day-to-day construction activities may not constitute an undue fire hazard with respect to the placement of the materials. Nevertheless, the management of combustible materials and refuse, including their removal and disposal, must be carried out in accordance with Subsection 2.4.1. and Articles 5.6.1.20. and 5.6.3.4.

Impact analysis

This proposed change would introduce an option to allow 100% of the surface of the underside of each mass timber floor assembly to be exposed during construction. As noted above, Article 5.6.4.3. of Division B of the NFC 2020 mandates that at least 80% of the underside of mass timber floor assemblies be protected by a minimum level of encapsulation (e.g., using one layer of 12.7 mm thick Type X gypsum board).

As a result of the proposed increase in exposed ceiling construction, risk of fire growth and extended duration of flaming combustion also increases, which can contribute to spread within the storey and between storeys.

A more holistic approach is warranted and is being proposed in these changes with respect to addressing such risks from both a performance- and prescriptive-based perspective. This approach is somewhat analogous to what is already intended by NFC Article 5.6.1.2. with respect to addressing fire spread from construction sites to adjacent properties.

Table 3 provides a list of the proposed changes to the NFC, including the intent of the changes as related to managing/reducing the risk of fire during construction.

Table 3. Proposed Changes Related to Course of Construction Fires in EMTC

Proposed Change	Intent
Holistic requirement for performance-based fire risk assessment or use of prescriptive acceptable solutions to limit fire spread between storeys	Establish a fundamental approach to risk assessment and deemed-to-comply solutions
Fire blocking/firestopping of floor openings or joints between assemblies	Reduce fire spread between storeys
Installation of standpipe hoselines	Reduce fire spread Facilitate emergency operations
Fire watch/site security	Reduce/manage sources of ignition Ensure compliance with fire safety plan during construction
Progressive sprinkler protection	Reduce fire growth Facilitate emergency operations
Rules for storage of combustible materials	Reduce initial fuel package Reduce fire spread within a storey and between storeys Maintain clear and unobstructed exit/ingress paths for occupants and emergency responders

This proposed change provides additional options for fire protection during building construction, which may reduce costs in some instances as well as the need for extensive oversight from the authority having jurisdiction. As the existing compliance options (protective encapsulation) remain in the NFC, this proposed change would not entail any additional costs should that option be used.

By aligning the NFC requirements for the protection of mass timber elements during construction with those proposed for the NBC 2025 for the finished building, the expectation is that costs would either remain the same or be reduced due to the harmonization of requirements.

As the installation of encapsulation materials during the construction process can be physically challenging, having the option not to install encapsulation materials could help avoid issues related to:

- moisture and mould,
- costs of fixing moisture-related damage, and
- creation of waste,

while maintaining an acceptable level of fire safety.

Enforcement implications

There are no anticipated enforcement implications as this proposed change could be enforced by the existing Code enforcement infrastructure.

Who is affected

Architects, designers, developers, owners, and engineers would benefit from the increased flexibility provided by this proposed change.

Authorities having jurisdiction, including fire departments, would need to continue to evaluate their operating procedures in response to the requirements for EMTC.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[2.8.2.11.] 2.8.2.11. ([1] 1)
[F11,F13,F12-OS1.2,OS1.5] [F01,F82-OS1.1] [F02,F82-OS1.2]

[2.8.2.11.] 2.8.2.11. ([1] 1)
[F13,F12-OP1.2] [F01,F82-OP1.1] [F02,F82-OP1.2]

[2.8.2.11.] 2.8.2.11. ([2] 2) no attributions

[5.6.4.1.] 5.6.4.1. ([1] 1) no attributions

[5.6.4.2.] 5.6.4.2. ([1] 1) [F02,F12-OS1.2]

[5.6.4.2.] 5.6.4.2. ([1] 1) [F02,F12-OP1.2]

[5.6.4.2.] 5.6.4.2. ([2] 2) [F02,F12-OS1.2]

[5.6.4.2.] 5.6.4.2. ([2] 2) [F02,F12-OP1.2]

[5.6.4.2.] 5.6.4.2. ([3] 3) [F02,F12-OS1.2]

[5.6.4.2.] 5.6.4.2. ([3] 3) [F02,F12-OP1.2]

[5.6.4.2.] 5.6.4.2. ([4] 4) [F02,F12-OS1.2]

[5.6.4.2.] 5.6.4.2. ([4] 4) [F02,F12-OP1.2]

[5.6.4.2.] 5.6.4.2. ([5] 5) no attributions

[5.6.4.3.] -- ([1] --) [F02,F03-OS1.2]

Intent 1:

To limit the probability that, as a result of the construction or alteration of the building on a floor area, a fire would grow uncontrolled and spread to upper storeys of the building, which could lead to harm to persons.

[5.6.4.3.] -- ([1] --) [F05-OS1.5]

Intent 1:

To limit the probability that, as a result of the construction or alteration of the building on a floor area, a fire would grow uncontrolled and spread to upper storeys of the building, which could lead to persons being delayed in or impeded from moving to a safe place during an emergency.

[5.6.4.3.] -- ([1] --) [F02,F03-OP1.2]

Intent 1:

To limit the probability that, as a result of the construction or alteration of the building on a floor area, a fire would grow uncontrolled and spread to upper storeys of the building, which could lead to damage to the building.

[5.6.4.3.] -- ([1] --) (a)

Intent 1:

To direct Code users to Articles 5.6.4.4. to 5.6.4.7. for additional protection requirements for buildings of encapsulated mass timber construction undergoing construction, alteration or demolition operations.

[5.6.4.3.] -- ([1] --) (b)

Intent 1:

To clarify that a fire risk assessment is to be undertaken and measures identified to minimize the risks as part of the fire safety plan.

[5.6.4.4.] 5.6.4.3. ([1] 1) [F02-OS1.2]

[5.6.4.4.] 5.6.4.3. ([1] 1) [F02-OP1.2]

~~[5.6.4.4.] 5.6.4.3. ([1] 1) [F02-OP3.1]~~

~~Intent 1:~~

~~To limit the probability that mass timber elements will contribute to a fire, which could lead to the spread of fire from the building to an adjacent building or facility, which could lead to damage to adjacent buildings or facilities.~~

[5.6.4.4. 5.6.4.6.] 5.6.4.3. ([2 2] 2) no attributions

Intent 1:

To exempt ~~certain floors~~the four uppermost storeys of the building under construction from the application of Sentence 5.6.4.3.(1), on the basis that it is impractical to ~~apply Sentence 5.6.4.3.(1)to all floors of a building during~~install such protection on the uppermost storeys in the early stage of construction.

[5.6.4.4.] 5.6.4.3. ([3] 3) no attributions

Intent 1:

To ~~permit~~exempt not less than 12.7 mm Type X gypsum board ~~to be used as the encapsulation material~~from the application of Sentence 5.6.4.4.(1), if certain conditions are met, on the basis that its performance is considered equivalent to the encapsulation rating ~~required by Sentence 5.6.4.3.(1)~~.

[5.6.4.5.] -- (--) [F02-OS1.2]

Intent 1:

To limit the probability that mass timber elements will contribute to a fire, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.5.] -- (--) [F02-OP1.2]

Intent 1:

To limit the probability that mass timber elements will contribute to a fire, which could lead to the spread of fire, which could lead to damage to the building or facility.

[5.6.4.5.] -- (--) no attributions

Intent 1:

To exempt the underside of a mass timber floor assembly from the ~~requirements described in Clause 5.6.4.3.(1)(a)~~installation of a protective encapsulation material or an assembly of materials providing an encapsulation rating, and to provide an exemption from the progressive sprinklering requirements of Article 5.6.4.6., if certain conditions are met, on the basis that the ~~performance~~fire protection measures

are~~is~~ considered equivalent to the encapsulation rating ~~required by Sentence 5.6.4.3.(1)~~.

[5.6.4.5.] -- ([2] --) [F03-OS1.2]

Intent 1:

To limit the probability that a fire will spread through penetrations or openings through the floor assembly to upper storeys, which could lead to the spread of fire in the building, which could lead to harm to persons.

[5.6.4.5.] -- ([2] --) [F03-OP1.2]

Intent 1:

To limit the probability that a fire will spread through penetrations or openings through the floor assembly to upper storeys, which could lead to the spread of fire in the building, which could lead to damage to the building or facility.

[5.6.4.5.] -- ([3] --) [F03-OS1.2]

Intent 1:

To limit the probability that a fire will spread through the joints between the floor and an exterior wall, which could lead to the spread of fire to upper storeys, which could lead to harm to persons.

[5.6.4.5.] -- ([3] --) [F03-OP1.2]

Intent 1:

To limit the probability that a fire will spread through the joints between the floor and an exterior wall, which could lead to the spread of fire to upper storeys, which could lead to damage to the building or facility.

[5.6.4.5.] -- ([4] --) no attributions

Intent 1:

To direct Code users to Articles 5.6.1.6. and 5.6.4.2. for the installation of a standpipe system.

[5.6.4.5.] -- ([5] --) [F02-OS1.2]

Intent 1:

To limit the probability that a fire involving mass timber elements will grow uncontrolled, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.5.] -- ([5] --) [F02-OP1.2]

Intent 1:

To limit the probability that a fire involving mass timber elements will grow uncontrolled, which could lead to the spread of fire, which could lead to damage to the building or facility.

[5.6.4.5.] -- ([6] --) [F02-OS1.2]

Intent 1:

To limit the probability that a fire will grow unnoticed, which could ignite mass timber elements and contribute to a fire, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.5.] -- ([6] --) [F02-OP1.2]

Intent 1:

To limit the probability that a fire will grow unnoticed, which could ignite mass timber elements and contribute to a fire, which could lead to the spread of fire, which could lead to damage to the building or facility.

[5.6.4.5.] -- ([7] --) [F11-OS1.5]

Intent 1:

To limit the probability that a person employed to conduct a fire watch is not familiar with the fire safety plan, including the location of exits, which could lead to undue delays in notifying people in a fire emergency, which could lead to persons being delayed in or impeded from moving to a safe place during a fire emergency, which could lead to harm to persons.

[5.6.4.5.] -- ([8] --) no attributions

Intent 1:

To exempt the first four storeys of the building from the conditions of~~requirements described in~~ Sentences (2) to (7) ~~if certain conditions are met, until a certain amount of the building has been constructed~~on the basis that having the first four storeys unprotected does not pose an undue fire safety risk to persons or the building.

[5.6.4.6.] -- ([1] --) [F02-OS1.2]

Intent 1:

To limit the probability that mass timber elements will contribute to a fire, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.6.] -- ([1] --) [F02-OP1.2]

Intent 1:

To limit the probability that mass timber elements will contribute to a fire, which could lead to the spread of fire, which could lead to damage to the building or facility.

[5.6.4.6.] -- ([1] --) no attributions

Intent 1:

To exempt the certain mass timber elements from the installation of a protective encapsulation material or an assembly of materials providing an encapsulation rating, and to provide an exemption from the alternative protection measures listed in Article 5.6.4.5., if certain conditions are met, on the basis that the operation of an automatic sprinkler system is considered equivalent to the encapsulation rating.

[5.6.4.6.] -- ([1] --) (b) [F03-OS1.2]

Intent 1:

To limit the probability that the automatic sprinkler system will not operate as intended in case of a fire, which could ignite the mass timber elements, which could contribute to a fire, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.6.] -- ([1] --) (b) [F03-OP1.2]

Intent 1:

To limit the probability that the automatic sprinkler system will not operate as intended in case of a fire, which could ignite the mass timber elements, which could contribute to a fire, which could lead to the spread of fire, which could lead to damage to the building or facility.

[5.6.4.4. 5.6.4.6.] 5.6.4.3. ([2 2] 2) no attributions

Intent 1:

To exempt ~~certain floors~~the four uppermost storeys of the building under construction from the application of Sentence 5.6.4.3.(1), on the basis that it is impractical to ~~apply Sentence 5.6.4.3.(1) to all floors of a building~~install such protection on the uppermost storeys in the early stage of ~~during~~ construction.

[5.6.4.7.] -- ([1] --) [F02-OS1.2]

Intent 1:

To limit the probability that the size of individual piles for indoor storage of combustible materials lead to an uncontrolled fire, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.7.] -- ([1] --) [F02-OP1.2]

Intent 1:

To limit the probability that the size of individual piles for indoor storage of combustible materials lead to an uncontrolled fire, which could lead to the spread of fire, which could lead to damage to the building.

[5.6.4.7.] -- ([2] --) (a) [F02,F03-OP1.2]

Intent 1:

To limit the probability that a fire involving an individual pile of stored combustible materials will spread between storeys, which could lead to damage to the building.

[5.6.4.7.] -- ([2] --) (c) [F02,F03-OS1.2]

Intent 1:

To limit the probability that a fire involving an individual pile of stored combustible materials will spread to other piles, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.7.] -- ([2] --) (b) [F05-OS1.5]

Intent 1:

To limit the probability that a fire involving an individual pile of stored combustible materials will impede access to an exit in case of a fire, which could lead to persons being delayed in or impeded form moving to a safe place during a fire emergency, which could lead to harm to persons.

[5.6.4.7.] -- ([2] --) (d) [F01-OS1.1]

Intent 1:

To limit the probability that an individual pile of stored combustible materials will be exposed to ignition sources, which could lead to ignition of the combustible materials, which could lead to a fire, which could lead to harm to persons.

[5.6.4.7.] -- ([2] --) (d) [F01-OP1.1]

Intent 1:

To limit the probability that an individual pile of stored combustible materials will be exposed to ignition sources, which could lead to ignition of the combustible materials, which could lead to a fire, which could lead to damage to the building.

[5.6.4.7.] -- ([3] --) [F12-OS1.2]

Intent 1:

To limit the probability that firefighting operations will be delayed or ineffective on a

fire involving a pile of stored combustible materials, which could lead to the spread of fire, which could lead to harm to persons.

[5.6.4.7.] -- ([3] --) [F12-OP1.2]

Intent 1:

To limit the probability that firefighting operations will be delayed or ineffective on a fire involving a pile of stored combustible materials, which could lead to the spread of fire, which could lead to damage to the building.