

[Comment](#)

Proposed Change 1804

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	501-05	Methods of Test for Exterior Walls	NBC A-5.9.3. CNB A-5.9.3.
AAMA	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	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	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	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	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.
ACGIH	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)

Issuing Agency	Document Number	Title of Document	Code Reference
ACI	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	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	AHRI 310/380-2014/CSA C744-14	Packaged Terminal Air-Conditioners and Heat Pumps	NECB Table 5.2.12.1.G
AHRI	AHRI 310/380-2014/CSA C744-14	Conditionneurs d'air et thermopompes monoblocs	CNÉB Tableau 5.2.12.1.-G
AHRI	ANSI/AHRI 1500 (2015)	Performance Rating of Commercial Space Heating Boilers	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10.
AHRI	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	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	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	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.
AHRI	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	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	CAN/ANSI/AHRI 1330-2015	Performance Rating for Radiant Output of Gas Fired Infrared Heaters	NECB Table 5.2.12.1.P
AHRI	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

Issuing Agency	Document Number	Title of Document	Code Reference
AHRI	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	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	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	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	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	S201-12	North American Standard for Cold-Formed Steel Framing - Product Data 2012 Edition	NBC 9.24.1.2.(1) CNB 9.24.1.2. 1)
AMCA	ANSI/AMCA 500-D-12	Methods of Testing Dampers for Rating	NECB 5.2.4.2.(2) CNÉB 5.2.4.2. 2)
AMCA	ANSI/AMCA 500-L-12	Methods of Testing Louvers for Rating	NECB 5.2.4.2.(2) CNÉB 5.2.4.2. 2)
ANSI	A135.6-2012	Engineered Wood Siding	NBC Table 5.9.1.1. NBC 9.27.9.1.(1) CNB Tableau 5.9.1.1. CNB 9.27.9.1. 1)
ANSI	A208.1- 2009 2016	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/CSA	CSA/ANSI Z21.10.3-2017 :19/CSA 4.3- 2017 :19	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/CSA	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)

Issuing Agency	Document Number	Title of Document	Code Reference
ANSI/CSA	CSA/ANSI Z21.47-2016 :21/CSA 2.3-2016 :21	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/CSA	ANSI Z21.50-2016 :19/CSA 2.22-2016 :19	Vented decorative gas appliances	NBC Table 9.36.3.10. CNB Tableau 9.36.3.10.
ANSI/CSA	CSA/ANSI Z21.56-2017 :19/CSA 4.7-2017 :19	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/CSA	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	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	RP 1604 (1996)	Closure of Underground Petroleum Storage Tanks	NFC A-4.3.16.1.(1) CNPI A-4.3.16.1. 1)
API	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.
API	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	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	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	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)

Issuing Agency	Document Number	Title of Document	Code Reference
API	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	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	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	SPEC 5L (2012)	Line Pipe	NFC 4.5.2.1.(4) CNPI 4.5.2.1. 4)
API	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	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	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	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)
API	STD 650 (2013)	Welded Tanks for Oil Storage	NFC 4.3.1.2.(1) CNPI 4.3.1.2. 1)
API	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	IP-2-2014	Hose Handbook	NFC A-4.8.8.1.(1)(a) CNPI A-4.8.8.1. 1)a)
ASABE	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.

Issuing Agency	Document Number	Title of Document	Code Reference
ASCE	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	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	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	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	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) NECB 8.4.2.2.(4) CNÉB 8.4.2.2. 4)
ASHRAE	ANSI/ASHRAE 188-2015	Legionellosis: Risk Management for Building Water Systems	NBC A-6.2.1.1. CNB A-6.2.1.1.
ASHRAE	ANSI/ASHRAE 55-2013	Thermal Environmental Conditions for Human Occupancy	NECB A-5.2.8.3.(1) CNÉB A-5.2.8.3. 1)
ASHRAE	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	ANSI/ASHRAE 62-2001	Ventilation for Acceptable Indoor Air Quality (except Addendum n)	NBC A-9.25.5.2.
ASHRAE	ANSI/ASHRAE 62-2001	Ventilation for Acceptable Indoor Air Quality (sauf l'addenda n)	CNB A-9.25.5.2.
ASHRAE	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	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	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	1997	ASHRAE Handbook – Fundamentals	NBC A-9.32.3.11. CNB A-9.32.3.11.

Issuing Agency	Document Number	Title of Document	Code Reference
ASHRAE	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	2013	ASHRAE Handbook – Fundamentals	NBC A-9.36.2.4.(1) NBC Table A-9.36.2.4.(1)D CNB Tableau A-9.36.2.4. 1)D CNB A-9.36.2.4. 1) 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)
ASHRAE/IES	ANSI/ASHRAE/IES 90.1-2013	Energy Standard for Buildings Except Low-Rise Residential Buildings	NECB A-Table 3.2.2.2. NECB A-5.2.3.4.(2) CNÉB A-Tableau 3.2.2.2. CNÉB A-5.2.3.4. 2)
ASHRAE/IES	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	BPVC- 2017 <u>2021</u>	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	B16.12- 2009 <u>2019</u>	Cast Iron Threaded Drainage Fittings	NPC 2.2.6.3.(1) CNP 2.2.6.3. 1)
ASME	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.

Issuing Agency	Document Number	Title of Document	Code Reference
ASME	B16.18- 2018 2021	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	B16.22- 2018 2021	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	B16.23-2016	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	B16.24-2016	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)
ASME	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	B16.29-2017	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	B16.3- 2016 2021	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	B16.4- 2016 2021	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	B16.5- 2017 2020	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	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)

Issuing Agency	Document Number	Title of Document	Code Reference
ASME	B18.6.1-1981	Wood Screws (Inch Series)	NBC Table 5.9.1.1. NBC 9.23.3.1.(3) NBC A-9.23.3.1.(3) CNB Tableau 5.9.1.1. CNB 9.23.3.1. 3) CNB A-9.23.3.1. 3)
ASME	B31.3- 2016 <u>2020</u>	Process Piping	NFC 4.5.2.1.(5) CNPI 4.5.2.1. 5)
ASME	B31.9- 2017 <u>2020</u>	Building Services Piping	NPC 2.3.2.8.(1) CNP 2.3.2.8. 1)
ASME	B36.19M-2018	Stainless Steel Pipe	NPC 2.2.6.10.(1) CNP 2.2.6.10. 1)
ASME/CSA	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/CSA	ASME A112.18.2- 2015 <u>2020</u> /CSA B125.2- 15 <u>:20</u>	Plumbing Waste Fittings	NPC 2.2.3.3.(1) NPC 2.2.10.6.(6) CNP 2.2.3.3. 1) CNP 2.2.10.6. 6)
ASME/CSA	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/CSA	ASME A112.19.1-2018/CSA B45.2-18	Enamelled Cast Iron and Enamelled Steel Plumbing Fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME/CSA	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/CSA	ASME A112.19.3-2017/CSA B45.4-17	Stainless Steel Plumbing Fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME/CSA	ASME A112.19.7- 2012 <u>2020</u> /CSA B45.10- 12 <u>:20</u>	Hydromassage Bathtub <u>bathtub</u> Systems <u>systems</u>	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)
ASME/CSA	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/CSA	ASME A112.4.14-2017/CSA B125.14-17	Manually Operated Valves for Use in Plumbing Systems	NPC 2.2.10.6.(7) CNP 2.2.10.6. 7)
ASME/CSA	ASME A112.4.2- 2015 <u>2021</u> /CSA B45.16- 15 <u>:21</u>	Personal hygiene devices for water closets	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ASME/CSA	ASME A17.1-2016/CSA B44-16	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/CSA	ASME A17.1-2016/CSA B44-16	Code de sécurité sur les ascenseurs ou monte-charges et les escaliers mécaniques	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)
ASPE	2010	Plumbing Engineering Design Handbook, Volume 2	NPC A-2.6.3.1.(2) CNP A-2.6.3.1. 2)
ASPE	2012	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/ANSI	63-2013	Rainwater Catchment Systems	NPC A-2.7.2.4.(1) CNP A-2.7.2.4. 1)
ASSE	ANSI/ASSE 1010- 2004 2021	Water Hammer Arresters	NPC 2.2.10.15.(1) CNP 2.2.10.15. 1)
ASSE	1051- 2009 2021	Individual and Branch Type Air Admittance Valves for Sanitary Drainage Systems	NPC 2.2.10.16.(1) CNP 2.2.10.16. 1)
ASSE/CSA	ASSE 1002- 2015 2020/ASME A112.1002- 2015 2020/CSA B125.12- 1520	Anti-siphon fill valves for water closet tanks	NPC 2.2.10.10.(2) CNP 2.2.10.10. 2)
ASSE/CSA	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/CSA	ASSE 1037- 2015 2020/ASME A112.1037- 2015 2020/CSA B125.37- 1520	Performance requirements for pressurized flushing devices for plumbing fixtures	NPC 2.2.10.8.(1) CNP 2.2.10.8. 1)
ASSE/CSA	ASSE 1070- 2015 2020/ASME A112.1070- 2015 2020/CSA B125.70- 1520	Performance requirements for water temperature limiting devices	NPC 2.2.10.7.(2) CNP 2.2.10.7. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	A1008/A1008M- 48 <u>21a</u>	Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, <u>Required Hardness</u> , Solution Hardened, and Bake Hardenable	NBC 4.2.3.8.(1) CNB 4.2.3.8. 1)
ASTM	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	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.
ASTM	A153/A153M-16a	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware	NBC Table 5.9.1.1. NBC Table 9.20.16.1. NBC 9.23.2.4.(2) CNB Tableau 5.9.1.1. CNB Tableau 9.20.16.1. CNB 9.23.2.4. 2)
ASTM	A182/A182M- 49 <u>21</u>	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	A193/A193M- 47 <u>20</u>	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	A252/ <u>A252M-40</u> 19	Standard Specification for Welded and Seamless Steel Pipe Piles	NBC 4.2.3.8.(1) CNB 4.2.3.8. 1)
ASTM	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	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	A312/A312M- 48a <u>22</u>	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	A351/A351M- 48 <u>18e1</u>	Standard Specification for Castings, Austenitic, for Pressure-Containing Parts	NPC 2.2.6.13.(1) CNP 2.2.6.13. 1)
ASTM	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

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	A403/A403M- 19 <u>22</u>	Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings	NPC 2.2.6.11.(1) CNP 2.2.6.11. 1)
ASTM	A518/A518M-99	Standard Specification for Corrosion-Resistant High-Silicon Iron Castings	NPC 2.2.8.1.(1) CNP 2.2.8.1. 1)
ASTM	A53/A53M- 18 <u>20</u>	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	A653/A653M- 18 <u>20</u>	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process	NBC Table 5.9.1.1. NBC 9.3.3.2.(1) NBC 9.23.2.4.(1) CNB Tableau 5.9.1.1. CNB 9.3.3.2. 1) CNB 9.23.2.4. 1)
ASTM	A792/A792M- 10 <u>21a</u>	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	B306- 13 <u>20</u>	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	B32- 08 <u>20</u>	Standard Specification for Solder Metal	NPC 2.2.9.2.(1) CNP 2.2.9.2. 1)
ASTM	B42- 15a <u>20</u>	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	B43- 15 <u>20</u>	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	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	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	B88- 16 <u>20</u>	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	C1002- 07 <u>22</u>	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 Table 5.9.1.1. NBC 9.24.1.4.(1) NBC 9.29.5.7.(1) CNB Tableau 5.9.1.1. CNB 9.24.1.4. 1) CNB 9.29.5.7. 1)
ASTM	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	C1055- 03 <u>20</u>	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	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 Table 5.9.1.1. NBC Table 9.23.17.2.A NBC A-9.27.14.2.(2)(a) CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB A-9.27.14.2. 2)a)
ASTM	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 Table 5.9.1.1. NBC 9.29.5.2.(1) CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB Tableau 5.9.1.1. CNB 9.29.5.2. 1)
ASTM	C1184-18e1	Standard Specification for Structural Silicone Sealants	NBC Table 5.9.1.1. NBC 9.27.4.2.(2) CNB Tableau 5.9.1.1. CNB 9.27.4.2. 2)
ASTM	C1193-16	Standard Specification for Use of Joint Sealants	NBC A-Table 5.9.1.1. NBC A-9.27.4.2.(1) CNB A-Tableau 5.9.1.1. CNB A-9.27.4.2. 1)
ASTM	C126- 13 <u>22</u>	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	NBC Table 5.9.1.1. NBC 9.20.2.1.(1) CNB Tableau 5.9.1.1. CNB 9.20.2.1. 1)
ASTM	C1280- 13 <u>18</u>	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	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	C1311- 44 <u>22</u>	Standard Specification for Solvent Release Sealants	NBC Table 5.9.1.1. NBC 9.27.4.2.(2) CNB Tableau 5.9.1.1. CNB 9.27.4.2. 2)
ASTM	C1330-18	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants	NBC Table 5.9.1.1. NBC 9.27.4.2.(3) CNB Tableau 5.9.1.1. CNB 9.27.4.2. 3)
ASTM	C1363- 44 <u>19</u>	Standard Test Method for Thermal Performance of Building Materials and Envelope Assemblies by Means of a Hot Box Apparatus	NBC A-5.9.4.1.(1) NBC 9.36.2.2.(4) CNB A-5.9.4.1. 1) CNB 9.36.2.2. 4) 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	C1396/C1396M-17	Standard Specification for Gypsum Board	NBC 3.1.5.14.(6) NBC 3.1.5.15.(4) NBC 3.1.6.6.(2) NBC 3.1.6.15.(1) NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC 9.29.5.2.(1) NBC Table 9.29.5.3. NBC D-1.5.1. NBC D-3.1.1. CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 3.1.6.6. 2) CNB 3.1.6.15. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB 9.29.5.2. 1) CNB Tableau 9.29.5.3. CNB D-1.5.1. CNB D-3.1.1.
ASTM	C1472-16	Standard Guide for Calculating Movement and Other Effects When Establishing Sealant Joint Width	NBC A-Table 5.9.1.1. NBC A-9.27.4.2.(1) CNB A-Tableau 5.9.1.1. CNB A-9.27.4.2. 1)
ASTM	C1658/C1658M- 48 <u>19e1</u>	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	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	C212- 4722	Standard Specification for Structural Clay Facing Tile	NBC Table 5.9.1.1. NBC 9.20.2.1.(1) CNB Tableau 5.9.1.1. CNB 9.20.2.1. 1)
ASTM	C260/C260M-10a	Standard Specification for Air-Entraining Admixtures for Concrete	NBC 9.3.1.8.(1) CNB 9.3.1.8. 1)
ASTM	C27-98	Standard Classification of Fireclay and High-Alumina Refractory Brick	NBC 9.21.3.4.(1) CNB 9.21.3.4. 1)
ASTM	C330/C330M- 4717a	Standard Specification for Lightweight Aggregates for Structural Concrete	NBC D-1.4.3. CNB D-1.4.3.
ASTM	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	C4-04	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile	NBC Table 5.9.1.1. NBC 9.14.3.1.(1) CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1)
ASTM	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	C412M- 4519	Standard Specification for Concrete Drain Tile	NBC Table 5.9.1.1. NBC 9.14.3.1.(1) CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1)
ASTM	C444M- 4721	Standard Specification for Perforated Concrete Pipe	NBC Table 5.9.1.1. NBC 9.14.3.1.(1) CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1)
ASTM	C494/C494M- 4719	Standard Specification for Chemical Admixtures for Concrete	NBC 9.3.1.8.(1) CNB 9.3.1.8. 1)
ASTM	C516- 08e419	Standard Specification for Vermiculite Loose Fill Thermal Insulation	NBC A-9.25.2.4.(5) CNB A-9.25.2.4. 5)
ASTM	C518- 4721	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	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.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	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	C700-18	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated	NBC Table 5.9.1.1. NBC 9.14.3.1.(1) CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1)
ASTM	C726-17	Standard Specification for Mineral Wool Roof Insulation Board	NBC Table 5.9.1.1. NBC 9.25.2.2.(1) CNB Tableau 5.9.1.1. CNB 9.25.2.2. 1)
ASTM	C73-17	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)	NBC Table 5.9.1.1. NBC 9.20.2.1.(1) CNB Tableau 5.9.1.1. CNB 9.20.2.1. 1)
ASTM	C754- 18 <u>20</u>	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	C834-17	Standard Specification for Latex Sealants	NBC Table 5.9.1.1. NBC 9.27.4.2.(2) CNB Tableau 5.9.1.1. CNB 9.27.4.2. 2)
ASTM	C840- 18 <u>20</u>	Standard Specification for Application and Finishing of Gypsum Board	NBC 3.1.6.6.(2) NBC Table 5.9.1.1. NBC 9.29.5.1.(3) NBC A-9.29.5.1.(3) NBC D-2.3.9. CNB 3.1.6.6. 2) CNB Tableau 5.9.1.1. CNB 9.29.5.1. 3) CNB A-9.29.5.1. 3) CNB D-2.3.9.
ASTM	C920-18	Standard Specification for Elastomeric Joint Sealants	NBC Table 5.9.1.1. NBC 9.27.4.2.(2) CNB Tableau 5.9.1.1. CNB 9.27.4.2. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	C954- 18 <u>22</u>	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	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	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	D1143/D1143M- 07 <u>20</u>	Standard Test Methods for Deep Foundations <u>Foundation Elements</u> Under Static Axial Compressive Load	NBC A-4.2.7.2.(2) CNB A-4.2.7.2. 2)
ASTM	D1227/D1227M- 13 <u>13e1</u>	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing	NBC Table 5.9.1.1. NBC 9.13.2.2.(2) NBC 9.13.3.2.(2) CNB Tableau 5.9.1.1. CNB 9.13.2.2. 2) CNB 9.13.3.2. 2)
ASTM	D1761- 12 <u>20</u>	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	D2178/D2178M- 13a <u>15a</u>	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing	NBC Table 5.9.1.1. CNB Tableau 5.9.1.1.
ASTM	D2466- 17 <u>21</u>	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	D2467- 15 <u>20</u>	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.
ASTM	D2898-10	Standard Practice for Accelerated Weathering of Fire-Retardant-Treated Wood for Fire Testing	NBC 9.10.14.5.(3) NBC 9.10.15.5.(3) NBC D-6.1.1. NBC 3.1.4.8.(3) NBC 3.1.5.5.(3) NBC 3.1.5.24.(1) NBC 3.1.6.9.(6) NBC 3.2.3.7.(4) CNB 3.1.4.8. 3) CNB 3.1.5.5. 3) CNB 3.1.5.24. 1) 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.

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	D3019/D3019M-17	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
ASTM	D3138- 04 <u>21</u>	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	D323- 15a <u>20a</u>	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	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	D3278- 96 <u>21</u>	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	D3679- 47 <u>21</u>	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Siding	NBC 9.27.12.1.(1) CNB 9.27.12.1. 1)
ASTM	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	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.
ASTM	D4477- 46 <u>22</u>	Standard Specification for Rigid (Unplasticized) Poly(Vinyl Chloride) (PVC) Soffit	NBC 9.27.12.1.(3) CNB 9.27.12.1. 3)
ASTM	D4479/D4479M- 07e4 <u>07</u>	Standard Specification for Asphalt Roof Coatings – Asbestos-Free	NBC Table 5.9.1.1. NBC 9.13.2.2.(2) NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B CNB Tableau 5.9.1.1. CNB 9.13.2.2. 2) CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B

Issuing Agency	Document Number	Title of Document	Code Reference
ASTM	D4637/D4637M-15	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
ASTM	D4811/D4811M-16	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
ASTM	D5/D5M- 4920	Standard Test Method for Penetration of Bituminous Materials	NFC A-4.1.3.1. CNPI A-4.1.3.1.
ASTM	D5456- 4921e1	Standard Specification for Evaluation of Structural Composite Lumber Products	NBC 3.1.11.7.(5) CNB 3.1.11.7. 5)
ASTM	D56- 46a21a	Standard Test Method for Flash Point by Tag Closed Cup Tester	NFC 4.1.3.1.(1) CNPI 4.1.3.1. 1)
ASTM	D6878/D6878M- 44a21	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
ASTM	D7254- 4721	Standard Specification for Polypropylene (PP) Siding	NBC 9.27.13.1.(1) CNB 9.27.13.1. 1)
ASTM	D7793- 4721	Standard Specification for Insulated Vinyl Siding	NBC 9.27.12.1.(2) CNB 9.27.12.1. 2)
ASTM	D8052/D8052M-17	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	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	D93- 4820	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	E1007- 4921	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	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	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)

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ASTM	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	E2190-19	Standard Specification for Insulating Glass Unit Performance and Evaluation	NBC Table 5.9.1.1. NBC 9.6.1.2.(1) CNB Tableau 5.9.1.1. CNB 9.6.1.2. 1)
ASTM	E2307- 15b 20	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 A-3.1.8.3.(2) NBC 9.10.9.2.(4) CNB 3.1.8.3. 4) CNB A-3.1.8.3. 2) CNB 9.10.9.2. 4)
ASTM	E2357-18	Standard Test Method for Determining Air Leakage Rate of Air Barrier Assemblies	NBC A-5.4.1.1.(3) NBC 9.36.2.9.(1) NBC A-9.36.2.9.(1) CNB A-5.4.1.1. 3) CNB 9.36.2.9. 1) CNB A-9.36.2.9. 1)
ASTM	E283/ <u>E283M-0419</u>	Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, <u>Skylights</u> , 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	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	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	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	E336- 14 20	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.

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ASTM	E413- 16 <u>22</u>	Classification for Rating Sound Insulation	NBC A-1.4.1.2.(1) of Division A 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) CNB A-1.4.1.2. 1) de la 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)
ASTM	E492-09e1	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.
ASTM	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	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	E736/E736M- 17 <u>19</u>	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	E779- 10 <u>19</u>	Standard Test Method for Determining Air Leakage Rate by Fan Pressurization	NECB 8.4.2.9.(2) CNÉB 8.4.2.9. 2)
ASTM	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	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)

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ASTM	E96/E96M- 16 22	Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate 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	F1667/ F1667M-18a 21a	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	F2090- 17 21	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	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.
ASTM	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	F628- 12e 22	Standard Specification for Acrylonitrile-Butadiene-Styrene (ABS) Schedule 40 Plastic Drain, Waste, and Vent Pipe With a Cellular Core	NPC 2.2.5.9.(1) NPC 2.2.5.11.(1) NPC A-2.2.5. to 2.2.8. CNP 2.2.5.9. 1) CNP 2.2.5.11. 1) CNP A-2.2.5. à 2.2.8.
ASTM	F714- 13 22	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	G115-10	Standard Guide for Measuring and Reporting Friction Coefficients	NBC 4.1.8.18.(18) CNB 4.1.8.18. 18)
AWS	ANSI/AWS A5.8M/A5.8:2011	Specification for Filler Metals for Brazing and Braze Welding	NPC 2.2.9.2.(4) CNP 2.2.9.2. 4)
AWWA	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	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	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)

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AWWA	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	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	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	2014	Building Envelope Thermal Bridging Guide	NECB A-3.1.1.5.(5)(a) CNÉB A-3.1.1.5. 5)a)
BNQ	BNQ 3624-115/2016	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage	NBC Table 5.9.1.1. NBC 9.14.3.1.(1)
BNQ	BNQ 3624-115/2016	Tuyaux et raccords en polyéthylène (PE) pour le drainage des sols et des fondations	CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1)
CCCBPI	CNRC 30620	Code national du bâtiment – Canada 1990	CNPI A-2.1.2.1. 1)
CCCBPI	CNRC 30630	Supplément du Code national du bâtiment du Canada 1990	CNB D-7.2. CNB D-7.3.
CCCBPI	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	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	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	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 7.3.2.1. 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) 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)
CCCBPI	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	CNRC 47666F	Code national du bâtiment – Canada 2005	CNPI A-2.1.3.1. 1)

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CCCBPI	CNRC 56190F	Code national du bâtiment – Canada 2015	CNB A-4.1.8.4. 3) CNB C
CCBFC	NRCC 30619	National Building Code of Canada 1990	NFC A-2.1.2.1.(1)
CCBFC	NRCC 30629	Supplement to the National Building Code of Canada 1990	NBC D-7.2. NBC D-7.3.
CCBFC	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
CCBFC	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	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	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 7.3.2.1.(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) 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)
CCBFC	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	NRCC 47666	National Building Code of Canada 2005	NFC A-2.1.3.1.(1)
CCBFC	NRCC 56190	National Building Code of Canada 2015	NBC A-4.1.8.4.(3) NBC C

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CCBFC	NRCC-CONST-56435E	National Building Code of Canada 2020	NFC 1.3.3.2.(1) of Division A NFC 7.1.1.4.(2) NFC 7.1.1.2.(2) NFC 7.1.1.2.(1) NFC 7.1.1.1.(1) NFC A-6.1.1.2.(1) NFC A-5.6.1.8. NFC A-5.6.1.6. NFC A-5.6.1.4.(4) NFC A-5.6.1.2.(1) NFC 5.6.4.3.(3) NFC 5.6.4.3.(1) NFC 5.6.4.1.(1) NFC 5.6.3.8. NFC 5.6.3.7.(3) NFC 5.6.3.7.(1) NFC 5.6.3.5.(1) NFC 5.6.3.4.(2) NFC 5.6.3.1.(1) NFC 5.6.1.20.(1) NFC 5.6.1.8.(2) NFC 5.6.1.6.(2) NFC 5.6.1.6.(1) NFC 5.5.4.4.(1) NFC 5.5.4.3.(1) NFC 5.5.4.2.(1) NFC 5.5.4.1.(1) NFC 5.5.2.2.(1) NFC 5.3.3.4.(1) NFC 5.1.3.1.(1) NFC A-4.2.7.5.(2) NFC A-4.1.7.1.(1) NFC 4.9.3.2.(1) NFC 4.6.3.3.(3) NFC 4.6.3.3.(2) NFC 4.5.8.2.(3) NFC 4.5.6.10.(2) NFC 4.3.3.2.(1) NFC 4.3.2.4.(2) NFC 4.2.12.1.(1) NFC 4.2.11.3.(1) NFC 4.2.9.5.(1) NFC 4.2.7.5.(2) NFC 4.2.4.3.(2) NFC 4.1.7.1.(1) NFC A-3.2.9.2.(5) NFC A-3.2.7.12.(3) NFC A-3.2.7.9.(1) NFC A-3.2.2.3.(5) NFC 3.3.2.5.(1) NFC 3.2.9.2.(5) NFC 3.2.9.2.(4) NFC 3.2.9.2.(3) NFC 3.2.9.2.(2) NFC 3.2.9.2.(1) NFC 3.2.8.3.(1)

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			NFC 3.2.8.2.(1) NFC 3.2.7.12.(3) NFC 3.2.7.8.(1) NFC 3.2.7.5.(7) NFC 3.2.7.5.(6) NFC 3.2.6.2.(1) NFC 3.2.4.2.(1) NFC 3.1.4.1.(1) NFC A-2.9.3.5.(1) NFC A-2.8.1.2.(2) NFC A-2.7.3.1.(1) NFC A-2.7.1.4.(2) NFC A-2.7.1.3.(1) NFC A-2.1.3.4.(1) NFC A-2.1.3.1.(1) NFC 2.14.3.2.(2) NFC 2.14.3.2.(1) NFC 2.14.3.1.(1) NFC 2.13.2.1.(1) NFC 2.11.1.1.(1) NFC 2.10.1.1.(1) NFC 2.9.3.6.(1) NFC 2.9.1.1.(1) NFC 2.8.3.2.(1) NFC 2.8.3.1.(1) NFC 2.8.2.12.(2) NFC 2.8.2.2.(1) NFC 2.8.1.1.(1) NFC 2.7.3.1.(1) NFC 2.7.1.4.(2) NFC 2.7.1.2.(1) NFC 2.7.1.1.(1) NFC 2.6.2.1.(1) NFC 2.6.1.9.(1) NFC 2.6.1.5.(1) NFC 2.6.1.1.(1) NFC 2.5.1.1.(1) NFC 2.4.1.2.(1) NFC 2.3.1.4.(1) NFC 2.3.1.2.(1) of Division C NFC 2.3.1.1.(1) NFC 2.2.3.1.(1) NFC 2.2.2.4.(2) NFC 2.2.2.1.(2) NFC 2.2.2.1.(1) NFC 2.2.1.1.(3) NFC 2.2.1.1.(2) NFC 2.2.1.1.(1) NFC 2.1.3.7.(1) NFC 2.1.3.4.(1) NFC 2.1.3.3.(1) NFC 2.1.3.2.(1) NFC 2.1.3.1.(1) NFC 2.1.2.1.(1) NFC A-3.2.1.1.(1) of Division A

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			NFC A-2.2.1.1.(1) of Division A NFC A-1.4.1.2.(1) of Division A NFC A-1.1.1.1.(1) of Division A NFC 1.4.1.2.(1) of Division A NPC 1.1.1.1.(3) of Division A NPC 1.4.1.2.(1) of Division A 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 2.4.3.1.(1) NPC 2.4.10.4.(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 A-3.2.1.1.(1) of Division A NECB 3.1.1.5.(1) NECB A-3.2.3.1.(3) 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-5.2.2.8.(2) NECB A-5.2.8.4.(1) NECB A-5.2.10.4.(1) NECB A-5.2.10.4.(5)

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CCCBPI	NRCC-CONST-56435F	Code national du bâtiment – Canada 2020	CNPI 3.2.7.12. 3) CNPI 3.2.7.8. 1) CNPI 3.2.7.5. 7) CNPI 3.2.7.5. 6) CNPI 3.2.6.2. 1) CNPI 3.2.4.2. 1) CNPI 3.1.4.1. 1) CNPI A-2.9.3.5. 1) CNPI A-2.8.1.2. 2) CNPI A-2.7.3.1. 1) CNPI A-2.7.1.4. 2) CNPI A-2.7.1.3. 1) CNPI A-2.1.3.4. 1) CNPI A-2.1.3.1. 1) CNPI 2.14.3.2. 2) CNPI 2.14.3.2. 1) CNPI 2.14.3.1. 1) CNPI 2.13.2.1. 1) CNPI 2.11.1.1. 1) CNPI 2.10.1.1. 1) CNPI 2.9.3.6. 1) CNPI 2.9.1.1. 1) CNPI 2.8.3.2. 1) CNPI 2.8.3.1. 1) CNPI 2.8.2.12. 2) CNPI 2.8.2.2. 1) CNPI 2.8.1.1. 1) CNPI 2.7.3.1. 1) CNPI 2.7.1.4. 2) CNPI 2.7.1.2. 1) CNPI 2.7.1.1. 1) CNPI 2.6.2.1. 1) CNPI 2.6.1.9. 1) CNPI 2.6.1.5. 1) CNPI 2.6.1.1. 1) CNPI 2.5.1.1. 1) CNPI 2.4.1.2. 1) CNPI 2.3.1.4. 1) CNPI 2.3.1.2. 1) de la division C CNPI 2.3.1.1. 1) CNPI 2.2.3.1. 1) CNPI 2.2.2.4. 2) CNPI 2.2.2.1. 2) CNPI 2.2.2.1. 1) CNPI 2.2.1.1. 3) CNPI 2.2.1.1. 2) CNPI 2.2.1.1. 1) CNPI 2.1.3.7. 1) CNPI 2.1.3.4. 1) CNPI 2.1.3.3. 1) CNPI 2.1.3.2. 1) CNPI 2.1.3.1. 1) CNPI 2.1.2.1. 1) CNPI A-3.2.1.1. 1) de la division A CNPI A-2.2.1.1. 1)

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			de la division A CNPI A-1.4.1.2. 1) de la division A CNPI A-1.1.1.1. 1) de la division A CNPI 1.4.1.2. 1) de la division A CNPI 1.3.3.2. 1) de la division A CNPI 7.1.1.4. 2) CNPI 7.1.1.2. 2) CNPI 7.1.1.2. 1) CNPI 7.1.1.1. 1) CNPI A-6.1.1.2. 1) CNPI A-5.6.1.8. CNPI A-5.6.1.6. CNPI A-5.6.1.4. 4) CNPI A-5.6.1.2. 1) CNPI 5.6.4.2. 3) CNPI 5.6.4.2. 1) CNPI 5.6.4.1. 1) CNPI 5.6.3.8. CNPI 5.6.3.7. 3) CNPI 5.6.3.7. 1) CNPI 5.6.3.5. 1) CNPI 5.6.3.4. 2) CNPI 5.6.3.1. 1) CNPI 5.6.1.20. 1) CNPI 5.6.1.8. 2) CNPI 5.6.1.6. 2) CNPI 5.6.1.6. 1) CNPI 5.5.4.4. 1) CNPI 5.5.4.3. 1) CNPI 5.5.4.2. 1) CNPI 5.5.4.1. 1) CNPI 5.5.2.2. 1) CNPI 5.3.3.4. 1) CNPI 5.1.3.1. 1) CNPI A-4.2.7.5. 2) CNPI A-4.1.7.1. 1) CNPI 4.9.3.2. 1) CNPI 4.6.3.3. 3) CNPI 4.6.3.3. 2) CNPI 4.5.8.2. 3) CNPI 4.5.6.10. 2) CNPI 4.3.3.2. 1) CNPI 4.3.2.4. 2) CNPI 4.2.12.1. 1) CNPI 4.2.11.3. 1) CNPI 4.2.9.5. 1) CNPI 4.2.7.5. 2) CNPI 4.2.4.3. 2) CNPI 4.1.7.1. 1) CNPI A-3.2.9.2. 5) CNPI A-3.2.7.12. 3) CNPI A-3.2.7.9. 1)

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			CNPI A-3.2.2.3. 5) CNPI 3.3.2.5. 1) CNPI 3.2.9.2. 5) CNPI 3.2.9.2. 4) CNPI 3.2.9.2. 3) CNPI 3.2.9.2. 2) CNPI 3.2.9.2. 1) CNPI 3.2.8.3. 1) CNPI 3.2.8.2. 1) CNP 1.1.1.1. 3) de la division A CNP 1.4.1.2. 1) de la division A 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 2.4.3.1. 1) CNP 2.4.10.4. 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 A-3.2.1.1. 1) de la division A CNÉB 3.1.1.5. 1) CNÉB A-3.2.3.1. 3) 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-5.2.2.8. 2) CNÉB A-5.2.8.4. 1) CNÉB A-5.2.10.4. 1) CNÉB A-5.2.10.4. 5)

Issuing Agency	Document Number	Title of Document	Code Reference
CCBFC	NRCC-CONST-56436E	National Plumbing Code of Canada 2020	NBC 2.1.1.2.(4) of Division A 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 5.6.2.2.(2) NBC 6.3.2.15.(8) NBC 6.3.2.15.(10) 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-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 A-3.2.1.1.(1) of Division A NECB A-5.2.10.4.(1) NECB 6.2.1.1.(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	NRCC-CONST-56436F	Code national de la plomberie – Canada 2020	CNB 2.1.1.2. 4) de la division A 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 5.6.2.2. 2) CNB 6.3.2.15. 8) CNB 6.3.2.15. 10) 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-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 A-3.2.1.1. 1) de la division A CNÉB A-5.2.10.4. 1) CNÉB 6.2.1.1. 1) CNÉB A-6.2.6.1. 1) CNÉB A-8.4.4.20. 6) CNÉB A-8.4.4.20. 7)

Issuing Agency	Document Number	Title of Document	Code Reference
CCBFC	NRCC-CONST-56437E	National Fire Code of Canada 2020	NBC 3.2.5.16.(1) NBC 3.3.1.2.(1) NBC 3.3.1.10.(1) NBC 3.3.2.3.(1) NBC 3.3.2.16.(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 A-3.1.2.3.(1) 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 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-9.10.2.2. NBC 1.4.1.2.(1) of Division A NBC A-1.1.1.1.(1) of Division A NBC 2.1.1.2.(4) of Division A NBC A-2.2.1.1.(1) of Division A NBC A-3.2.1.1.(1) of Division A NBC 1.1.4.1.(1) 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 A-2.2.8.4.(1) NBC 3.1.13.1.(1) NBC 3.2.3.21.(1) 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

Issuing Agency	Document Number	Title of Document	Code Reference
			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
CCCPI	NRCC-CONST-56437F	Code national de prévention des incendies – Canada 2020	CNB 1.4.1.2. 1) de la division A CNB A-1.1.1.1. 1) de la division A CNB 2.1.1.2. 4) de la division A CNB A-2.2.1.1. 1) de la division A CNB A-3.2.1.1. 1) de la division A CNB 1.1.4.1. 1) 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 A-2.2.8.4. 1) CNB 3.1.13.1. 1) CNB 3.2.3.21. 1) CNB 3.2.5.16. 1) CNB 3.3.1.2. 1) CNB 3.3.1.10. 1) CNB 3.3.2.3. 1) CNB 3.3.2.16. 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 A-3.1.2.3. 1) 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 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-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

Issuing Agency	Document Number	Title of Document	Code Reference
			CNÉB 1.4.1.2. 1) de la division A CNÉB A-3.2.1.1. 1) de la division A
CCBFC	NRCC-CONST-56438E	National Energy Code of Canada for Buildings 2020	NBC A-2.1.1.2.(6) of Division A NBC A-2.2.1.1.(1) of Division A NBC A-3.2.1.1.(1) of Division A NBC A-5.4.1. NBC A-2.2.8.1.(1) of Division C NBC 9.36.1.3.(1) NBC 9.36.1.3.(5) NBC 9.36.3.1.(2) NBC Table 9.36.3.10. NBC 9.36.4.1.(2) NBC 9.36.8.9.(2) NBC 9.36.8.10.(2) 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. 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

Issuing Agency	Document Number	Title of Document	Code Reference
CCCBPI	NRCC-CONST-56438F	Code national de l'énergie pour les bâtiments – Canada 2020	CNB A-2.1.1.2. 6) de la division A CNB A-2.2.1.1. 1) de la division A CNB A-3.2.1.1. 1) de la division A CNB A-5.4.1. CNB A-2.2.8.1. 1) de la division C CNB 9.36.1.3. 1) CNB 9.36.1.3. 5) CNB 9.36.3.1. 2) CNB Tableau 9.36.3.10. CNB 9.36.4.1. 2) CNB 9.36.8.9. 2) CNB 9.36.8.10. 2) 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. 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	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-Table 4.1.2.1. 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-Table 4.1.3.4. 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-4.1.5.5. NBC A-4.1.5.8. NBC A-4.1.5.17. NBC A-4.1.6.1.(1) NBC A-4.1.6.2. NBC A-4.1.6.3.(2) NBC A-4.1.6.4.(1) NBC A-4.1.6.16. NBC A-4.1.7.2.(2) NBC A-4.1.7.3.(5)(c) NBC A-4.1.7.3.(10) NBC A-4.1.7.7.(2) NBC A-4.1.7.9.(1) NBC A-4.1.7.13. NBC A-4.1.8.2.(1) 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-Table 4.1.8.5.-A NBC A-Table 4.1.8.6. NBC A-4.1.8.7.(1) NBC A-4.1.8.9.(4)

Issuing Agency	Document Number	Title of Document	Code Reference
			NBC A-4.1.8.9.(5) 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-4.1.8.10.(10)(a) 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.(4) 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-4.1.8.16.(10) NBC A-4.1.8.17.(1) NBC A-4.1.8.18. NBC A-4.1.8.18.(7)(e) 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-4.1.8.19.(3)(a) NBC A-4.1.8.19.(4) and 4.1.8.21.(5) NBC A-4.1.8.21.(4)(a) 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)

Issuing Agency	Document Number	Title of Document	Code Reference
			NBC A-5.1.4.2. NBC A-5.2.2.2.(4) NBC Table C-3

Issuing Agency	Document Number	Title of Document	Code Reference
CCCBPI	NRCC-CONST-56529F	Commentaires sur le calcul des structures (Guide de l'utilisateur – CNB 2020 : Partie 4 de la division 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. 1) CNB A-4.1.8.15. 3) 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. 6)a) CNB A-4.1.8.16. 7) CNB A-4.1.8.16. 8)a) CNB A-4.1.8.16. 10) CNB A-4.1.8.17. 1) CNB A-4.1.8.18. CNB A-4.1.8.18. 7)e) CNB A-4.1.8.18. 13) et 4.4.3.1. 1) CNB A-4.1.8.18. 14) et 15) CNB A-4.1.8.18. 16) CNB A-4.1.8.19. 3)a) CNB A-4.1.8.19. 4) et 4.1.8.21. 5) CNB A-4.1.8.21. 4)a) 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 Tableau C-3 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)

Issuing Agency	Document Number	Title of Document	Code Reference
			CNB A-Tableau 4.1.2.1. 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-Tableau 4.1.3.4. CNB A-4.1.3.5. 1) CNB A-4.1.3.5. 3) CNB A-4.1.3.6. 1) CNB A-4.1.3.6. 2) CNB A-4.1.3.6. 3) CNB A-4.1.3.6. 4) CNB A-4.1.5.5. CNB A-4.1.5.8. CNB A-4.1.5.17. CNB A-4.1.6.1. 1) CNB A-4.1.6.2. CNB A-4.1.6.3. 2) CNB A-4.1.6.4. 1) CNB A-4.1.6.16. CNB A-4.1.7.2. CNB A-4.1.7.3. 5)c) CNB A-4.1.7.3. 10) CNB A-4.1.7.7. 2) CNB A-4.1.7.9. 1) CNB A-4.1.7.13. CNB A-4.1.8.2. 1) 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- Tableau 4.1.8.5.-A CNB A- Tableau 4.1.8.6. CNB A-4.1.8.7. 1) CNB A-4.1.8.9. 4) CNB A-4.1.8.9. 5) 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-4.1.8.10. 10)a) CNB A-4.1.8.11. 3) CNB

Issuing Agency	Document Number	Title of Document	Code Reference
			A-4.1.8.12. 1)a) CNB A-4.1.8.12. 1)b)
CCME	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	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)
CFA	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	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	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	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	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	CAN/CGSB-11.3-M87	Hardboard	NBC Table 5.9.1.1. NBC 9.29.7.1.(1) NBC 9.30.2.2.(1)
ONGC	CAN/CGSB-11.3-M87	Panneaux de fibres durs	CNB Tableau 5.9.1.1. CNB 9.29.7.1. 1) CNB 9.30.2.2. 1)
CGSB	CAN/CGSB-12.10-M76	Glass, Light and Heat Reflecting	NBC 9.6.1.2.(1)
ONGC	CAN/CGSB-12.10-M76	Verre réflecteur de lumière et de chaleur	CNB 9.6.1.2. 1)
CGSB	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	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)

Issuing Agency	Document Number	Title of Document	Code Reference
CGSB	CAN/CGSB-12.1- 2017 2022	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 Table 5.9.1.1. NBC 9.6.1.2.(1) NBC 9.6.1.4.(1) NBC 9.6.1.4.(6) NBC 9.8.8.7.(1)
ONGC	CAN/CGSB-12.1- 2017 2022	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 Tableau 5.9.1.1. CNB 9.6.1.2. 1) CNB 9.6.1.4. 1) CNB 9.6.1.4. 6) CNB 9.8.8.7. 1)
CGSB	CAN/CGSB-12.2-M91	Flat, Clear Sheet Glass	NBC Table 5.9.1.1. NBC 9.6.1.2.(1)
ONGC	CAN/CGSB-12.2-M91	Verre à vitres plat et clair	CNB Tableau 5.9.1.1. CNB 9.6.1.2. 1)
CGSB	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	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	CAN/CGSB-12.3-M91	Flat, Clear Float Glass	NBC Table 5.9.1.1. NBC 9.6.1.2.(1)
ONGC	CAN/CGSB-12.3-M91	Verre flotté, plat et clair	CNB Tableau 5.9.1.1. CNB 9.6.1.2. 1)
CGSB	CAN/CGSB-12.4-M91	Heat Absorbing Glass	NBC Table 5.9.1.1. NBC 9.6.1.2.(1)
ONGC	CAN/CGSB-12.4-M91	Verre athermane	CNB Tableau 5.9.1.1. CNB 9.6.1.2. 1)
CGSB	CAN/CGSB-12.8- 97 17	Insulating glass units	NBC Table 5.9.1.1. NBC 9.6.1.2.(1)
ONGC	CAN/CGSB-12.8- 97 17	Vitrages isolants	CNB Tableau 5.9.1.1. CNB 9.6.1.2. 1)
CGSB	CAN/CGSB-12.9-M91	Spandrel glass	NBC Table 5.9.1.1. NBC 9.6.1.2.(1)
ONGC	CAN/CGSB-12.9-M91	Verre de tympan	CNB Tableau 5.9.1.1. CNB 9.6.1.2. 1)

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CGSB	CAN/CGSB-149.10-2019	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	CAN/CGSB-149.10-2019	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	CAN/CGSB-1.501-M89	Method for Permeance of Coated Wallboard	NBC 5.5.1.2.(2) NBC 9.25.4.2.(7)
ONGC	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	CAN/CGSB-19.22-M89	Mildew-Resistant Sealing Compound for Tubs and Tiles	NBC 9.29.10.5.(1)
ONGC	CAN/CGSB-19.22-M89	Mastic d'étanchéité, résistant à la moisissure, pour baignoires et carreaux	CNB 9.29.10.5. 1)
CGSB	CAN/CGSB-37.50-M89	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B
ONGC	CAN/CGSB-37.50-M89	Bitume caoutchouté, appliqué à chaud, pour le revêtement des toitures et l'imperméabilisation à l'eau	CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
CGSB	CAN/CGSB-37.51-M90	Application for Hot-Applied Rubberized Asphalt for Roofing and Waterproofing	NBC 9.26.15.1.(1)
ONGC	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	CAN/CGSB-37.54-95	Polyvinyl Chloride Roofing and Waterproofing Membrane	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B
ONGC	CAN/CGSB-37.54-95	Membrane de poly(chlorure de vinyle) pour le revêtement de toitures et l'imperméabilisation à l'eau	CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
CGSB	CAN/CGSB-37.58-M86	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B
ONGC	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 Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
CGSB	CAN/CGSB-41.24-95	Rigid Vinyl Siding, Soffits and Fascia	NBC Table 5.9.1.1.
ONGC	CAN/CGSB-41.24-95	Bardages, soffites et bordures de toit en vinyle rigide	CNB Tableau 5.9.1.1.
CGSB	CAN/CGSB-4.129-93	Carpet for Commercial Use	NBC D-3.1.1.
ONGC	CAN/CGSB-4.129-93	Tapis pour utilisation commerciale	CNB D-3.1.1.
CGSB	CAN/CGSB-51.25-M87	Thermal Insulation, Phenolic, Faced	NBC Table 9.23.17.2.A NBC 9.25.2.2.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ONGC	CAN/CGSB-51.25-M87	Isolant thermique phénolique, avec revêtement	CNB Tableau 9.23.17.2.A CNB 9.25.2.2. 1)
CGSB	CAN/CGSB-51.32-M77	Sheathing, Membrane, Breather Type	NBC Table 5.9.1.1. NBC 9.20.13.9.(1) NBC Table 9.26.2.1.A NBC 9.27.3.2.(1)
ONGC	CAN/CGSB-51.32-M77	Membrane de revêtement, perméable à la vapeur d'eau	CNB Tableau 5.9.1.1. CNB 9.20.13.9. 1) CNB Tableau 9.26.2.1.A CNB 9.27.3.2. 1)
CGSB	CAN/CGSB-51.33-M89	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction	NBC Table 5.9.1.1. NBC 9.25.4.2.(5) NBC A-9.25.4.2.(6)
ONGC	CAN/CGSB-51.33-M89	Pare-vapeur en feuille, sauf en polyéthylène, pour bâtiments	CNB Tableau 5.9.1.1. CNB 9.25.4.2. 5) CNB A-9.25.4.2. 6)
CGSB	CAN/CGSB-51.34-M862022	Vapour Barrier , Polyethylene Sheet sheet for Use use in Building building Construction construction – Material specification	NBC Table 5.9.1.1. 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)
ONGC	CAN/CGSB-51.34-M862022	Pare-vapeur en feuille Feuille de polyéthylène pour bâtiments – Spécifications du matériau	CNB Tableau 5.9.1.1. 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)
CGSB	CAN/CGSB-51.71-2005	Depressurization Test	NBC 9.32.3.8.(7)
ONGC	CAN/CGSB-51.71-2005	Essai de dépressurisation	CNB 9.32.3.8. 7)
CGSB	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	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	CAN/CGSB-7.2-94	Adjustable Steel Columns	NBC 9.17.3.4.(1) NBC A-9.17.3.4.
ONGC	CAN/CGSB-7.2-94	Poteaux d'acier réglables	CNB 9.17.3.4. 1) CNB A-9.17.3.4.
CGSB	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	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)
CGSB	CAN/CGSB-92.2-M90	Trowel or Spray Applied Acoustical Material	NBC D-2.3.4.
ONGC	CAN/CGSB-92.2-M90	Matières acoustiques appliquées à la truelle ou au vaporisateur	CNB D-2.3.4.

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CGSB	CAN/CGSB-93.1-M85	Sheet, Aluminum Alloy, Prefinished, Residential	NBC Table 5.9.1.1. NBC 9.27.11.1.(3) NBC A-9.27.11.1.(2) and (3)
ONGC	CAN/CGSB-93.1-M85	Tôle d'alliage d'aluminium préfinie, pour bâtiments résidentiels	CNB Tableau 5.9.1.1. CNB 9.27.11.1. 3) CNB A-9.27.11.1. 2) et 3)
CGSB	CAN/CGSB-93.2-M91	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use	NBC 3.2.3.6.(5) NBC Table 5.9.1.1. NBC 9.10.14.5.(8) NBC 9.10.14.5.(12) NBC 9.10.15.5.(7) NBC 9.10.15.5.(11) NBC 9.27.11.1.(2) NBC A-9.27.11.1.(2) and (3)
ONGC	CAN/CGSB-93.2-M91	Bardage, soffites et bordures de toit en aluminium préfini pour bâtiments résidentiels	CNB 3.2.3.6. 5) CNB Tableau 5.9.1.1. CNB 9.10.14.5. 8) CNB 9.10.14.5. 12) CNB 9.10.15.5. 7) CNB 9.10.15.5. 11) CNB 9.27.11.1. 2) CNB A-9.27.11.1. 2) et 3)
ONGC	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	CAN2-4.162-M80 (formerly CAN/CGSB-4.162-M80)	Hospital Textiles – Flammability Performance Requirements	NFC 2.3.2.3.(1)
CGSB	37-GP-55M-1979	Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane	NBC 9.26.16.1.(1)
ONGC	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	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	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
CGSB	37-GP-9Ma-1983	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.A

Issuing Agency	Document Number	Title of Document	Code Reference
ONGC	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 Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.A
CGSB	4-GP-36M-1978	Carpet Underlay, Fiber Type	NBC D-3.1.1.
ONGC	4-GP-36M-1978	Thibaude, type fibre	CNB D-3.1.1.
CGSB	51-GP-27M-1979	Thermal Insulation, Polystyrene, Loose Fill	NBC 9.25.2.2.(1)
ONGC	51-GP-27M-1979	Isolant thermique, polystyrène, à bourrage lâche	CNB 9.25.2.2. 1)
CISC	2018	Crane-Supporting Steel Structures: Design Guide (Third Edition)	NBC A-4.1.3.2.(2) CNB A-4.1.3.2. 2)
CMHC	1988	Air Permeance of Building Materials	NBC Table A-9.25.5.1.(1)
SCHL	1988	Perméance des matériaux de construction à l'air	CNB Tableau A-9.25.5.1. 1)
CMHC	1993	Testing of Fresh Air Mixing Devices	NBC A-9.32.3.4.
SCHL	1993	Essais de mélangeurs d'air frais	CNB A-9.32.3.4.
CCSN	L.C. 1997, ch. 9	Loi sur la sûreté et la réglementation nucléaires	CNPI 3.1.1.2. 1)
CNSC	S.C. 1997, c. 9	Nuclear Safety and Control Act	NFC 3.1.1.2.(1)
CSA	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 A-5.3.1.2. NBC A-5.9.2.3.(1) NBC A-5.9.3.1.(1) NBC Table 9.7.3.3. 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 9.36.2.9.(3) NBC A-9.7.4.2.(1) NECB 3.2.4.3.(4) NECB 3.2.4.3.(5)
CSA	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 A-5.3.1.2. CNB A-5.9.2.3. 1) CNB A-5.9.3.1. 1) CNB Tableau 9.7.3.3. 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 9.36.2.9. 3) CNB A-9.7.4.2. 1) CNÉB 3.2.4.3. 4) CNÉB 3.2.4.3. 5)
CSA	ANSI/CSA-B149.6-15	Code for digester gas, landfill gas, and biogas generation and utilization	NBC 2.2.8.1.(3)
CSA	ANSI/CSA-B149.6-15	Code visant la production et l'utilisation des gaz de digestion, gaz d'enfouissement et biogaz	CNB 2.2.8.1. 3)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	A123.17-05	Asphalt Glass Felt Used in Roofing and Waterproofing	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
CSA	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	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	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	A123.3-05	Asphalt Saturated Organic Roofing Felt	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B
CSA	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	A123.51-14	Asphalt shingle application on roof slopes 1:6 and steeper	NBC Table 5.9.1.1. NBC 9.26.1.3.(1)
CSA	A123.51-14	Pose de bardeaux d'asphalte sur des pentes de toit de 1:6 et plus	CNB Tableau 5.9.1.1. CNB 9.26.1.3. 1)
CSA	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	A123.5:16	Bardeaux d'asphalte en feutre de fibres de verre et à surfacage minéral	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B
CSA	A165.1-14	Concrete block masonry units	NBC Table 5.9.1.1. 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 Table A-9.11.1.4.A NBC Table A-9.11.1.4.C NBC D-2.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	A165.1-14	Éléments de maçonnerie en bloc de béton	CNB Tableau 5.9.1.1. 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 Tableau A-9.11.1.4.A CNB Tableau A-9.11.1.4.C CNB D-2.1.1.
CSA	A165.2-14	Concrete Brick Masonry Units	NBC Table 5.9.1.1. NBC 9.20.2.1.(1)
CSA	A165.2-14	Briques en béton	CNB Tableau 5.9.1.1. CNB 9.20.2.1. 1)
CSA	A165.3-14	Prefaced concrete masonry units	NBC Table 5.9.1.1. NBC 9.20.2.1.(1)
CSA	A165.3-14	Éléments de maçonnerie en béton glacés	CNB Tableau 5.9.1.1. CNB 9.20.2.1. 1)
CSA	A23.1:19	Concrete materials and methods of concrete construction	NBC 4.2.3.6.(1) NBC 4.2.3.9.(1) NBC Table 5.9.1.1. 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 2.3.2.5.(5)
CSA	A23.1:19	Béton : constituants et exécution des travaux	CNB 2.3.2.5. 5) CNB 4.2.3.6. 1) CNB 4.2.3.9. 1) CNB Tableau 5.9.1.1. CNB 9.3.1.1. 1) CNB 9.3.1.1. 4) CNB 9.3.1.3. 1) CNB 9.3.1.4. 1)
CSA	A23.1:19/A23.2:19	Concrete materials and methods of concrete construction/Test methods and standard practices for concrete	NBC D-1.4.3.
CSA	A23.1:19/A23.2:19	Béton : constituants et exécution des travaux/Procéures d'essai et pratiques normalisées pour le béton	CNB D-1.4.3.
CSA	A23.3:19	Design of concrete structures	NBC Table 4.1.8.9. 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.

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CSA	A23.3:19	Calcul des ouvrages en béton	CNB Tableau 4.1.8.9. 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.
CSA	A23.4-16	Precast concrete – Materials and construction	NBC A-4.3.3.1.(1)
CSA	A23.4-16	Béton préfabriqué – Constituants et exécution des travaux	CNB A-4.3.3.1. 1)
CSA	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	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	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	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)
CSA	A277-16	Procedure for certification of prefabricated buildings, modules, and panels	NBC A-1.1.1.1.(2) of Division A
CSA	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	A3001-18	Cementitious Materials for Use in Concrete	NBC Table 5.9.1.1. NBC 9.3.1.2.(1) NBC 9.28.2.1.(1)
CSA	A3001-18	Matériaux liants utilisés dans le béton	CNB Tableau 5.9.1.1. CNB 9.3.1.2. 1) CNB 9.28.2.1. 1)
CSA	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 A-5.9.2.2. NBC A-5.9.3.5.(3) NBC 9.7.4.2.(1) NBC 9.36.2.9.(3) NBC A-9.7.4.2.(1)

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CSA	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 A-5.9.2.2. CNB A-5.9.3.5. 3) CNB 9.7.4.2. 1) CNB 9.36.2.9. 3) CNB A-9.7.4.2. 1)
CSA	A440.2:19	Fenestration energy performance	NBC A-5.3.1.2. NBC A-5.9.3.3.(1) NBC Table 9.36.8.6. NBC A-9.7.4.2.(1)
CSA	A440.2:19	Rendement énergétique des systèmes de fenêtrage	CNB A-5.3.1.2. CNB A-5.9.3.3. 1) CNB Tableau 9.36.8.6. CNB A-9.7.4.2. 1)
CSA	A440.2:19/A440.3:19	Fenestration energy performance/User guide to CSA A440.2:19, Fenestration energy performance	NBC Table 9.7.3.3. NBC 9.36.2.2.(3) NBC A-Table 9.36.2.7.-A NECB 3.1.1.5.(3) NECB A-3.1.1.6.(1)
CSA	A440.2:19/A440.3:19	Rendement énergétique des systèmes de fenêtrage/Guide d'utilisation de CSA A440.2:19, Rendement énergétique des systèmes de fenêtrage	CNB Tableau 9.7.3.3. CNB 9.36.2.2. 3) CNB A-Tableau 9.36.2.7.-A CNÉB 3.1.1.5. 3) CNÉB A-3.1.1.6. 1)
CSA	A440.3:19	User guide to CSA A440.2:19, Fenestration energy performance	NBC A-5.3.1.2.
CSA	A440.3:19	Guide d'utilisation de CSA A440.2:19, Rendement énergétique des systèmes de fenêtrage	CNB A-5.3.1.2.
CSA	A440.4:19	Window, door, and skylight installation	NBC A-5.9.2.3.(1) NBC 9.7.6.1.(1) NBC A-9.7.4.2.(1)
CSA	A440.4:19	Installation des fenêtres, des portes et des lanterneaux	CNB A-5.9.2.3. 1) CNB 9.7.6.1. 1) CNB A-9.7.4.2. 1)
CSA	A60.1-M1976	Vitrified Clay Pipe	NPC 2.2.5.3.(1) NPC A-2.2.5. to 2.2.8.
CSA	A60.1-M1976	Tuyaux en grès vitrifié	CNP 2.2.5.3. 1) CNP A-2.2.5. à 2.2.8.
CSA	A60.3-M1976	Vitrified Clay Pipe Joints	NPC 2.2.5.3.(2)
CSA	A60.3-M1976	Joints des tuyaux en grès vitrifié	CNP 2.2.5.3. 2)
CSA	A660-10	Certification of manufacturers of steel building systems	NBC 4.3.4.3.(1)
CSA	A660-10	Certification des fabricants de systèmes de bâtiment en acier	CNB 4.3.4.3. 1)

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CSA	A82.22-M1977	Gypsum Plasters	NBC D-3.1.1. CNB D-3.1.1.
CSA	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	A82.31-M1980	Gypsum Board Application	NBC 3.2.3.6.(5) NBC 9.10.9.2.(5) NBC 9.10.12.4.(3) NBC 9.10.14.5.(8) NBC 9.10.14.5.(12) NBC 9.10.15.5.(7) NBC 9.10.15.5.(11) NBC 9.29.5.1.(2) NBC Table 9.10.3.1.-A
CSA	A82.31-M1980	Pose des plaques de plâtre	CNB 3.2.3.6. 5) CNB 9.10.9.2. 5) CNB 9.10.12.4. 3) CNB 9.10.14.5. 8) CNB 9.10.14.5. 12) CNB 9.10.15.5. 7) CNB 9.10.15.5. 11) CNB 9.29.5.1. 2) CNB Tableau 9.10.3.1.-A
CSA	B108- 18 :21	Natural CSA B108.1:21, Compressed natural gas refuelling stations installation code/CSA B108.2:21, Liquefied natural gas refueling stations installation code	NFC 4.6.1.1.(2)
CSA	B108- 18 :21	CSA B108.1:21, Code d'installation de pour centres de ravitaillement en gaz naturel comprimé/CSA B108.2:21, Code d'installation des centres de ravitaillement en gaz naturel liquéfié	CNPI 4.6.1.1. 2)
CSA	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

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	B125.3-18	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	B137.10- 47:20	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	B137.11- 47:20	Polypropylene (PP-R) 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	B137.1- 47:20	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.
CSA	B137.18- 47:20	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	B137.2- 47:20	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	B137.3- 47:20	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.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	B137.5- 17 :20	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	B137.6- 17 :20	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	B137.9- 17 :20	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	B139 Series:19	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 A-4.1.1.1.(3)(b) NFC A-4.3.13.4.(1)(b) NFC 5.6.1.10.(1)
CSA	B139 Série:19	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 A-4.1.1.1. 3)b) CNPI A-4.3.13.4. 1)b) CNPI 5.6.1.10. 1)
CSA	B140.12-03	Oil-Burning Equipment: Service Water Heaters for Domestic Hot Water, Space Heating, and Swimming Pools	NBC Table 9.36.4.2. NECB Table 6.2.2.1.
CSA	B140.12-03	Appareils de combustion 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.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	B140.4:04	Oil-Fired Warm Air Furnaces	NBC Table 9.36.3.10. NECB Table 5.2.12.1.O
CSA	B140.4:04	Générateurs d'air chaud alimentés au mazout	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-O
CSA	B149.1- 15 :20	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	B149.1- 15 :20	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	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	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)
CSA	B158.1-1976	Cast Brass Solder Joint Drainage, Waste and Vent Fittings	NPC 2.2.10.1.(1)
CSA	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	B181.1- 18 :21	Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings	NPC 2.2.5.9.(1) NPC 2.2.5.10.(1) NPC 2.2.5.11.(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	B181.1- 18 :21	Acrylonitrile-butadiene-styrene (ABS) drain, waste, and vent pipe and pipe fittings	CNP 2.2.5.9. 1) CNP 2.2.5.10. 1) CNP 2.2.5.11. 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.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	B181.2-48:21	Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings	NPC 2.2.5.9.(1) 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 2.4.6.4.(5) NPC A-2.2.5. to 2.2.8. NPC A-2.2.5.9. to 2.2.5.11.
CSA	B181.2-48:21	Polyvinylchloride (PVC) and chlorinated polyvinylchloride (CPVC) drain, waste, and vent pipe and pipe fittings	CNP 2.2.5.9. 1) 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 2.4.6.4. 5) CNP A-2.2.5. à 2.2.8. CNP A-2.2.5.9. à 2.2.5.11.
CSA	B181.3-48:21	Polyolefin and polyvinylidene fluoride (PVDF) laboratory drainage systems	NPC 2.2.8.1.(1) NPC A-2.2.5. to 2.2.8.
CSA	B181.3-48:21	Polyolefin and polyvinylidene fluoride (PVDF) laboratory drainage systems	CNP 2.2.8.1. 1) CNP A-2.2.5. à 2.2.8.
CSA	CAN/CSA-B182.1-48:21	Plastic drain and sewer pipe and pipe fittings	NBC Table 5.9.1.1. NBC 9.14.3.1.(1) NPC 2.2.5.9.(1) NPC 2.4.6.4.(5) NPC A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.1-48:21	Plastic drain and sewer pipe and pipe fittings	CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1) CNP 2.2.5.9. 1) CNP 2.4.6.4. 5) CNP A-2.2.5. à 2.2.8.
CSA	CAN/CSA-B182.2-48:21	PSM type polyvinylchloride (PVC) sewer pipe and fittings	NPC 2.2.5.9.(1) NPC A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.2-48:21	PSM Tuyaux d'égout et raccords en poly(chlorure de vinyle) (PVC) de type polyvinylchloride (PVC) sewer pipe and fittings PSM	CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
CSA	CAN/CSA-B182.4-48:21	Profile polyvinylchloride (PVC) sewer pipe and fittings	NPC 2.2.5.9.(1) NPC A-2.2.5. to 2.2.8.
CSA	CAN/CSA-B182.4-48:21	Profile Tuyaux polyvinylchloride (d'égout à paroi profilée et raccords en poly(chlorure de vinyle) (PVC) sewer pipe and fittings)	CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
CSA	CAN/CSA-B182.6-48:21	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.

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CSA	CAN/CSA-B182.6-18:21	Profile Tuyaux polyéthylène d'égout à paroi profilée et raccords en polyéthylène (PE) sewer pour pipe égouts and fittings for leak-proof sewer applications étanches	CNP 2.2.5.9. 1) CNP A-2.2.5. à 2.2.8.
CSA	CAN/CSA-B182.8-18:21	Profile polyethylene (PE) storm sewer and drainage pipe and fittings	NPC 2.2.5.9.(1)
CSA	CAN/CSA-B182.8-18:21	Profile Tuyaux polyéthylène d'évacuation et d'égout à paroi profilée et raccords en polyéthylène (PE)-storm sewer and drainage pipe and fittings)	CNP 2.2.5.9. 1)
CSA	B214-16:21	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	B214-16:21	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	B242-05	Groove- and Shoulder-Type Mechanical Pipe Couplings	NPC 2.2.10.4.(1)
CSA	B242-05	Raccords mécaniques pour tuyaux à rainure et à épaulement	CNP 2.2.10.4. 1)
CSA	B272-93	Prefabricated Self-Sealing Roof Vent Flashings	NPC 2.2.10.14.(2)
CSA	B272-93	Solins d'évent de toit étanches préfabriqués	CNP 2.2.10.14. 2)
CSA	B306-M1977	Portable Fuel Tanks for Marine Use	NFC 4.2.3.1.(1)
CSA	B306-M1977	Réservoirs de carburant portatifs pour bateaux	CNPI 4.2.3.1. 1)
CSA	B346-M1980	Power-Operated Dispensing Devices for Flammable Liquids	NFC 4.6.3.1.(1) CNPI 4.6.3.1. 1)
CSA	B355:19	Platform lifts and stair lifts for barrier-free access	NBC 3.8.3.7.(1)
CSA	B355:19	Plates-formes et appareils élévateurs d'escalier pour un accès sans obstacles	CNB 3.8.3.7. 1)
CSA	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	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	B376-M1980:22	Portable Containers containers for Gasoline gasoline and Other other Petroleum petroleum Fuels fuels	NFC 4.2.3.1.(1)
CSA	B376-M1980:22	Réservoirs portatifs pour l'essence et autres combustibles de pétrole	CNPI 4.2.3.1. 1)
CSA	B415.1-10:22	Performance Testing testing of Solid solid-Fuel biofuel Burning burning Heating heating Appliances appliances	NBC Table 9.36.3.10. NECB Table 5.2.12.1.P

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CSA	B415.1- 40 : <u>22</u>	Essais de rendement des appareils de chauffage à combustibles <u>biocombustibles</u> solides	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-P
CSA	B481.0-12	Material, design, and construction requirements for grease interceptors	NPC 2.2.3.2.(3)
CSA	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	B481.3-12	Sizing, selection, location, and installation of grease interceptors	NPC 2.2.3.2.(3)
CSA	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)
CSA	B481.4-12	Maintenance of grease interceptors	NPC A-2.2.3.2.(3)
CSA	B481.4-12	Entretien des séparateurs de graisses	CNP A-2.2.3.2. 3)
CSA	B51:19	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	B51:19	Code sur les chaudières, les appareils et les tuyauteries sous pression	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	B52:18	Mechanical refrigeration code	NBC 6.2.1.5.(1) NBC 9.33.5.2.(1)
CSA	B52:18	Code sur la réfrigération mécanique	CNB 6.2.1.5. 1) CNB 9.33.5.2. 1)
CSA	B55.1:15	Test method for measuring efficiency and pressure loss of drain water heat recovery units	NBC 9.36.5.12.(2)
CSA	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	B602- 46 : <u>20</u>	Mechanical couplings for drain, waste, and vent pipe and sewer pipe	NPC 2.2.10.4.(2)
CSA	B602- 46 : <u>20</u>	Joints mécaniques pour tuyaux d'évacuation, de ventilation et d'égout	CNP 2.2.10.4. 2)
CSA	B620-14	Highway tanks and TC portable tanks for the transportation of dangerous goods	NFC 4.2.3.1.(1)
CSA	B620-14	Citernes routières et citernes amovibles TC pour le transport des marchandises dangereuses	CNPI 4.2.3.1. 1)
CSA	B64.0- 44 : <u>21</u>	Definitions, general requirements, and test methods for vacuum breakers and backflow preventers	NPC 2.2.10.10.(1)
CSA	B64.0- 44 : <u>21</u>	Définitions, exigences générales et méthodes d'essai relatives aux casse-vide et aux dispositifs antirefoulement	CNP 2.2.10.10. 1)
CSA	B64.10-17	Selection and installation of backflow preventers	NPC 2.6.2.1.(3)
CSA	B64.10-17	Sélection et installation des dispositifs antirefoulement	CNP 2.6.2.1. 3)
CSA	B64.1.1- 44 : <u>21</u>	Atmospheric vacuum breakers (AVB)	NPC 2.2.10.10.(1)
CSA	B64.1.1- 44 : <u>21</u>	Casse-vide atmosphériques (C-VA)	CNP 2.2.10.10. 1)
CSA	B64.1.2- 44 : <u>21</u>	Pressure vacuum breakers (PVB)	NPC 2.2.10.10.(1)

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CSA	B64.1.2-44:21	Casse-vide à pression (C-VP)	CNP 2.2.10.10. 1)
CSA	B64.1.3-44:21	Spill-resistant pressure vacuum breakers (SRPVB)	NPC 2.2.10.10.(1)
CSA	B64.1.3-44:21	Casse-vide à pression antidéversement (C-VPAD)	CNP 2.2.10.10. 1)
CSA	B64.2-44:21	Hose connection vacuum breakers (HCVB)	NPC 2.2.10.10.(1)
CSA	B64.2-44:21	Casse-vide à raccordement de flexible (C-VRF)	CNP 2.2.10.10. 1)
CSA	B64.2.1-44:21	Hose connection vacuum breakers (HCVB) with manual draining feature	NPC 2.2.10.10.(1)
CSA	B64.2.1-44:21	Casse-vide à raccordement de flexible (C-VRF) à vidange manuelle	CNP 2.2.10.10. 1)
CSA	B64.2.2-44:21	Hose connection vacuum breakers (HCVB) with automatic draining feature	NPC 2.2.10.10.(1)
CSA	B64.2.2-44:21	Casse-vide à raccordement de flexible (C-VRF) à vidange automatique	CNP 2.2.10.10. 1)
CSA	B64.3-44:21	Dual check valve backflow preventers with atmospheric port (DCAP)	NPC 2.2.10.10.(1)
CSA	B64.3-44:21	Dispositifs antirefoulement à deux clapets de retenue à orifice de décharge (DAROD)	CNP 2.2.10.10. 1)
CSA	B64.4-44:21	Reduced pressure principle (RP) backflow preventers	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2)
CSA	B64.4-44:21	Dispositif antirefoulement à pression réduite (DARPR)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2)
CSA	B64.4.1-44:21	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	B64.4.1-44:21	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	B64.5-44:21	Double check valve (DCVA) backflow preventers	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2)
CSA	B64.5-44:21	Dispositifs antirefoulement à deux clapets de retenue et robinets (DAR2CR)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2)
CSA	B64.5.1-44:21	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	B64.5.1-44:21	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	B64.6-44:21	Dual check valve (DuC) backflow preventers	NPC 2.2.10.10.(1) NPC 2.6.2.4.(2)
CSA	B64.6-44:21	Dispositifs antirefoulement à deux clapets de retenue (DAR2C)	CNP 2.2.10.10. 1) CNP 2.6.2.4. 2)
CSA	B64.6.1-44:21	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	B64.6.1-44:21	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	B64.7-44:21	Laboratory faucet vacuum breakers (LFVB)	NPC 2.2.10.10.(1)

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CSA	B64.7- 44 :21	Casse-vidé pour robinet de laboratoire (C-VRL)	CNP 2.2.10.10. 1)
CSA	B64.8- 44 :21	Dual check valve backflow preventers with intermediate vent (DuCV)	NPC 2.2.10.10.(1)
CSA	B64.8- 44 :21	Dispositif antirefoulement à deux clapets de retenue à ventilation intermédiaire (DAR2CV)	CNP 2.2.10.10. 1)
CSA	B64.9- 44 :21	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	B64.9- 44 :21	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	B651-18	Accessible design for the built environment	NBC 3.3.1.19.(1) NBC 3.8.3.1.(1) NBC Table 3.8.3.1. 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)
CSA	B651-18	Conception accessible pour l'environnement bâti	CNB 3.3.1.19. 1) CNB 3.8.3.1. 1) CNB Tableau 3.8.3.1. 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)
CSA	B70.1-03	Frames and Covers for Maintenance Holes and Catchbasins	NPC 2.2.6.2.(1)
CSA	B70.1-03	Cadres et couvercles de regards de visite et de bassins collecteurs	CNP 2.2.6.2. 1)
CSA	B70- 42 :19	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	B70- 42 :19	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	CAN/CSA A82.27-M91	Gypsum Board	NBC 3.1.5.14.(6) NBC 3.1.5.15.(4) NBC 3.1.6.6.(2) NBC 3.1.6.15.(1) NBC D-1.5.1. NBC D-3.1.1.
CSA	CAN/CSA A82.27-M91	Plaques de plâtre	CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 3.1.6.6. 2) CNB 3.1.6.15. 1) CNB D-1.5.1. CNB D-3.1.1.
CSA	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	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	CAN/CSA-A123.2-03	Asphalt-Coated Roofing Sheets	NBC Table 5.9.1.1. NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B
CSA	CAN/CSA-A123.2-03	Feutre à toiture revêtu de bitume	CNB Tableau 5.9.1.1. CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
CSA	CAN/CSA-A123.21:4420	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	CAN/CSA-A123.21:4420	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	CAN/CSA-A123.4-04	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems	NBC Table 5.9.1.1. NBC 9.13.2.2.(2) NBC 9.13.3.2.(2) NBC Table 9.26.2.1.B
CSA	CAN/CSA-A123.4-04	Bitume utilisé pour l'imperméabilisation de revêtements multicouches pour toitures	CNB Tableau 5.9.1.1. CNB 9.13.2.2. 2) CNB 9.13.3.2. 2) CNB Tableau 9.26.2.1.B
CSA	CAN/CSA-A179-14	Mortar and Grout for Unit Masonry	NBC Table 5.9.1.1. NBC 9.15.2.2.(3) NBC 9.20.3.1.(1)
CSA	CAN/CSA-A179-14	Mortier et coulis pour la maçonnerie en éléments	CNB Tableau 5.9.1.1. CNB 9.15.2.2. 3) CNB 9.20.3.1. 1)
CSA	CAN/CSA-A220 Series-06	Concrete Roof Tiles	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B NBC 9.26.17.1.(1)
CSA	CAN/CSA-A324-M88	Clay Flue Liners	NBC 9.21.3.3.(1)
CSA	CAN/CSA-A324-M88	Boisseaux en argile pour conduits de fumée	CNB 9.21.3.3. 1)
CSA	CAN/CSA-A370:14	Connectors for masonry	NBC A-9.21.4.5.(2)
CSA	CAN/CSA-A370:14	Connecteurs pour la maçonnerie	CNB A-9.21.4.5. 2)
CSA	CAN/CSA-A371-14	Masonry Construction for Buildings	NBC Table 5.9.1.1. NBC 9.15.2.2.(3) NBC 9.20.3.2.(7) NBC 9.20.15.2.(1)
CSA	CAN/CSA-A371-14	Maçonnerie des bâtiments	CNB Tableau 5.9.1.1. CNB 9.15.2.2. 3) CNB 9.20.3.2. 7) CNB 9.20.15.2. 1)

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CSA	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	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	CAN/CSA-A82:14	Fired masonry brick made from clay or shale	NBC Table 5.9.1.1. NBC 9.20.2.1.(1) NBC D-2.6.1.
CSA	CAN/CSA-A82:14	Brique de maçonnerie cuite en argile ou en schiste	CNB Tableau 5.9.1.1. CNB 9.20.2.1. 1) CNB D-2.6.1.
CSA	CAN/CSA-A82.27-M91	Plaques de plâtre	CNB 3.1.5.14. 6) CNB 3.1.5.15. 4) CNB 3.1.6.6. 2) CNB 3.1.6.15. 1) CNB D-1.5.1. CNB D-3.1.1.
CSA	CAN/CSA-B126.0-13	General requirements and methods of testing for water cisterns	NPC 2.7.2.4.(6)
CSA	CAN/CSA-B126.0-13	Exigences générales et méthodes d'essai des réservoirs d'eau	CNP 2.7.2.4. 6)
CSA	CAN/CSA-B126.1-13	Installation of water cisterns	NPC 2.7.2.4.(6)
CSA	CAN/CSA-B126.1-13	Installation des réservoirs d'eau	CNP 2.7.2.4. 6)
CSA	CAN/CSA-B127.3- 18 :21	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	CAN/CSA-B127.3- 18 :21	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	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	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)
CSA	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	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	CAN/CSA-B356-10	Water pressure reducing valves for domestic water supply systems	NPC 2.2.10.12.(1)
CSA	CAN/CSA-B356-10	Réducteurs de pression pour réseaux domestiques d'alimentation en eau	CNP 2.2.10.12. 1)
CSA	CAN/CSA-B45 Series-02	Plumbing Fixtures	NPC 2.2.2.2.(1)
CSA	CAN/CSA-B483.1- 07 :21	Drinking Water Treatment Systems	NPC 2.2.10.17.(1)
CSA	CAN/CSA-B483.1- 07 :21	Systèmes de traitement de l'eau potable	CNP 2.2.10.17. 1)
CSA	CAN/CSA-B72- M87 :20	Installation Code for Lightning Protection Systems	NBC 3.6.1.3.(1)
CSA	CAN/CSA-B72- M87 :20	Code d'installation des paratonnerres	CNB 3.6.1.3. 1)

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CSA	CAN/CSA-B72-M87	Code d'installation des paratonnerres	CNB 3.6.1.3. 1)
CSA	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	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	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
CSA	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	CAN/CSA-C191-0413	Performance of Electric Storage Tank Water Heaters for Domestic Hot Water Service	NBC Table 9.36.4.2. NECB Table 6.2.2.1.
CSA	CAN/CSA-C191-0413	Fonctionnement des chauffe-eau électriques à accumulation pour usage domestique	CNB Tableau 9.36.4.2. CNÉB Tableau 6.2.2.1.
CSA	CAN/CSA-C22.2 N° 262-04	Canalisations pour câbles à fibres optiques et câbles de télécommunications	CNB 3.1.5.23. 1)
CSA	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	CAN/CSA-C22.2 No. 150-M8916	Microwave Ovens <u>ovens</u>	NBC A-9.10.22.
CSA	CAN/CSA-C22.2 No. 150-M8916	Fours à micro-ondes	CNB A-9.10.22.
CSA	CAN/CSA-C22.2 No. 262-04	Optical Fiber Cable and Communication Cable Raceway Systems	NBC 3.1.5.23.(1)
CSA	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	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

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CSA	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
CSA	CAN/CSA-C439-0918	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 Table 5.2.10.4. NECB A-5.2.10.4.(2)
CSA	CAN/CSA-C439-0918	Méthode 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 Tableau 5.2.10.4. CNÉB A-5.2.10.4. 2)
CSA	CANANSI/CSA-/IGSHPA C448 Series SERIES-1316	Design and installation of earthground energy source heat pump systems for commercial and residential buildings	NBC 9.33.5.2.(1)
CSA	CAN/CSA-C448 Série-13	Conception et installation des systèmes géothermiques	CNB 9.33.5.2. 1)
CSA	CAN/CSA-C654-14	Fluorescent lamp ballast efficacy measurements	NECB 4.2.1.2.(1) NECB 4.2.1.2.(2)
CSA	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	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	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	CAN/CSA-C745-0320	Energy Efficiency efficiency of Electric electric Storage storage Tank tank Water water Heaters heaters and Heat heat Pump pump Water water Heaters heaters	NBC Table 9.36.4.2. NBC Table 9.36.8.10. NECB Table 6.2.2.1.
CSA	CAN/CSA-C745-0320	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.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	CAN/CSA-C746- 06 <u>17</u>	Performance Energy Standard <u>performance rating</u> for Rating Large <u>large</u> and Single <u>single</u> Packaged <u>packaged</u> Vertical <u>vertical</u> Air <u>air</u> Conditioners <u>conditioners</u> and Heat <u>heat</u> Pumps <u>pumps</u>	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	CAN/CSA-C746- 06 <u>17</u>	Évaluation des performances <u>énergétiques</u> 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	CAN/CSA-C749- 07 <u>:15</u>	Performance <u>Energy performance</u> of Dehumidifiers <u>dehumidifiers</u>	NBC Table 9.36.3.10.
CSA	CAN/CSA-C749- 07 <u>:15</u>	Performances <u>Rendement énergétique</u> des déshumidificateurs	CNB Tableau 9.36.3.10.
CSA	CAN/CSA-C802.1-13	Minimum efficiency values for liquid-filled distribution transformers	NECB 7.2.3.1.(1)
CSA	CAN/CSA-C802.1-13	Valeurs minimales de rendement pour les transformateurs de distribution à isolant liquide	CNÉB 7.2.3.1. 1)
CSA	CAN/CSA-C802.2-18	Test method and minimum efficiency values for dry-type transformers	NECB 7.2.3.1.(1)
CSA	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	CAN/CSA-C828- 43 <u>:19</u>	Performance requirements for <u>line voltage</u> thermostats used with individual room electric space heating devices	NBC 9.36.3.6.(3) NECB 5.2.8.6.(4)
CSA	CAN/CSA-C828- 43 <u>:19</u>	Exigences relatives aux performances des thermostats <u>à tension de secteur</u> dédiés au chauffage électrique par pièce	CNB 9.36.3.6. 3) CNÉB 5.2.8.6. 4)
CSA	CAN/CSA-C860-11	Performance of internally lighted exit signs	NECB 4.2.1.1.(1)
CSA	CAN/CSA-C860-11	Performances des enseignes de sortie à éclairage interne	CNÉB 4.2.1.1. 1)
CSA	CAN/CSA-F326-M91	Residential Mechanical Ventilation 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	CAN/CSA-F326-M91	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.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	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	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	CAN/CSA-F383-08	Installation of packaged solar domestic hot water systems	NPC 2.6.1.8.(1)
CSA	CAN/CSA-F383-08	Installation des chauffe-eau solaires d'usage ménager intégrés	CNP 2.6.1.8. 1)
CSA	CAN/CSA-G401-14	Corrugated steel pipe products	NBC Table 5.9.1.1. NBC 9.14.3.1.(1) NPC 2.2.6.8.(1) NPC A-2.2.5. to 2.2.8.
CSA	CAN/CSA-G401-14	Tuyaux en tôle ondulée	CNB Tableau 5.9.1.1. CNB 9.14.3.1. 1) CNP 2.2.6.8. 1) CNP A-2.2.5. à 2.2.8.
CSA	CAN/CSA-O122-16	Structural glued-laminated timber	NBC Table 9.23.4.2.-K NBC Table 9.23.12.3.-D
CSA	CAN/CSA-O122-16	Bois de charpente lamellé-collé	CNB Tableau 9.23.4.2.-K CNB Tableau 9.23.12.3.-D
CSA	CAN/CSA-O132.2 Series-90	Wood Flush Doors	NBC 9.7.4.3.(4)
CSA	CAN/CSA-O132.2 Série-90	Portes planes en bois	CNB 9.7.4.3. 4)
CSA	CAN/CSA-O80 Series- 45 :21	Wood preservation	NBC 3.1.4.5.(1) NBC 4.2.3.2.(1) NBC Table 5.9.1.1.
CSA	CAN/CSA-O80 Série- 45 :21	Préservation du bois	CNB 3.1.4.5. 1) CNB 4.2.3.2. 1) CNB Tableau 5.9.1.1.
CSA	CAN/CSA-O80.0-15	General requirements for wood preservation	NBC 4.2.3.2.(2)
CSA	CAN/CSA-O80.0-15	Exigences générales relatives à la préservation du bois	CNB 4.2.3.2. 2)
CSA	CAN/CSA-O80.1-15	Specification of treated wood	NBC 4.2.3.2.(1) NBC 9.3.2.9.(5)
CSA	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	CAN/CSA-O80.2-15	Processing and treatment	NBC 4.2.3.2.(1)
CSA	CAN/CSA-O80.2-15	Traitement	CNB 4.2.3.2. 1)
CSA	CAN/CSA-O80.3-15	Preservative formulations	NBC 4.2.3.2.(1)
CSA	CAN/CSA-O80.3-15	Formules relatives aux produits de préservation	CNB 4.2.3.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	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	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	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	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	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.
CSA	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	CAN/CSA-P.4.1- 45 :21	Testing method for measuring annual fireplace efficiency	NBC Table 9.36.3.10. NECB Table 5.2.12.1.P
CSA	CAN/CSA-P.4.1- 45 :21	Méthode d'essai pour mesurer l'efficacité annuelle des foyers	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-P
CSA	CAN/CSA-P.8-09	Thermal efficiencies of industrial and commercial gas-fired package furnaces	NBC Table 9.36.3.10. NECB Table 5.2.12.1.O
CSA	CAN/CSA-P.8-09	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	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

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	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	CAN/CSA-Série A220-06	Tuiles en béton pour couvertures	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B CNB 9.26.17.1. 1)
CSA	CAN/CSA-Série B45-02	Appareils sanitaires	CNP 2.2.2.2. 1)
CSA	CAN/CSA-S269.3-M92	Concrete Formwork	NBC 4.1.1.3.(4)
CSA	CAN/CSA-S269.3-M92	Coffrages	CNB 4.1.1.3. 4)
CSA	CAN/CSA-S37-18	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)
CSA	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	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	CAN/CSA-Z662-15	Oil and gas pipeline systems	NBC 3.2.3.22.(1)
CSA	CAN/CSA-Z662-15	Réseaux de canalisations de pétrole et de gaz	CNB 3.2.3.22. 1)
CSA	CAN3-A93-M82	Natural Airflow Ventilators for Buildings	NBC Table 5.9.1.1. NBC 9.19.1.2.(5)
CSA	CAN3-A93-M82	Évents d'aération de bâtiments	CNB Tableau 5.9.1.1. CNB 9.19.1.2. 5)
CSA	CSA B45.5-17/IAPMO Z124-2017	Plastic plumbing fixtures	NPC 2.2.2.2.(1) CNP 2.2.2.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	C22.1- 18 :21	Canadian Electrical Code, Part I (24th 25th 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 A-3.1.4.3.(1)(b)(i) NBC A-3.2.4.20.(9)(a) NBC A-3.3.6.2.(4) 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-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 A-4.10.3.3.(1) NFC 5.1.2.1.(1) NFC 5.1.2.2.(1) NFC 5.3.1.2.(2) NFC 5.3.1.2.(3) NFC 5.3.1.10.(2) NFC 5.5.3.4.(1) NFC 5.6.1.9.(3) NFC A-5.1.2.1.(1) NFC A-5.5.3.4.(1) NECB A-7.2.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	C22.1- 18 :21	Code canadien de l'électricité, première partie (vingt- quatrième cinquième édition), 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 A-3.1.4.3. 1)b)i) CNB A-3.2.4.20. 9)a) CNB A-3.3.6.2. 4) 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-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 A-4.10.3.3. 1) CNPI 5.1.2.1. 1) CNPI 5.1.2.2. 1) CNPI 5.3.1.2. 2) CNPI 5.3.1.2. 3) CNPI 5.3.1.10. 2) CNPI 5.5.3.4. 1) CNPI 5.6.1.9. 3) CNPI A-5.1.2.1. 1) CNPI A-5.5.3.4. 1) CNÉB A-7.2.1.1.
CSA	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	C22.2 N° 113-10	Ventilateurs	CNB 9.32.3.10. 7)
CSA	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	C22.2 N° 211.0-03	General Requirements and Methods of Testing for Nonmetallic Conduit	CNB 3.1.5.23. 1)
CSA	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	C22.2 No. 113-10	Fans and Ventilators	NBC 9.32.3.10.(7)
CSA	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)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	C22.2 No. 211.0-03	General Requirements and Methods of Testing for Nonmetallic Conduit	NBC 3.1.5.23.(1)
CSA	C282-15	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	C282-15	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	C368.1:14	Energy performance of room air conditioners	NBC Table 9.36.3.10. NECB Table 5.2.12.1.G
CSA	C368.1:14	Rendement énergétique des climatiseurs individuels	CNB Tableau 9.36.3.10. CNÉB Tableau 5.2.12.1.-G
CSA	C390-10	Méthodes d'essai, exigences de marquage et niveaux de rendement énergétique pour les moteurs à induction triphasés	CNÉB 7.2.4.1. 1)
CSA	C390:10	Test methods, marking requirements, and energy efficiency levels for three-phase induction motors	NECB 7.2.4.1.(1)
CSA	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	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	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	C802.3-15	Minimum efficiency values for power transformers	NECB 7.2.3.1.(1)
CSA	C802.3-15	Valeurs minimales de rendement pour les transformateurs de puissance	CNÉB 7.2.3.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	C873.4- 14 :15	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	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	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	G30.18- 09 :21	Carbon steel bars for concrete reinforcement	NBC 9.3.1.1.(4)
CSA	G30.18- 09 :21	Barres d'acier au carbone pour l'armature du béton	CNB 9.3.1.1. 4)
CSA	G40.21-13	Structural quality steel	NBC 4.2.3.8.(1) NBC Table 5.9.1.1. NBC 9.23.4.3.(2)
CSA	G40.21-13	Acier de construction	CNB 4.2.3.8. 1) CNB Tableau 5.9.1.1. CNB 9.23.4.3. 2)
CSA	O112.10-08	Evaluation of Adhesives for Structural Wood Products (Limited Moisture Exposure)	NBC Table 9.10.3.1.-B NBC D-2.3.6. CNB Tableau 9.10.3.1.-B CNB D-2.3.6.
CSA	O112.9: 10 21	Evaluation of adhesives for structural wood products (exterior exposure)	NBC Table 9.10.3.1.-B CNB Tableau 9.10.3.1.-B
CSA	O118.1-08	Western Red Cedar Shakes and Shingles	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B NBC 9.27.7.1.(1)
CSA	O118.1-08	Bardeaux et bardeaux de fente en thuya géant	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B CNB 9.27.7.1. 1)
CSA	O118.2-08	Eastern White Cedar Shingles	NBC Table 5.9.1.1. NBC Table 9.26.2.1.B NBC 9.27.7.1.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	O118.2-08	Bardeaux en thuya occidental	CNB Tableau 5.9.1.1. CNB Tableau 9.26.2.1.B CNB 9.27.7.1. 1)
CSA	O121-17	Douglas fir plywood	NBC Table 5.9.1.1. NBC 9.23.15.2.(1) NBC 9.23.16.2.(1) NBC Table 9.23.17.2.A NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC D-3.1.1.
CSA	O121-17	Contreplaqué en sapin de Douglas	CNB Tableau 5.9.1.1. CNB 9.23.15.2. 1) CNB 9.23.16.2. 1) CNB Tableau 9.23.17.2.A CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB D-3.1.1.
CSA	O141:05	Softwood Lumber	NBC Table 5.9.1.1. NBC 9.3.2.6.(1) NBC A-9.3.2.1.(1) NBC D-2.3.6. NBC D-2.4.1. CNB Tableau 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.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	O151-17	Canadian softwood plywood	NBC Table 5.9.1.1. NBC 9.23.15.2.(1) NBC 9.23.16.2.(1) NBC Table 9.23.17.2.A NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC D-3.1.1.
CSA	O151-17	Contreplaqué en bois de résineux canadien	CNB Tableau 5.9.1.1. CNB 9.23.15.2. 1) CNB 9.23.16.2. 1) CNB Tableau 9.23.17.2.A CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB D-3.1.1.
CSA	O153- 13 :19	Poplar plywood	NBC Table 5.9.1.1. NBC 9.23.15.2.(1) NBC 9.23.16.2.(1) NBC Table 9.23.17.2.A NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) NBC D-3.1.1.
CSA	O153- 13 :19	Contreplaqué en peuplier	CNB Tableau 5.9.1.1. CNB 9.23.15.2. 1) CNB 9.23.16.2. 1) CNB Tableau 9.23.17.2.A CNB 9.27.8.1. 1) CNB 9.30.2.2. 1) CNB D-3.1.1.
CSA	O177-06	Qualification Code for Manufacturers of Structural Glued-Laminated Timber	NBC 4.3.1.2.(1) NBC Table 9.23.4.2.-K NBC Table 9.23.12.3.-D
CSA	O177-06	Règles de qualification des fabricants de bois de charpente lamellé-collé	CNB 4.3.1.2. 1) CNB Tableau 9.23.4.2.-K CNB Tableau 9.23.12.3.-D

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	O325-46:21	Construction sheathing	NBC Table 5.9.1.1. NBC Table 9.23.13.6. 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 Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC D-3.1.1.
CSA	O325-46:21	Revêtements intermédiaires de construction	CNB Tableau 5.9.1.1. CNB Tableau 9.23.13.6. 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 Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB D-3.1.1.
CSA	O437.0-93	OSB and Waferboard	NBC Table 5.9.1.1. 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 Table 9.23.17.2.A NBC 9.27.10.1.(1) NBC 9.29.9.1.(2) NBC 9.30.2.2.(1) NBC Table 9.23.12.3.-A NBC Table 9.23.12.3.-B NBC Table 9.23.12.3.-C NBC A-9.23.15.4.(2) NBC D-3.1.1.

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	O437.0-93	Panneaux de particules orientées et panneaux de grandes particules	CNB Tableau 5.9.1.1. 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 Tableau 9.23.17.2.A CNB 9.27.10.1. 1) CNB 9.29.9.1. 2) CNB 9.30.2.2. 1) CNB Tableau 9.23.12.3.-A CNB Tableau 9.23.12.3.-B CNB Tableau 9.23.12.3.-C CNB A-9.23.15.4. 2) CNB D-3.1.1.
CSA	O86:19	Engineering design in wood	NBC Table 4.1.8.9. 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.
CSA	O86:19	Règles de calcul des charpentes en bois	CNB D-2.11.4. CNB Tableau 4.1.8.9. 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.
CSA	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	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

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	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	S136-16	North American specification for the design of cold-formed steel structural members (using the Appendix B provisions applicable to Canada)	NBC 4.1.8.1.(5) NBC Table 4.1.8.9. NBC 4.3.4.2.(1)
CSA	S136-16	Spécification nord-américaine pour le calcul des éléments de charpente en acier formés à froid (utiliser l'annexe B qui s'applique au Canada)	CNB 4.1.8.1. 5) CNB Tableau 4.1.8.9. CNB 4.3.4.2. 1)
CSA	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	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	S16:19	Design of steel structures	NBC Table 4.1.8.9. NBC 4.3.4.1.(1) NBC A-4.1.5.11. NBC A-Table 4.1.8.9. NBC A-4.3.4.1.(1) NBC D-2.6.6.
CSA	S16:19	Règles de calcul des charpentes en acier	CNB Tableau 4.1.8.9. CNB 4.3.4.1. 1) CNB A-4.1.5.11. CNB A-Tableau 4.1.8.9. CNB A-4.3.4.1. 1) CNB D-2.6.6.
CSA	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	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)
CSA	S269.2-16	Access scaffolding for construction purposes	NBC 4.1.1.3.(4)
CSA	S269.2-16	Échafaudages d'accès pour les travaux de construction	CNB 4.1.1.3. 4)
CSA	S304-14	Design of masonry structures	NBC Table 4.1.8.9. NBC 4.3.2.1.(1) NBC A-5.1.4.1.(6)(b) and (c)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	S304-14	Calcul des ouvrages en maçonnerie	CNB Tableau 4.1.8.9. CNB 4.3.2.1. 1) CNB A-5.1.4.1. 6)b) et c)
CSA	S367-12	Air-, cable-, and frame-supported membrane structures	NBC 4.4.1.1.(1) CNB 4.4.1.1. 1)
CSA	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	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	S413- 14 :21	Parking structures	NBC 4.4.2.1.(1) NBC A-4.4.2.1.(1)
CSA	S413- 14 :21	ParkingOuvrages structuresde stationnement	CNB 4.4.2.1. 1) CNB A-4.4.2.1. 1)
CSA	S478:19	Durability in buildings	NBC A-5.1.4.2.
CSA	S478:19	Durabilité des bâtiments	CNB A-5.1.4.2.
CSA	S6- 14 :19	Canadian Highway Bridge Design Code	NBC A-Table 4.1.5.3. NBC A-Table 4.1.5.9.
CSA	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	S832:14	Seismic risk reduction of operational and functional components (OFCs) of buildings	NBC A-Table 4.1.8.18.
CSA	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.
CSA	W117.2:19	Safety in welding, cutting and allied processes	NFC 5.2.1.1.(2)
CSA	W117.2:19	Règles de sécurité en soudage, coupage et procédés connexes	CNPI 5.2.1.1. 2)
CSA	Z240 MH Series-16	Manufactured homes	NBC A-1.1.1.1.(2) of Division A
CSA	Z240 MM Série-16	Maisons usinées	CNB A-1.1.1.1. 2) de la division A
CSA	Z240.10.1:19	Site preparation, foundation, and installation of buildings	NBC A-1.1.1.1.(2) of Division A NBC 9.15.1.3.(1) NBC 9.23.6.3.(1)
CSA	Z240.10.1:19	Aménagement du terrain, construction des fondations et installation de bâtiments	CNB A-1.1.1.1. 2) de la division A CNB 9.15.1.3. 1) CNB 9.23.6.3. 1)
CSA	Z240.2.1-16	Structural requirements for manufactured homes	NBC A-1.1.1.1.(2) of Division A NBC 9.12.2.2.(6) NBC 9.15.1.3.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
CSA	Z240.2.1-16	Exigences techniques relatives aux maisons usinées	CNB A-1.1.1.1. 2) de la division A CNB 9.12.2.2. 6) CNB 9.15.1.3. 1)
CSA	Z245.1-14	Steel pipe	NFC 4.5.2.1.(4) CNPI 4.5.2.1. 4)
CSA	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	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	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	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)
CSA	6.19-0417	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/ICC	CSA B805-18/ICC 805-2018	Rainwater harvesting systems	NPC 2.7.2.4.(4) NPC A-2.7.2.4.(1)
CSA/ICC	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	23M-2016	Standard for Residential Steel Cladding	NBC 9.27.11.1.(1) NBC A-9.27.11.1.(1)
ICTAB	23M-2016	Norme pour le bardage résidentiel en acier	CNB 9.27.11.1. 1) CNB A-9.27.11.1. 1)
CTI	ATC-105DS-18	Acceptance Test Code for Dry Fluid Coolers	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CTI	ATC-105S-11	Acceptance Test Code for Closed Circuit Cooling Towers	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.
CTI	ATC-105-00	Acceptance Test Code	NECB Table 5.2.12.2. CNÉB Tableau 5.2.12.2.

Issuing Agency	Document Number	Title of Document	Code Reference
CTI	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	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	1997	Introduction to Wood Building Technology	NBC A-9.27.3.8.(4)
CCB	1997	Introduction to Wood Building Technology	CNB A-9.27.3.8. 4)
CWC	2000	Wood Reference Handbook	NBC A-9.27.3.8.(4)
CCB	2000	Manuel de la construction en bois	CNB A-9.27.3.8. 4)
CWC	2009	The Span Book	NBC A-9.23.4.2.
CCB	2009	Le livre des portées	CNB A-9.23.4.2.
CWC	2014	Engineering Guide for Wood Frame Construction	NBC 9.4.1.1.(1) NBC 9.23.13.1.(2) NBC 9.23.13.2.(2) NBC 9.23.13.3.(2) NBC A-9.4.1.1. NBC A-9.23.13.1.
CCB	2014	Engineering Guide for Wood Frame Construction	CNB 9.4.1.1. 1) CNB 9.23.13.1. 2) CNB 9.23.13.2. 2) CNB 9.23.13.3. 2) CNB A-9.4.1.1. CNB A-9.23.13.1.
DASMA	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	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	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	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	10 CFR, Part 430-2011	Energy, Energy Conservation Program for Consumer Products	NBC Table 9.36.4.2. CNB Tableau 9.36.4.2.

Issuing Agency	Document Number	Title of Document	Code Reference
DOE	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.
DOE	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	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	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	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	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	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	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	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	625/R-92/016 (1994)	Radon Prevention in the Design and Construction of Schools and Other Large Buildings	NBC A-5.4.1.1. NBC 6.2.1.1.(1) CNB A-5.4.1.1. CNB 6.2.1.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
FEMA	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)
FEMA	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	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	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	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	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	DORS/2001-269	Règlement sur les produits chimiques et contenants de consommation (2001)	CNPI A-3.2.5.2. 1)
SC	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 Tableau 3.2.7.1. CNPI Tableau 3.2.7.6. CNPI 3.3.4.1. 3) CNPI A-3.2.5.2. 1) CNPI A-Tableau 3.2.7.1. CNPI A-3.2.7.6. 3) CNPI A-4.2.2.3. 2)
HC	H46-2/90-156E	Exposure Guidelines for Residential Indoor Air Quality	NBC A-6.3.1.5. NBC A-9.25.5.2.
SC	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	L.C. 2002, ch. 28	Loi sur les produits antiparasitaires	CNPI 4.2.3.2. 2)
SC	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	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	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	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 A-1.4.1.2. 1) de la division A CNPI 3.1.2.1. 1) CNPI 3.2.7.1. 3) CNPI Tableau 3.2.7.1. CNPI Tableau 3.2.7.6. CNPI 3.2.7.15. 2) CNPI 3.3.4.1. 3) CNPI A-Tableau 3.2.7.1. CNPI A-3.2.7.1. 3) CNPI A-3.2.7.1. 3)b) CNPI A-3.2.7.6. 3) CNPI A-3.2.7.13. 1) CNPI A-3.2.7.14. 1)
HC	SOR/2001-269	Consumer Chemicals and Containers Regulations, 2001	NFC A-3.2.5.2.(1)
HC	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 Table 3.2.7.1. NFC Table 3.2.7.6. NFC 3.3.4.1.(3) NFC A-3.2.5.2.(1) NFC A-Table 3.2.7.1. NFC A-3.2.7.6.(3) NFC A-4.2.2.3.(2)

Issuing Agency	Document Number	Title of Document	Code Reference
HC	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 A-1.4.1.2.(1) of Division A NFC 3.1.2.1.(1) NFC 3.2.7.1.(3) NFC Table 3.2.7.1. NFC Table 3.2.7.6. NFC 3.2.7.15.(2) NFC 3.3.4.1.(3) NFC A-Table 3.2.7.1. NFC A-3.2.7.1.(3) NFC A-3.2.7.1.(3)(b) NFC A-3.2.7.6.(3) NFC A-3.2.7.13.(1) NFC A-3.2.7.14.(1)
HC	2004	Fungal Contamination in Public Buildings: Health Effects and Investigation Methods	NBC A-5.5.1.1.
SC	2004	Contamination fongique dans les immeubles publics : Effets sur la santé et méthodes d'évaluation	CNB A-5.5.1.1.
HC	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	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	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	2008	Guide for Radon Measurements in Residential Dwellings (Homes)	NBC A-9.13.4.3.
SC	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	2008	Guide sur les mesures du radon dans les maisons	CNB A-9.13.4.3.
HPVA	ANSI/HPVA HP-1-2009	American National Standard for Hardwood and Decorative Plywood	NBC Table 5.9.1.1. NBC 9.27.8.1.(1) NBC 9.30.2.2.(1) CNB Tableau 5.9.1.1. CNB 9.27.8.1. 1) CNB 9.30.2.2. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
HRAI	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	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)
HVI	HVI Publication 915- 2013 2016	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	HVI Publication 916- 2013 2015	Airflow Test Procedure	NBC 9.32.3.10.(1) CNB 9.32.3.10. 1)
ICC	ICC 900/SRCC 300-2015	Solar Thermal System Standard	NECB Table 6.2.2.1. CNÉB Tableau 6.2.2.1.
ICC	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	60268-16: 2011 2020	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	ANSI/IES RP-28-07	Lighting and the Visual Environment for Senior Living	NECB Table 4.2.1.6. NECB Table 4.3.2.10.A NECB A-8.4.3.2.(2) CNÉB Tableau 4.2.1.6. CNÉB Tableau 4.3.2.10.A CNÉB A-8.4.3.2. 2)

Issuing Agency	Document Number	Title of Document	Code Reference
IES	HB-10-11	The Lighting Handbook, 10th Edition	NECB A-Table 4.3.2.8. CNÉB A-Tableau 4.3.2.8.
IMO	2012	International Maritime Dangerous Goods Code	NFC 3.3.4.8.(1)
OMI	2012	Code maritime international des marchandises dangereuses	CNPI 3.3.4.8. 1)
ISO	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	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	13790:2008	Energy performance of buildings – Calculation of energy use for space heating and cooling	NECB 1.1.4.2.(1)
ISO	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	14683:2007	Thermal bridges in building construction – Linear thermal transmittance – Simplified methods and default values	NECB 3.1.1.5.(5)
ISO	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	45742 <u>12354</u> -1: 2005 <u>2017</u>	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	45742 <u>12354</u> -1: 2005 <u>2017</u>	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	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	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)

Issuing Agency	Document Number	Title of Document	Code Reference
ISO	7010:2011	Graphical symbols – Safety colours and safety signs – Registered safety signs	NBC 3.4.5.1.(2) NBC A-3.4.5.1.(2)(c) NBC 9.9.11.3.(2)
ISO	7010:2011	Symboles graphiques – Couleurs de sécurité et signaux de sécurité – Signaux de sécurité enregistrés	CNB 3.4.5.1. 2) CNB A-3.4.5.1. 2)c) CNB 9.9.11.3. 2)
ISO	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	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)
ISO	7731:2003	Ergonomics – Danger signals for public and work areas – Auditory danger signals	NBC A-3.2.4.22.(1)(b)
ISO	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	8201:1987	Acoustics – Audible emergency evacuation signal	NBC 3.2.4.18.(2) NBC A-3.2.4.18.(2)
ISO	8201:1987	Acoustique – Signal sonore d'évacuation d'urgence	CNB 3.2.4.18. 2) CNB A-3.2.4.18. 2)
McGraw-Hill	2009	International Plumbing Codes Handbook	NPC A-2.6.3. CNP A-2.6.3.
NACE	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	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	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	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	101- 2018 2021	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	10-2013	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	105-2013	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)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	11-2016	Standard for Low-, Medium-, and High-Expansion Foam	NFC 2.1.3.5.(3) NFC 4.3.2.5.(2) CNPI 2.1.3.5. 3) CNPI 4.3.2.5. 2)
NFPA	12A- 2015 2018	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)
NFPA	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	120- 2015 2020	Standard for Fire Prevention and Control in Coal Mines	NFC A-5.3.1.3.(2) CNPI A-5.3.1.3. 2)
NFPA	12-2015	Standard on Carbon Dioxide Extinguishing Systems	NFC 2.1.3.5.(3) CNPI 2.1.3.5. 3)
NFPA	13D-2016	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 A-3.2.5.12.(2) NBC A-3.2.5.12.(6) NBC A-3.2.5.13.(1) NBC 9.10.2.2.(2) NBC 9.10.18.2.(3) CNB 3.2.4.1. 2) CNB 3.2.5.12. 3) CNB 3.2.7.9. 4) CNB A-3.2.5.12. 2) CNB A-3.2.5.12. 6) CNB A-3.2.5.13. 1) CNB 9.10.2.2. 2) CNB 9.10.18.2. 3) NPC 2.6.3.1.(3) CNP 2.6.3.1. 3)
NFPA	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)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	13-2019	Standard for the Installation of Sprinkler Systems	NBC 3.1.9.1.(4) NBC 3.2.4.8.(2) NBC 3.2.4.15.(1) 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 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) NBC 9.10.9.9.(4) CNB 3.1.9.1. 4) CNB 3.2.4.8. 2) CNB 3.2.4.15. 1) 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 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) CNB 9.10.9.9. 4) NFC A-2.1.3.1.(1) 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-3.2.1.1.(1)(a) NFC A-3.2.2.4.(3) NFC A-3.2.3.3.(2) CNPI A-2.1.3.1. 1) 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-3.2.1.1. 1)a) CNPI A-3.2.2.4. 3) CNPI A-3.2.3.3. 2)
NFPA	14-2013	Standard for the Installation of Standpipe and Hose Systems	NBC 3.2.5.9.(1) NBC 3.2.5.10.(1) CNB 3.2.5.9. 1) CNB 3.2.5.10. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	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	16-2019	Standard on Installation of Foam-Water Sprinkler and Foam-Water Spray Systems	NFC 2.1.3.5.(4) CNPI 2.1.3.5. 4)
NFPA	17A- 2017 2021	Standard for Wet Chemical Extinguishing Systems	NFC 2.1.3.5.(3) CNPI 2.1.3.5. 3)
NFPA	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	17- 2017 2021	Standard for Dry Chemical Extinguishing Systems	NFC 2.1.3.5.(3) CNPI 2.1.3.5. 3)
NFPA	18- 2017 2021	Standard on Wetting Agents	NFC 2.1.3.5.(5) CNPI 2.1.3.5. 5)
NFPA	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	2010 Edition	Fire Protection Guide to Hazardous Materials	NBC A-6.9.1.2.(1)
NFPA	20-2016	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	204-2018	Standard for Smoke and Heat Venting	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	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	25- 2017 2020	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	30A- 2018 2021	Code for Motor Fuel Dispensing Facilities and Repair Garages	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	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)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	30-2018	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	303- 2016 2021	Fire Protection Standard for Marinas and Boatyards	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	307- 2016 2021	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	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	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	33-2018	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	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	35- 2016 2021	Standard for <u>the</u> Manufacture of Organic Coatings	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	36- 2017 2021	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	37-2018	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	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	409-2016	Standard on Aircraft Hangars	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	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	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)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	497- 2017 2021	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	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	51A-2012	Standard for Acetylene Cylinder Charging Plants	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	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	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	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	654-2017	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	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	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	68-2013	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	69-2014	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	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	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	80A-2012	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)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	80-2013	Standard for Fire Doors and Other Opening Protectives	NBC 3.1.8.5.(2) NBC 3.1.8.12.(2) NBC 3.1.8.16.(1) NBC 3.1.9.1.(5) NBC A-3.1.8.1.(2) NBC A-3.2.8.2.(3) NBC 9.10.9.9.(5) NBC 9.10.13.1.(1) NBC D-5.2.1. CNB 3.1.8.5. 2) CNB 3.1.8.12. 2) CNB 3.1.8.16. 1) CNB 3.1.9.1. 5) CNB A-3.1.8.1. 2) CNB A-3.2.8.2. 3) CNB 9.10.9.9. 5) CNB 9.10.13.1. 1) CNB D-5.2.1. NFC 2.2.2.4.(5) CNPI 2.2.2.4. 5)
NFPA	82-2014	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	85-2019	Boiler and Combustion Systems Hazards Code	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	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	88A-2019	Standard for Parking Structures	NBC A-6.9.1.2.(1) CNB A-6.9.1.2. 1)
NFPA	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)

Issuing Agency	Document Number	Title of Document	Code Reference
NFPA	96- 2014 2021	Standard for Ventilation Control and Fire Protection of Commercial Cooking Operations	NBC 3.2.4.8.(2) NBC 3.6.3.5.(1) NBC A-3.3.1.2.(2) NBC A-3.6.3.5. NBC 6.3.1.6.(1) 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 A-3.3.1.2. 2) CNB A-3.6.3.5. CNB 6.3.1.6. 1) 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	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	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	Building Materials and Structures Report BMS 79, 1941	Water-Distributing Systems for Buildings	NPC A-2.6.3. CNP A-2.6.3.
NLGA	SPS-1-2017	Fingerjoined Structural Lumber	NBC Table 9.10.3.1.-A NBC A-9.23.10.4.(1) CNB Tableau 9.10.3.1.-A CNB A-9.23.10.4. 1)
NLGA	SPS-3-2017	Fingerjoined "Vertical Stud Use Only" Lumber	NBC Table 9.10.3.1.-A NBC A-9.23.10.4.(1) CNB Tableau 9.10.3.1.-A CNB A-9.23.10.4. 1)
NLGA	2017	Standard Grading Rules for Canadian Lumber	NBC 9.3.2.1.(1) NBC A-9.3.2.1.(1) NBC Table A-9.3.2.1.(1)A NBC A-Table 9.3.2.1. NBC A-9.3.2.8.(1) NBC A-9.23.10.4.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
NLGA	2017	Règles de classification pour le bois d'oeuvre canadien	CNB 9.3.2.1. 1) CNB A-9.3.2.1. 1) CNB Tableau A-9.3.2.1. 1)A CNB A-Tableau 9.3.2.1. CNB A-9.3.2.8. 1) CNB A-9.23.10.4. 1)
CNRC	BPN 54F-85	La différence entre un pare-vapeur et un pare-air	CNB A-9.25.1.1. 2)
NRC	BPN 54-85	The difference between a vapour barrier and an air barrier	NBC A-9.25.1.1.(2)
NRC	CBD 222	Airtight houses and carbon monoxide poisoning	NBC A-9.33.1.1.(2)
NRC	CBD 230	Applying building codes to existing buildings	NBC A-1.1.1.1.(1) of Division A
NRC	CBD 231	Moisture problems in houses	NBC A-9.25.3.1.(1)
NRC	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	DCC 222F	Étanchéité à l'air des maisons et oxycarbonisme	CNB A-9.33.1.1. 2)
CNRC	DCC 230F	Application des codes aux bâtiments existants	CNB A-1.1.1.1. 1) de la division A
CNRC	DCC 231F	Problèmes d'humidité dans les maisons	CNB A-9.25.3.1. 1)
CNRC	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	NRCC 49677-2007	Best Practice Guide on Fire Stops and Fire Blocks and their Impact on Sound Transmission	NBC A-9.11.
NRC	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	1988	Performance and acceptability of wood floors – Forintek studies	NBC A-9.23.4.2.(2)
CNRC	1988	Performance and Acceptability of Wood Floors – Forintek Studies	CNB A-9.23.4.2. 2)
NRC Const.	RR-331-2013	Guide to Calculating Airborne Sound Transmission in Buildings	NBC A-5.8.1.4. NBC A-5.8.1.4.(4)(b)
CNRC Const.	RR-331-2017	Guide pour le calcul de la transmission des bruits aériens dans les bâtiments	CNB A-5.8.1.4. CNB A-5.8.1.4. 4)b)
NRC Const.	2005	A Guide for the Wind Design of Mechanically Attached Flexible Membrane Roofs	NBC A-5.2.2.2.(4)
CNRC Const.	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	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	DORS/2016-311	Règlement de 2016 sur l'efficacité énergétique	CNB Tableau 9.36.4.2. 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 5.2.12.4. 1) CNÉB A-5.2.12.1. 1) et 6.2.2.1. 1) CNÉB Tableau 6.2.2.1. CNÉB 6.2.2.4. 2) CNÉB 6.2.2.5. 1)
RNCan	L.C. 1992, ch. 36	Loi sur l'efficacité énergétique	CNÉB 5.2.12.4. 1) CNÉB A-5.2.12.1. 1) et 6.2.2.1. 1) CNÉB 6.2.2.4. 2) CNÉB 6.2.2.5. 1)
RNCan	L.R.C. (1985), ch. E-17	Loi sur les explosifs	CNB 3.3.6.2. 3) CNPI 3.1.1.3. 1) CNPI A-3.2.9.1. 1) CNPI 5.1.1.2. 1)
NRCan	R.S.C. 1985, c. E-17	Explosives Act	NBC 3.3.6.2.(3) NFC 3.1.1.3.(1) NFC A-3.2.9.1.(1) NFC 5.1.1.2.(1)
NRCan	S.C. 1992, c. 36	Energy Efficiency Act	NECB 5.2.12.4.(1) NECB A-5.2.12.1.(1) and 6.2.2.1.(1) NECB 6.2.2.4.(2) NECB 6.2.2.5.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
NRCan	SOR/2016-311	Energy Efficiency Regulations, 2016	NBC Table 9.36.4.2. 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 5.2.12.4.(1) NECB A-5.2.12.1.(1) and 6.2.2.1.(1) NECB Table 6.2.2.1. NECB 6.2.2.4.(2) NECB 6.2.2.5.(1)
NRCan	2010	Display Fireworks Manual	NFC 5.1.1.3.(1)
RNCan	2010	Manuel de l'artificier	CNPI 5.1.1.3. 1)
NSF	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	2008	Guidelines on Assessment and Remediation of Fungi in Indoor Environments	NBC A-5.5.1.1. CNB A-5.5.1.1.
OCIMF	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	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	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	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 Table 5.2.2.3. NECB A-5.2.2.1.(1) CNÉB 5.2.2.3. 1) CNÉB Tableau 5.2.2.3. CNÉB A-5.2.2.1. 1)
SMACNA	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	2003	Fibrous Glass Duct Construction Standards	NECB A-5.2.2.1.(1) CNÉB A-5.2.2.1. 1)
SMACNA	2006	HVAC Systems Duct Design	NECB A-5.2.2.1.(1) CNÉB A-5.2.2.1. 1)
SPRI	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	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	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)

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TC	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 A-1.4.1.2. 1) de la division A CNPI 3.1.2.1. 1) CNPI 3.2.7.1. 3) CNPI Tableau 3.2.7.1. CNPI Tableau 3.2.7.6. 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 A-3.2.7.1. 3)b) CNPI A-3.2.7.6. 3) CNPI A-3.2.7.14. 1) CNPI 4.1.1.1. 3) CNPI 4.2.3.1. 1) CNPI 4.2.3.2. 2) CNPI A-4.1.2.1. CNPI A-4.2.2.3. 2)
TC	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	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	DORS/96-433	Règlement de l'aviation canadien – Partie III	CNB 4.1.5.13. 1) CNPI 2.13.1.1. 1)
TC	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	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	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 A-1.4.1.2.(1) of Division A NFC 3.1.2.1.(1) NFC 3.2.7.1.(3) NFC Table 3.2.7.1. NFC Table 3.2.7.6. 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 A-3.2.7.1.(3)(b) NFC A-3.2.7.6.(3) NFC A-3.2.7.14.(1) NFC 4.1.1.1.(3) NFC 4.2.3.1.(1) NFC 4.2.3.2.(2) NFC A-4.1.2.1. NFC A-4.2.2.3.(2)
TC	SOR/2012-69	Vessel Pollution and Dangerous Chemicals Regulations	NFC A-4.8.8.1.(1)(a)
TC	SOR/82-1015	Railway Prevention of Electric Sparks Regulations	NFC 4.7.4.5.(2) NFC 4.8.5.1.(1)
TC	SOR/96-433	Canadian Aviation Regulations – Part III	NBC 4.1.5.13.(1) NFC 2.13.1.1.(1)
TC	2001	Standards Respecting Pipeline Crossings Under Railways	NFC 4.5.6.5.(3)
TC	2001	Normes concernant les canalisations traversant sous les voies ferrées	CNPI 4.5.6.5. 3)
TIAC	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	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	2019	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	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	ANSI/CAN/UL/ULC 2258:2018	Standard for Aboveground Nonmetallic Tanks for Fuel Oil and Other Combustible Liquids	NFC 4.3.1.2.(1)

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UL	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)
UL	ANSI/CAN/UL/ULC 300-2019	Standard for Fire Testing of Fire Extinguishing Systems for Protection of Commercial Cooking Equipment	NBC 6.9.1.3.(1)
UL	ANSI/CAN/UL/ULC 300-2019	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)
UL	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)
ULC	CAN/ULC-S1001-11	Standard for Integrated Systems Testing of Fire Protection and Life Safety Systems	NBC 3.2.9.1.(1) NBC A-3.2.9.1.(1) NBC 9.10.1.2.(1) NFC 6.8.1.1.(1) NFC A-6.8.1.1.(1)
ULC	CAN/ULC-S1001-11	Norme sur les essais intégrés de systèmes de protection incendie et de sécurité des personnes	CNB 3.2.9.1. 1) CNB A-3.2.9.1. 1) CNB 9.10.1.2. 1) CNPI 6.8.1.1. 1) CNPI A-6.8.1.1. 1)
ULC	CAN/ULC-S101-14	Standard Method of Fire Endurance Tests of Building Construction and Materials	NBC 2.2.1.8.(4) NBC 2.2.1.10.(1) NBC 3.1.5.7.(2) 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 3.1.7.1.(1) NBC 3.1.11.7.(1) NBC 3.2.3.8.(1) NBC A-3.1.5.14.(5)(d) NBC 9.10.16.3.(1) NBC Table 9.10.3.1.-B NBC D-1.1.1. NBC D-1.12.1. NBC D-2.3.2. NBC D-2.11.1.

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ULC	CAN/ULC-S101-14	Méthodes d'essai normalisées de résistance au feu pour les bâtiments et les matériaux de construction	CNB 2.2.1.8. 4) CNB 2.2.1.10. 1) CNB 3.1.5.7. 2) 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 3.1.7.1. 1) CNB 3.1.11.7. 1) CNB 3.2.3.8. 1) CNB A-3.1.5.14. 5)d) CNB 9.10.16.3. 1) CNB Tableau 9.10.3.1.-B CNB D-1.1.1. CNB D-1.12.1. CNB D-2.3.2. CNB D-2.11.1.
ULC	CAN/ULC-S102- 40 :2018	Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies	NBC 3.1.5.24.(1) NBC 3.1.12.1.(1) NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC 9.29.5.2.(1) NBC D-1.1.1. NBC D-6.1.1.
ULC	CAN/ULC-S102- 40 :2018	Méthode d'essai normalisée caractéristiques de combustion superficielle des matériaux de construction et assemblages	CNB 3.1.5.24. 1) CNB 3.1.12.1. 1) CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB 9.29.5.2. 1) CNB D-1.1.1. CNB D-6.1.1.
ULC	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	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	CAN/ULC-S102.3:2018	Standard Method of Fire Test of Light Diffusers and Lenses	NBC 3.1.13.4.(1)
ULC	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	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)

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ULC	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	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	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	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	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	CAN/ULC-S106-15	Standard Method for Fire Tests of Window and Glass Block Assemblies	NBC 3.1.8.4.(1)
ULC	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	CAN/ULC-S107:2019	Standard Methods of Fire Tests of Roof Coverings	NBC 3.1.15.1.(1)
ULC	CAN/ULC-S107:2019	Méthodes normalisées d'essai de résistance au feu des matériaux de couverture	CNB 3.1.15.1. 1)
ULC	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	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	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	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	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)
ULC	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	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	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)

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ULC	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	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	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	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	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-9.10.9.3.(2) NBC A-9.10.13.2.(1)
ULC	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-9.10.9.3. 2) CNB A-9.10.13.2. 1)
ULC	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	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
ULC	CAN/ULC-S115- 14 :2018	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 A-3.1.8.3.(2) NBC A-3.1.11.7.(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)

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ULC	CAN/ULC-S115- 44 :2018	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 A-3.1.8.3. 2) CNB A-3.1.11.7. 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)
ULC	CAN/ULC-S124-06	Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic	NBC 3.1.5.15.(2) NBC A-3.1.5.14.(5)(d)
ULC	CAN/ULC-S124-06	Méthode d'essai normalisée pour l'évaluation des revêtements protecteurs de la mousse plastique	CNB 3.1.5.15. 2) CNB A-3.1.5.14. 5)d)
ULC	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	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)
ULC	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	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	CAN/ULC-S137:2017	Standard Method of Test for Fire Growth of Mattresses (Open Flame Test)	NFC 2.3.2.3.(2)
ULC	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	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	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	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)

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ULC	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	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	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	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	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	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)
ULC	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	CAN/ULC-S503-05	Standard for Carbon-Dioxide Fire Extinguishers	NFC 2.1.5.1.(4)
ULC	CAN/ULC-S503-05	Norme sur les extincteurs au dioxyde de carbone	CNPI 2.1.5.1. 4)
ULC	CAN/ULC-S504-12	Standard for Dry Chemical Fire Extinguishers	NFC 2.1.5.1.(4)
ULC	CAN/ULC-S504-12	Norme sur les extincteurs à poudres chimiques	CNPI 2.1.5.1. 4)
ULC	CAN/ULC-S507-05	Standard for Water Fire Extinguishers	NFC 2.1.5.1.(4)
ULC	CAN/ULC-S507-05	Norme sur les extincteurs à eau	CNPI 2.1.5.1. 4)
ULC	CAN/ULC-S508-02	Standard for the Rating and Fire Testing of Fire Extinguishers	NFC 2.1.5.1.(5)
ULC	CAN/ULC-S508-02	Norme sur la classification et essai sur foyers types des extincteurs	CNPI 2.1.5.1. 5)
ULC	CAN/ULC-S512-M87	Standard for Halogenated Agent Hand and Wheeled Fire Extinguishers	NFC 2.1.5.1.(4)
ULC	CAN/ULC-S512-M87	Norme sur les extincteurs à produits halogénés, à main et sur roues	CNPI 2.1.5.1. 4)
ULC	CAN/ULC-S524:2019	Standard for Installation of Fire Alarm Systems	NBC 3.1.8.11.(3) NBC 3.1.8.14.(3) NBC 3.2.4.5.(1) NBC 3.2.4.20.(7) NBC 3.2.4.20.(8) NBC 3.2.4.20.(10) NBC 3.2.4.20.(15) NBC A-3.2.4.7.(4) 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 9.10.19.4.(3) NBC 9.10.19.6.(2)

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ULC	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 3.2.4.5. 1) CNB 3.2.4.20. 7) CNB 3.2.4.20. 8) CNB 3.2.4.20. 10) CNB 3.2.4.20. 15) CNB A-3.2.4.7. 4) 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 9.10.19.4. 3) CNB 9.10.19.6. 2)
ULC	CAN/ULC-S526-2016	Visible Signaling Devices for Fire Alarm and Signaling Systems, Including Accessories	NBC A-3.2.4.19.(3)
ULC	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	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	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	CAN/ULC-S536:2019	Standard for Inspection and Testing of Fire Alarm Systems	NFC 6.3.1.2.(1)
ULC	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	CAN/ULC-S537:2019	Standard for Verification of Fire Alarm Systems	NBC 3.2.4.5.(2)
ULC	CAN/ULC-S537:2019	Norme sur la vérification des systèmes d'alarme d'incendie	CNB 3.2.4.5. 2)
ULC	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 9.10.2.2.(3) NBC 9.10.2.2.(4) NBC 9.10.19.8.(1) NFC 6.7.1.1.(3)
ULC	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 9.10.2.2. 3) CNB 9.10.2.2. 4) CNB 9.10.19.8. 1) CNPI 6.7.1.1. 3)
ULC	CAN/ULC-S552-14	Standard for Maintenance and Testing of Smoke Alarms	NFC 6.7.1.1.(1)
ULC	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	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	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)

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ULC	CAN/ULC-S554:2016	Standard for Water Based Agent Fire Extinguishers	NFC 2.1.5.1.(4)
ULC	CAN/ULC-S554:2016	Norme sur les extincteurs à agent à base d'eau	CNPI 2.1.5.1. 4)
ULC	CAN/ULC-S561- 13 22	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	CAN/ULC-S561- 13 22	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	CAN/ULC-S566:2017	Standard for Halocarbon Clean Agent Fire Extinguishers	NFC 2.1.5.1.(4)
ULC	CAN/ULC-S566:2017	Norme sur les extincteurs aux agents propres à l'halocarbure	CNPI 2.1.5.1. 4)
ULC	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 A-3.4.5.1.(4) NBC 9.9.11.3.(3) NBC 9.9.11.3.(4)
ULC	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 A-3.4.5.1. 4) CNB 9.9.11.3. 3) CNB 9.9.11.3. 4)
ULC	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	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	CAN/ULC-S602-14	Standard for Steel Aboveground Tanks for Fuel Oil and Lubricating Oil	NFC 4.3.1.2.(1)
ULC	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)
ULC	CAN/ULC-S603.1- 14 :2022	Standard for External Corrosion Protection Systems for Steel Underground Tanks for Flammable and Combustible Liquids	NFC 4.3.1.2.(1) NFC 4.3.8.6.(1) NFC 4.3.10.1.(1) NFC 4.5.3.1.(1)
ULC	CAN/ULC-S603.1- 14 :2022	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 4.3.8.6. 1) CNPI 4.3.10.1. 1) CNPI 4.5.3.1. 1)
ULC	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	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	CAN/ULC-S610:2018	Standard for Factory-Built Fireplace Systems	NBC 9.22.8.1.(1)
ULC	CAN/ULC-S610:2018	Norme sur les systèmes foyers à feu ouvert préfabriqué	CNB 9.22.8.1. 1)
ULC	CAN/ULC-S612:2016	Standard for Hose and Hose Assemblies for Flammable and Combustible Liquids	NFC 4.6.5.1.(1)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	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	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	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	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	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	CAN/ULC- S629 629:2016 2022	Standard for 650°C Factory-Built Chimneys	NBC 9.33.10.2.(1)
ULC	CAN/ULC- S629 629:2016 2022	Norme sur les cheminées préfabriquées pour des températures n'excédant pas 650 °C	CNB 9.33.10.2. 1)
ULC	CAN/ULC-S633:2017	Standard for Flexible Connector Piping for Fuels	NFC 4.5.6.14.(2)
ULC	CAN/ULC-S633:2017	Norme pour les tuyaux de raccordement flexibles pour carburants	CNPI 4.5.6.14. 2)
ULC	CAN/ULC-S639- M87 :2018	Standard for Steel Liner Assemblies for Solid-Fuel Burning Masonry Fireplaces	NBC 9.22.2.3.(1)
ULC	CAN/ULC-S639- M87 :2018	Norme relative sur aux les chemisages en acier pour foyers à feu ouvert en maçonnerie à combustibles solides	CNB 9.22.2.3. 1)
ULC	CAN/ULC-S642: 2016 2021	Standard for Compounds and Tapes for Threaded Pipe Joints	NFC 4.5.5.1.(1)
ULC	CAN/ULC-S642: 2016 2021	Norme sur les composés et rubans pour joints de tuyau filetés	CNPI 4.5.5.1. 1)
ULC	CAN/ULC-S644:2016	Standard for Emergency Breakaway Fittings for Flammable and Combustible Liquids	NFC 4.6.5.2.(4)
ULC	CAN/ULC-S644:2016	Norme sur les raccords frangibles d'urgence pour liquides inflammables et combustibles	CNPI 4.6.5.2. 4)
ULC	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	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	CAN/ULC-S652:2016	Standard for Tank Assemblies for the Collection, Storage and Removal of Used Oil	NFC 4.3.1.2.(1)
ULC	CAN/ULC-S652:2016	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	CAN/ULC-S653:2016	Standard for Aboveground Horizontal Steel Contained Tank Assemblies for Flammable and Combustible Liquids	NFC 4.3.1.2.(1)
ULC	CAN/ULC-S653:2016	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	CAN/ULC-S655-15	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)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	CAN/ULC-S655-15	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)
ULC	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	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	CAN/ULC-S663-11	Standard for Spill Containment Devices for Flammable and Combustible Liquid Aboveground Storage Tanks	NFC 4.3.6.4.(4)
ULC	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	CAN/ULC-S664:2017	Standard for Containment Sumps, Sump Fittings, and Accessories for Flammable and Combustible Liquids	NFC 4.3.9.2.(1)
ULC	CAN/ULC-S664:2017	Norme sur les puisards de confinements, raccords de puisard et accessoires pour liquides inflammables et combustibles	CNPI 4.3.9.2. 1)
ULC	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	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	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	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	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.(5) NFC A-4.4.2.1.(7) NFC A-4.4.2.1.(10)(a)
ULC	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. 5) CNPI A-4.4.2.1. 7) CNPI A-4.4.2.1. 10)a)
ULC	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.(7) NFC A-4.4.2.1.(10)(a)
ULC	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. 7) CNPI A-4.4.2.1. 10)a)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	CAN/ULC-S676-15	Standard for Refurbishing of Storage Tanks for Flammable and Combustible Liquids	NFC 4.3.1.10.(1)
ULC	CAN/ULC-S676-15	Norme sur la remise à neuf des réservoirs de stockage pour les liquides inflammables et combustibles	CNPI 4.3.1.10. 1)
ULC	CAN/ULC-S677-14	Standard for Fire Tested Aboveground Tank Assemblies for Flammable and Combustible Liquids	NFC 4.3.1.2.(1)
ULC	CAN/ULC-S677-14	Norme sur les ensembles réservoirs hors sol résistant au feu pour les liquides inflammables et combustibles	CNPI 4.3.1.2. 1)
ULC	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	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	CAN/ULC-S701.1: 2017 <u>2022</u>	Standard for Thermal Insulation, Polystyrene Boards	NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC 9.25.2.2.(1) NBC Table A-9.36.2.4.(1)D
ULC	CAN/ULC-S701.1: 2017 <u>2022</u>	Norme sur l'isolant thermique en polystyrène, <u>panneaux</u>	CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB 9.25.2.2. 1) CNB Tableau A-9.36.2.4. 1)D
ULC	CAN/ULC-S702.1- 14 <u>:2021</u>	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification	NBC 3.1.6.3.(4) NBC Table 5.9.1.1. NBC A-5.9.1.1.(1) NBC 9.10.9.8.(3) NBC Table 9.23.17.2.A NBC 9.25.2.2.(1) NBC Table A-9.36.2.4.(1)D NBC D-2.3.4. NBC D-2.3.5. NBC D-2.6.1. NBC D-6.1.1. NBC D-7.4.

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	CAN/ULC-S702.1- 14 :2021	Norme sur l'isolant thermique de fibres minérales pour bâtiments, partie 1 : Spécifications specifications relatives aux matériaux	CNB 3.1.6.3. 4) CNB Tableau 5.9.1.1. CNB A-5.9.1.1. 1) CNB 9.10.9.8. 3) CNB Tableau 9.23.17.2.A CNB 9.25.2.2. 1) CNB Tableau A-9.36.2.4. 1)D CNB D-2.3.4. CNB D-2.3.5. CNB D-2.6.1. CNB D-6.1.1. CNB D-7.4.
ULC	CAN/ULC-S703-09	Standard for Cellulose Fibre Insulation (CFI) for Buildings	NBC Table 5.9.1.1. NBC 9.25.2.2.(1) NBC Table A-9.36.2.4.(1)D NBC D-2.3.4.
ULC	CAN/ULC-S703-09	Norme sur l'isolant en fibre cellulosique (IFC) pour les bâtiments	CNB Tableau 5.9.1.1. CNB 9.25.2.2. 1) CNB Tableau A-9.36.2.4. 1)D CNB D-2.3.4.
ULC	CAN/ULC-S704.1:2017	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced	NBC Table 5.9.1.1. NBC Table 9.23.17.2.A NBC 9.25.2.2.(1) NBC Table A-9.36.2.4.(1)D
ULC	CAN/ULC-S704.1:2017	Norme sur l'isolant thermique en polyuréthane et en polyisocyanurate : panneaux revêtus	CNB Tableau 5.9.1.1. CNB Tableau 9.23.17.2.A CNB 9.25.2.2. 1) CNB Tableau A-9.36.2.4. 1)D
ULC	CAN/ULC-S705.1-18	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification	NBC Table 5.9.1.1. NBC 9.25.2.2.(1) NBC Table A-9.36.2.4.(1)D
ULC	CAN/ULC-S705.1-18	Norme sur l'isolant thermique en mousse de polyuréthane rigide pulvérisée, de densité moyenne – spécifications relatives aux matériaux	CNB Tableau 5.9.1.1. CNB 9.25.2.2. 1) CNB Tableau A-9.36.2.4. 1)D
ULC	CAN/ULC-S705.2- 05 :2020	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application	NBC Table 5.9.1.1. NBC 9.25.2.5.(1)
ULC	CAN/ULC-S705.2- 05 :2020	Norme sur l'isolant thermique en mousse de polyuréthane rigide pulvérisée, de densité moyenne – Application	CNB Tableau 5.9.1.1. CNB 9.25.2.5. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	CAN/ULC-S706.1: 2016 <u>2020</u>	Standard for Insulating Wood Fibre Insulating Boards for Buildings	NBC Table 5.9.1.1. NBC 9.23.16.7.(3) NBC Table 9.23.17.2.A NBC 9.25.2.2.(1) NBC 9.29.8.1.(1) NBC D-3.1.1.
ULC	CAN/ULC-S706.1: 2016 <u>2020</u>	Norme sur les panneaux isolants en fibre de bois pour bâtiments	CNB Tableau 5.9.1.1. CNB 9.23.16.7. 3) CNB Tableau 9.23.17.2.A CNB 9.25.2.2. 1) CNB 9.29.8.1. 1) CNB D-3.1.1.
ULC	CAN/ULC-S710.1:2019	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification	NBC Table 5.9.1.1. NBC 9.36.2.10.(6)
ULC	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 Tableau 5.9.1.1. CNB 9.36.2.10. 6)
ULC	CAN/ULC-S711.1:2019	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification	NBC Table 5.9.1.1. NBC 9.36.2.10.(6)
ULC	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 Tableau 5.9.1.1. CNB 9.36.2.10. 6)
ULC	CAN/ULC-S712.1: 2017 <u>2021</u>	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	CAN/ULC-S712.1: 2017 <u>2021</u>	Norme sur l'isolant thermique en mousse de polyuréthane semi-rigide pulvérisée, de faible densité et à alvéoles <u>avéoles</u> ouverts --- spécifications relatives au matériau	CNB Tableau A-9.36.2.4. 1)D
ULC	CAN/ULC-S716.1: 12 <u>2019</u>	Standard for Exterior Insulation and Finish Systems (EIFS) --- <u>---</u> Materials and Systems	NBC 5.9.4.1.(1) NBC A-5.9.4.1.(1) NBC 9.27.14.1.(1) NBC 9.27.14.2.(1) NBC A-9.27.14.2.(2)(a)
ULC	CAN/ULC-S716.1: 12 <u>2019</u>	Norme pour les systèmes d'isolation et de finition extérieurs (Systèmes <u>systèmes</u> SIFE) – Matériaux <u>matériaux</u> et systèmes	CNB 5.9.4.1. 1) CNB A-5.9.4.1. 1) CNB 9.27.14.1. 1) CNB 9.27.14.2. 1) CNB A-9.27.14.2. 2)a)
ULC	CAN/ULC-S716.2: 12 <u>2019</u>	Standard for Exterior Insulation and Finish Systems (EIFS) --- <u>---</u> Installation of EIFS Components and Water Resistive Barrier	NBC A-5.9.4.1.(1) NBC 9.27.14.3.(1)
ULC	CAN/ULC-S716.2: 12 <u>2019</u>	Norme pour les systèmes d'isolation et de finition extérieurs (<u>systèmes</u> SIFE) – Installation des composants des systèmes SIFE et de la barrière résistante à l'eau	CNB A-5.9.4.1. 1) CNB 9.27.14.3. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	CAN/ULC-S716.3- 12 :2019	Standard for Exterior Insulation and Finish System Systems (EIFS) – Design Application	NBC A-5.9.4.1.(1) NBC 9.27.14.3.(1)
ULC	CAN/ULC-S716.3- 12 :2019	Norme pour les systèmes d'isolation et de finition extérieurs (Systèmes systèmes SIFE) – Application de la conception	CNB A-5.9.4.1. 1) CNB 9.27.14.3. 1)
ULC	CAN/ULC-S717.1:2017	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties	NBC Table 5.9.1.1. NBC 9.15.4.1.(1)
ULC	CAN/ULC-S717.1:2017	Norme sur les unités de coffrage à bétons isolants pour murs plats – propriétés des matériaux	CNB Tableau 5.9.1.1. CNB 9.15.4.1. 1)
ULC	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	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	CAN/ULC-S742- 44 :2020	Standard for Air Barrier Assemblies – Specification	NBC 5.4.1.2.(1) NBC 5.4.1.2.(2) 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 9.36.2.9.(1) NBC A-9.36.2.9.(1) NBC A-9.36.2.10.(5)(b) NECB 3.2.4.3.(2) NECB A-3.2.4.3.(1) and (2)
ULC	CAN/ULC-S742- 44 :2020	Norme sur les ensembles d'étanchéité à l'air – Spécification spécifications	CNB 5.4.1.2. 1) CNB 5.4.1.2. 2) CNB A-5.4.1.1. 3) CNB A-5.4.1.2. 1) CNB A-5.4.1.2. 2) CNB A-5.4.1.2. 4) CNB 9.36.2.9. 1) CNB A-9.36.2.9. 1) CNB A-9.36.2.10. 5)b) CNÉB 3.2.4.3. 2) CNÉB A-3.2.4.3. 1) et 2)
ULC	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	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	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)

Issuing Agency	Document Number	Title of Document	Code Reference
ULC	ULC/ORD-C107.21-92	Under-Dispenser Sumps	NFC 4.6.3.2.(1) CNPI 4.6.3.2. 1)
ULC	ULC/ORD-C1254.6-95	Fire Testing of Restaurant Cooking Area Fire Extinguishing System Units	NBC 6.9.1.3.(1) CNB 6.9.1.3. 1)
ULC	ULC/ORD-C1275-84	Guide for the Investigation of Storage Cabinets for Flammable Liquid Containers	NFC 4.2.10.5.(1) CNPI 4.2.10.5. 1)
ULC	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)
ULC	ULC/ORD-C30-95	Safety Containers	NFC 4.1.5.8.(2) NFC 4.2.3.1.(1) NFC 4.2.6.4.(1) NFC 5.5.5.2.(2) 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	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	ULC/ORD-C536-98	Flexible Metallic Hose	NFC 4.5.6.14.(2) CNPI 4.5.6.14. 2)
ULC	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	ULC/ORD-C583-74	Guide for the Investigation of Electric Battery Powered Industrial Trucks	NFC 3.1.3.1.(3) CNPI 3.1.3.1. 3)
ULC	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	ULC-S135-04	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	ULC-S332-93	Standard for Burglary Resisting Glazing Material	NBC A-9.7.5.2.(1) CNB A-9.7.5.2. 1)
ULC	ULC-S505-74	Standard for Fusible Links for Fire Protection Services	NBC 3.1.8.10.(2) CNB 3.1.8.10. 2)
ULC	CAN/ULC-S628-93 <u>CAN/ULC-S628-93</u> <u>628:2022</u>	Standard for Fireplace Inserts <u>and Hearth-Mounted Stoves</u>	NBC 9.22.10.1.(1) CNB 9.22.10.1. 1)

Issuing Agency	Document Number	Title of Document	Code Reference
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	No. 17 (2004)	Grading Rules for West Coast Lumber	NBC A-Table 9.3.2.1. CNB A-Tableau 9.3.2.1.
WWPA	2017 2021	Western Lumber Grading Rules 2017	NBC A-Table 9.3.2.1. CNB A-Tableau 9.3.2.1.

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Proposed Change 1698

Code Reference(s):	NBC20 Div.B 3.2.4.2. (first printing)
Subject:	Penetrations
Title:	Addition of a Cross-reference to Firestopping Provisions for Permitted Service Penetrations
Description:	This proposed change introduces a cross-reference to Subsection 3.1.9. to clarify that the service penetrations permitted by Sentence 3.2.4.2.(4) are required to be firestopped in accordance with that Subsection.
Related Code Change Request(s):	CCR 1126
Related Proposed Change(s):	PCF 1697

This change could potentially affect the following topic areas:

- | | |
|--|--|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input checked="" type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

NBC Sentence 3.2.4.2.(4) allows a portion of a building separated by a fire separation having a minimum 1-hour fire-resistance rating to be treated as if it were a separate building for the purposes of Subsection 3.2.4. where specific service penetrations (i.e., piping, tubing, wiring and totally enclosed noncombustible raceways) are installed in the fire separation.

There is concern that this provision currently does not clearly require that the permitted service penetrations be cast in place or sealed by a firestop, as required by other NBC provisions. Code users may misunderstand the permission for the specific service penetrations and mistakenly fail to implement the required fire protection.

This proposed change clarifies that the permitted service penetrations are required to be protected in accordance with the requirements of Subsection 3.1.9., as applicable.

Justification

This proposed change clarifies that permitted service penetrations are required to be firestopped or otherwise protected in conformance with the referenced firestopping provisions. This proposed change aims to reduce the risk that the Code will not be applied as intended.

PROPOSED CHANGE

[3.2.4.2.] 3.2.4.2. Continuity of Fire Alarm System

- [1] 1) Except as permitted by Sentence (6), if there are openings through a *firewall*, other than those for piping, tubing, wiring and totally enclosed *noncombustible* raceways, the requirements in this Subsection shall apply to the *floor areas* on both sides of the *firewall* as if they were in the same *building*.
- [2] 2) Except as permitted by Sentence (4), if a *building* contains more than one *major occupancy* and a fire alarm system is required, a single system shall serve all *occupancies*.
- [3] 3) Except as permitted by Sentence (4), if a fire alarm system is required in any portion of a *building*, it shall be installed throughout the *building*.
- [4] 4) Except as required by Sentence (5), the requirements in this Subsection are permitted to be applied to each portion of a *building* not more than 3 *storeys* in *building height*, in which a vertical *fire separation* having a *fire-resistance rating* not less than 1 h separates the portion from the remainder of the *building* as if it were a separate *building*, provided there are no openings through the *fire separation*, other than those for piping, tubing, wiring and totally enclosed *noncombustible* raceways that are sealed at the penetration by a firestop or protected in accordance with Subsection 3.1.9.
- [5] 5) The permission in Sentence (4) to consider separated portions of a *building* as separate *buildings* does not apply to *service rooms* and storage rooms.

- [6] 6) *Buildings* interconnected by *walkways* permitted in Articles 3.2.3.19. and 3.2.3.20. or by vestibules provided in conformance with Article 3.2.6.3. shall be treated as separate *buildings* for the purpose of fire alarm installation required by this Subsection.

Impact analysis

The installation of firestops costs between \$7 and \$11 per service penetration opening (\$1 for materials and \$6 to \$10 for labour), depending on the applicable solution that is selected.

The potential benefit of the proposed change is not quantified, but it is expected to reduce the risk of fire spread from one portion of a building to another that is constructed in accordance with this provision.

This proposed change is not expected to entail additional costs not otherwise intended by the current Code provisions.

Enforcement implications

The clear direction afforded by the proposed change is expected to simplify enforcement.

Who is affected

Regulators, designers, engineers, building owners, contractors, and fire services will benefit from the added clarity of the proposed change, which directs Code users to the provisions regarding the firestopping/fire protection of openings for penetrations.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[3.2.4.2.] 3.2.4.2. ([1] 1) [F11-OS1.5]

[3.2.4.2.] 3.2.4.2. ([2] 2) [F11-OS1.5]

[3.2.4.2.] 3.2.4.2. ([3] 3) [F11-OS1.5]

[3.2.4.2.] 3.2.4.2. ([4] 4) [F10-OS1.5] [F03-OS1.2]

[\[3.2.4.2.\]](#) 3.2.4.2. ([\[5\]](#) 5) [F11,F13-OS1.2]

[\[3.2.4.2.\]](#) 3.2.4.2. ([\[6\]](#) 6) [F11-OS1.5]

[\[3.2.4.2.\]](#) 3.2.4.2. ([\[6\]](#) 6) no attributions

[Submit a comment](#)

Proposed Change 1749

Code Reference(s): NBC20 Div.B 3.2.4.22. (first printing)
Subject: Fire Alarm and Detection Systems
Title: Voice Communication Systems - Referenced Standards on Intelligibility
Description: This proposed change updates explanatory Note A-3.2.4.22.(1)(b) on the intelligibility of alarm messages by removing references to standards that are not relevant to the requirement.

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The term "intelligibility" was first introduced in the NBC 1995 Clause 3.2.4.22.(1)(b) regarding voice communication systems in high buildings. A lengthy explanatory Note, which included a reference to ISO 7731, was added. Additional changes were made in the NBC 2010 and 2015 to Article 3.2.4.22. and explanatory Note A-3.2.4.22.(1)(b). Currently, this Note references five standards. However, these referenced standards are not relevant or applicable to the intelligibility of voice communication systems, which causes confusion and provides vague or misdirected guidance in support of the requirements of Article 3.2.4.22.

Justification

The proposed change would simplify explanatory Note 3.2.4.22.(1)(b) by removing references to non-pertinent standards, leaving only the relevant standard that provides technical guidance and explanations on the measurement of speech intelligibility (IEC 60268-16, "Sound system equipment – Part 16: Objective rating of speech intelligibility by speech transmission index").

The following standards are proposed to be removed from the Note for the reasons noted below:

- ISO 7731:2003, "Ergonomics – Danger signals for public and work area – Auditory danger signals," is not intended to be applicable to voice communication systems and refers to ISO 9921 for verbal signals.
- ISO 7240-19, "Fire detection and alarm systems – Part 19: Design, installation, commissioning and service of sound systems for emergency purposes," refers to IEC 60268-16 for intelligibility measurements, which is the standard proposed to be retained in the Note.
- NFPA 72-2016, "National Fire Alarm and Signaling Code" (Annex D), also refers to IEC 60268-16, which is the standard proposed to be retained in the Note.
- NEMA SB 50:2008, "Emergency Communications Audio Intelligibility Applications Guide," is not pertinent to the content of the explanatory Note or its related provision.

EXISTING PROVISION

NBC20 Div.B 3.2.4.22. (first printing)

3.2.4.22. Voice Communication Systems for High Buildings

- 1) A voice communication system required by Subsection 3.2.6. shall
 - a) consist of a two-way means of communication with the central alarm and control facility and to the mechanical control centre from each *floor area*, and
 - b) be capable of broadcasting prerecorded, synthesized, or live messages from the central alarm and control facility that are audible and intelligible in all parts of the *building*, except that this requirement does not apply to elevator cars (see Note A-3.2.4.22.(1)(b)).
- 2) The voice communication system referred to in Sentence (1) shall include a means to silence the *alarm signal* in a single stage fire alarm system while voice instructions are being transmitted, but only after the *alarm signal* has initially sounded for not less than 30 s.

- 3) The voice communication system referred to in Sentence (1) shall include a means to silence the *alert signal* and the *alarm signal* in a 2-stage fire alarm system while voice instructions are being transmitted, but only after the *alert signal* has initially sounded for not less than
 - a) 10 s in hospitals that have supervisory personnel on duty for twenty-four hours each day, or
 - b) 30 s for all other *occupancies*.
- 4) The voice communication system referred to in Clause (1)(b) shall be designed so that the *alarm signal* in a 2-stage fire alarm system can be selectively transmitted to any zone or zones while maintaining an *alert signal* or selectively transmitting voice instructions to any other zone or zones in the *building*.
- 5) The 2-way communication system referred to in Clause (1)(a) shall be installed so that emergency telephones are located in each *floor area* near *exit* stair shafts.
- 6) Visible signal devices required by Sentence 3.2.4.19.(1) shall continue to emit a visible signal while voice instructions are being transmitted.
- 7) Where the facility is not equipped with staff trained to provide instructions over the loudspeakers, a pre-recorded message shall be provided.

Note A-3.2.4.22.(1)(b) Voice Messages.

The concept of intelligibility expressed in Clause 3.2.4.22.(1)(b) is intended to mean that a person with average hearing and cognitive abilities is able to understand the messages that are transmitted into the space occupied by the person. There is no absolute measure to predetermine the effect of loudspeakers and it may be necessary, once the building has been furnished and occupied, to increase the number of loudspeakers to improve the quality of the messages.

The intelligibility of the message depends on the speech level, the background level, and the reverberation time of the space. ISO 7731, "Ergonomics – Danger signals for public and work areas – Auditory danger signals", addresses audibility. The standard suggests that an A-weighted sound level at least 15 dBA above the ambient is required for audibility, but allows for more precise calculations using octave or 1/3 octave band frequencies to tailor the alarm signal for particular ambient noise conditions. Design of the alarm system is limited to ensuring that all areas receive an adequately loud alarm signal.

If a public address system is to be used to convey instructions during an emergency, then the requirements of the system are less straightforward. In general, however, a larger number of speakers operating at lower sound levels would be required.

Additional guidance on how to design and evaluate the intelligibility of a communication system can be found in the following documents:

- IEC 60268-16, "Sound system equipment – Part 16: Objective rating of speech intelligibility by speech transmission index"

- ISO 7240-19, "Fire detection and alarm systems – Part 19: Design, installation, commissioning and service of sound systems for emergency purposes"
- NEMA SB 50, "Emergency Communications Audio Intelligibility Applications Guide"
- Annex D of NFPA 72, "National Fire Alarm and Signaling Code"

PROPOSED CHANGE

NBC20 Div.B 3.2.4.22. (first printing)

[\[3.2.4.22.\]](#) 3.2.4.22. Voice Communication Systems for High Buildings

Note A-3.2.4.22.(1)(b) [Intelligibility of Voice Messages](#).

The concept of intelligibility expressed in Clause 3.2.4.22.(1)(b) is intended to mean that a person with average hearing and cognitive abilities is able to understand the messages that are transmitted into the space occupied by the person. ~~There is no absolute measure to predetermine the effect of loudspeakers and it may be necessary, once the building has been furnished and occupied, to increase the number of loudspeakers to improve the quality of the messages.~~

The intelligibility of the message depends on the speech [sound](#) level, the background [sound](#) level, and the reverberation time of the space. [IEC 60268-16, "Sound system equipment – Part 16: Objective rating of speech intelligibility by speech transmission index,"](#) ~~provides technical guidance to measure intelligibility and contains detailed explanations of the acoustical physics involved.~~ [ISO 7731, "Ergonomics – Danger signals for public and work areas – Auditory danger signals,"](#) ~~addresses audibility. The standard suggests that an A-weighted sound level at least 15 dBA above the ambient is required for audibility, but allows for more precise calculations using octave or 1/3 octave band frequencies to tailor the alarm signal for particular ambient noise conditions. Design of the alarm system is limited to ensuring that all areas receive an adequately loud alarm signal.~~

~~If a public address system is to be used to convey instructions during an emergency, then the requirements of the system are less straightforward. In general, however, a larger number of speakers operating at lower sound levels would be required.~~

~~Additional guidance on how to design and evaluate the intelligibility of a communication system can be found in the following documents:~~

- ~~IEC 60268-16, "Sound system equipment – Part 16: Objective rating of speech intelligibility by speech transmission index"~~
- ~~ISO 7240-19, "Fire detection and alarm systems – Part 19: Design, installation, commissioning and service of sound systems for emergency purposes"~~
- ~~NEMA SB 50, "Emergency Communications Audio Intelligibility Applications Guide"~~
- ~~Annex D of NFPA 72, "National Fire Alarm and Signaling Code"~~

Impact analysis

The simplified explanatory Note would provide more direct guidance on the topic of intelligibility, as intended.

Code users would not need to purchase additional standards to obtain the necessary information.

Enforcement implications

The proposed change can be enforced by the infrastructure currently available to enforce the Code. The Note provides additional guidance on the intelligibility of alarm messages.

Who is affected

Designers and Code users will be provided with a more direct resource to consult when implementing requirements for voice communication systems in high buildings.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 3.2.4.22. (first printing)

[\[3.2.4.22.\]](#) 3.2.4.22. ([1] 1) [F12,F11-OS3.7]

[\[3.2.4.22.\]](#) 3.2.4.22. ([2] 2) [F11-OS1.5]

[\[3.2.4.22.\]](#) 3.2.4.22. ([3] 3) [F11-OS1.5] [F13-OS1.4,OS1.5]

[\[3.2.4.22.\]](#) 3.2.4.22. ([4] 4) [F11-OS1.5]

[\[3.2.4.22.\]](#) 3.2.4.22. ([5] 5) [F12-OS3.7]

[\[3.2.4.22.\]](#) 3.2.4.22. ([6] 6) [F11-OS1.5]

[\[3.2.4.22.\]](#) 3.2.4.22. ([7] 7) [F11-OS1.5]

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Proposed Change 1711

Code Reference(s): NBC20 Div.B 3.3.1.9. (first printing)
NBC20 Div.B 3.3.2.4. (first printing)
NBC20 Div.B 9.5.4.1. (first printing)
NBC20 Div.B 9.9.5.2. (first printing)
NFC20 Div.B 2.7.1.5. (first printing)

Subject: Other — Use and Egress

Title: "Clear Width" versus "Unobstructed Width"

Description: This proposed change applies a consistent use of "clear width", "unobstructed width" and other similar terms across the NBC and NFC.

Related Code Change CCR 1529

Request(s):

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input checked="" type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input checked="" type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The term "clear width" is commonly used in the Codes and its meaning is explained and illustrated in explanatory Note A-3.4.3.4. Two similar terms, "unobstructed width" and "unobstructed passage," are also used in the Codes without explicit differentiation from the term "clear width." Using different terminology to define the same or very similar concept makes Code language inconsistent and is likely to cause confusion amongst Code users if the terms are not used carefully and intentionally.

Justification

This proposed change standardizes the terminology used in the NBC and NFC to bring about consistency and clarity.

As stated in NBC explanatory Note A-3.4.3.4. and illustrated in the related Figure: "Clear width is intended to be measured from a line tangent to horizontal protrusions such as handrails." The clear width required of a space is one that does not contain obstructions that would make the space narrower.

The term "clear width" is used to describe the required spacing or dimensions of building elements, such as doorway openings, aisles and paths of travel.

The terms "clear width" and "unobstructed" are also used in standards, such as NFPA 101, "Life Safety Code," and CSA B651, "Accessible design for the built environment." Although "unobstructed width" does not appear as an independent term, the phrase "clear and unobstructed width" is used.

The term "unobstructed" is used to describe paths or areas that do not contain obstructions, such as handrails, water fountains, wall protrusions or floor level changes, or in provisions that require the provision of unobstructed access to a space.

In the NBC and NFC, several instances of "unobstructed width" and "unobstructed passage" are used in the sense of "clear width." This proposed change standardizes the terminology for consistency throughout the two Codes.

EXISTING PROVISION

NBC20 Div.B 3.3.1.9. (first printing)

3.3.1.9. Corridors

- 1) The minimum width of a *public corridor* shall be 1 100 mm.
- 2) Except as required by Sentence 3.3.3.3.(3), the minimum unobstructed width of a corridor used by the public or a corridor serving classrooms or patients' sleeping rooms shall be 1 100 mm.
- 3) If a corridor contains an *occupancy*, the *occupancy* shall not reduce the unobstructed width of the corridor to less than its required width.
- 4) If a *public corridor* conforming to Clause 3.4.2.5.(1)(d) contains an *occupancy*,
 - a) the *occupancy* shall be located so that for pedestrian travel there is an unobstructed width not less than 3 m at all times adjacent and parallel to all rooms and *suites* that front onto the *public corridor*, and
 - b) the combined area of all *occupancies* in the *public corridor* shall be not more than 15% of the area of the *public corridor*.

- 5) Except for a dead-end corridor that is entirely within a *suite* or as permitted by Sentences 3.3.3.3.(1) and 3.3.4.4.(6), a dead-end corridor is permitted provided it is not more than 6 m long.

NBC20 Div.B 3.3.2.4. (first printing)**3.3.2.4. Fixed Seats**

- 1) Except for the requirements of Article 3.3.2.8. for bench-type seats and except as required or permitted by Sentence (2) and Articles 3.3.2.11. and 3.3.2.12., fixed seats in places of assembly shall be
 - a) attached or secured to the floor, platform or platform riser,
 - b) provided with arms and back, and
 - c) arranged in rows having an unobstructed passage not less than 400 mm wide measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row in the unoccupied position.
- 2) For fixed seats with backs and with folding tablet arms, the value of 400 mm required by Clause (1)(c) shall be measured when the tablet arms are in the use position, but is permitted to be measured in the stored position provided
 - a) there are not more than 7 seats between any seat and the nearest aisle,
 - b) the seats are located in a lecture hall or an auditorium used for instructional purposes, and
 - c) the tablet arm, when raised manually to a vertical position, falls by the force of gravity to the stored position.

(See Note A-3.3.2.4.(2).)

- 3) Except as permitted by Sentence (4), aisles shall be located so that there are not more than 7 seats with backs or 20 seats without backs between any seat and the nearest aisle.
- 4) The requirements of Sentence (3) do not apply if
 - a) egress doorways are provided to serve both ends of rows of seats,
 - b) each doorway referred to in Clause (a) serves not more than 3 rows of seats, and
 - c) each row contains not more than 100 seats.

Note A-3.3.2.4.(2) Tablet Arms.

Although it is intended that the motion to raise the tablet arm be essentially a single fluid motion, it is acceptable that the motion be a compound motion of raising the tablet arm and including an articulation to allow the tablet to fall back alongside the arm rest.

NBC20 Div.B 9.5.4.1. (first printing)**9.5.4.1. Hallway Width**

- 1) The unobstructed width of a hallway within a *dwelling unit* shall be not less than 860 mm, except that the hallway width is permitted to be 710 mm where
 - a) there are only bedrooms and bathrooms at the end of the hallway furthest from the living area, and
 - b) a second *exit* is provided
 - i) in the hallway near the end farthest from the living area, or
 - ii) in each bedroom served by the hallway.

NBC20 Div.B 9.9.5.2. (first printing)**9.9.5.2. Occupancies in Corridors**

- 1) Where a corridor contains an *occupancy*, the *occupancy* shall not reduce the unobstructed width of the corridor to less than the required width of the corridor.

NFC20 Div.B 2.7.1.5. (first printing)**2.7.1.5. Nonfixed Seating**

- 1) When nonfixed seats are provided in *assembly occupancies*,
 - a) except as provided in Sentence (3), the seats shall be arranged in rows having an unobstructed passage of not less than 400 mm between rows measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row behind in the unoccupied position,
 - b) except as provided in Sentence (2), aisles shall be located so that there are not more than 7 seats between every seat and the nearest aisle,
 - c) except as provided in Sentence (2), the clear width of an aisle in millimetres shall be not less than the greater of 1 100 or the product of the number of seats served by that aisle and 6.1,
 - d) the width of an aisle is permitted to be reduced to not less than 750 mm when serving 60 seats or fewer,
 - e) dead-end aisles shall not be longer than 6 m, and
 - f) except as provided in Sentence (3), when the *occupant load* exceeds 200 persons,
 - i) the seats in a row shall be fastened together in units of no fewer than 8 seats, or
 - ii) where there are 7 seats or fewer in a row, all the seats in the row shall be fastened together.
- 2) When nonfixed seats are provided in outdoor *assembly occupancies*,

- a) aisles shall be located so that there are not more than 15 seats between every seat and the nearest aisle, and
 - b) the clear width of an aisle in millimetres shall be not less than the greater of 1 200 or the product of the number of seats served by that aisle and 1.8.
- 3) When nonfixed seats are provided at tables arranged in rows, the spacing between the nearest edges of tables in 2 successive rows shall be not less than
- a) 1 400 mm where seating is arranged on both sides of tables (back to back), or
 - b) 1 000 mm where seating is on one side only.

PROPOSED CHANGE

NBC20 Div.B 3.3.1.9. (first printing)

[3.3.1.9.] 3.3.1.9. Corridors

- [1] 1) The minimum width of a *public corridor* shall be 1 100 mm.
- [2] 2) Except as required by Sentence 3.3.3.3.(3), the minimum ~~clear~~~~unobstructed~~ width of a corridor used by the public or a corridor serving classrooms or patients' sleeping rooms shall be 1 100 mm.
- [3] 3) If a corridor contains an *occupancy*, the *occupancy* shall not reduce the ~~unobstructed~~~~clear~~ width of the corridor to less than its required width.
- [4] 4) If a *public corridor* conforming to Clause 3.4.2.5.(1)(d) contains an *occupancy*,
 - [a] a) the *occupancy* shall be located so that for pedestrian travel there is ~~an~~ ~~unobstructed~~~~clear~~ width not less than 3 m at all times adjacent and parallel to all rooms and *suites* that front onto the *public corridor*, and
 - [b] b) the combined area of all *occupancies* in the *public corridor* shall be not more than 15% of the area of the *public corridor*.
- [5] 5) Except for a dead-end corridor that is entirely within a *suite* or as permitted by Sentences 3.3.3.3.(1) and 3.3.4.4.(6), a dead-end corridor is permitted provided it is not more than 6 m long.

NBC20 Div.B 3.3.2.4. (first printing)

[3.3.2.4.] 3.3.2.4. Fixed Seats

- [1] 1) Except for the requirements of Article 3.3.2.8. for bench-type seats and except as required or permitted by Sentence (2) and Articles 3.3.2.11. and 3.3.2.12., fixed seats in places of assembly shall be
 - [a] a) attached or secured to the floor, platform or platform riser,

- [b] b) provided with arms and back, and
 - [c] c) arranged in rows having a ~~an unobstructed passage~~ **clear width** not less than 400 mm wide measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row in the unoccupied position.
- [2] 2) For fixed seats with backs and with folding tablet arms, the value of 400 mm required by Clause (1)(c) shall be measured when the tablet arms are in the use position, but is permitted to be measured in the stored position provided
- [a] a) there are not more than 7 seats between any seat and the nearest aisle,
 - [b] b) the seats are located in a lecture hall or an auditorium used for instructional purposes, and
 - [c] c) the tablet arm, when raised manually to a vertical position, falls by the force of gravity to the stored position.
- (See Note A-3.3.2.4.(2).)
- [3] 3) Except as permitted by Sentence (4), aisles shall be located so that there are not more than 7 seats with backs or 20 seats without backs between any seat and the nearest aisle.
- [4] 4) The requirements of Sentence (3) do not apply if
- [a] a) egress doorways are provided to serve both ends of rows of seats,
 - [b] b) each doorway referred to in Clause (a) serves not more than 3 rows of seats, and
 - [c] c) each row contains not more than 100 seats.

NBC20 Div.B 9.5.4.1. (first printing)

[9.5.4.1.] 9.5.4.1. Hallway Width

- [1] 1) The ~~unobstructed~~ **clear** width of a hallway within a *dwelling unit* shall be not less than 860 mm, except that the hallway width is permitted to be 710 mm where
- [a] a) there are only bedrooms and bathrooms at the end of the hallway furthest from the living area, and
 - [b] b) a second *exit* is provided
 - [i] i) in the hallway near the end farthest from the living area, or
 - [ii] ii) in each bedroom served by the hallway.

NBC20 Div.B 9.9.5.2. (first printing)

[9.9.5.2.] 9.9.5.2. Occupancies in Corridors

- [1] 1) Where a corridor contains an *occupancy*, the *occupancy* shall not reduce the ~~unobstructed~~ **clear** width of the corridor to less than the required width of the corridor.

NFC20 Div.B 2.7.1.5. (first printing)

[2.7.1.5.] 2.7.1.5. Nonfixed Seating

- [1] 1) When nonfixed seats are provided in *assembly occupancies*,
- [a] a) except as provided in Sentence (3), the seats shall be arranged in rows having a ~~n-unobstructed passage~~ clear width of not less than 400 mm between rows measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row behind in the unoccupied position,
 - [b] b) except as provided in Sentence (2), aisles shall be located so that there are not more than 7 seats between every seat and the nearest aisle,
 - [c] c) except as provided in Sentence (2), the clear width of an aisle in millimetres shall be not less than the greater of 1 100 or the product of the number of seats served by that aisle and 6.1,
 - [d] d) the width of an aisle is permitted to be reduced to not less than 750 mm when serving 60 seats or fewer,
 - [e] e) dead-end aisles shall not be longer than 6 m, and
 - [f] f) except as provided in Sentence (3), when the *occupant load* exceeds 200 persons,
 - [i] i) the seats in a row shall be fastened together in units of no fewer than 8 seats, or
 - [ii] ii) where there are 7 seats or fewer in a row, all the seats in the row shall be fastened together.
- [2] 2) When nonfixed seats are provided in outdoor *assembly occupancies*,
- [a] a) aisles shall be located so that there are not more than 15 seats between every seat and the nearest aisle, and
 - [b] b) the clear width of an aisle in millimetres shall be not less than the greater of 1 200 or the product of the number of seats served by that aisle and 1.8.
- [3] 3) When nonfixed seats are provided at tables arranged in rows, the spacing between the nearest edges of tables in 2 successive rows shall be not less than
- [a] a) 1 400 mm where seating is arranged on both sides of tables (back to back), or
 - [b] b) 1 000 mm where seating is on one side only.

Impact analysis

This proposed change reduces the likelihood of confusion related to the use of different terms with the same intended meaning. As the change is editorial, it has no cost implications.

Enforcement implications

Clear and consistent language facilitates the enforcement of Code requirements. This proposed change can be enforced by the infrastructure currently available to enforce these Codes.

Who is affected

Code users, who will find the use of consistent language easier to follow and clearer.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 3.3.1.9. (first printing)

[\[3.3.1.9.\]](#) 3.3.1.9. ([\[1\]](#) 1) [F10,F12-OS3.7]

[\[3.3.1.9.\]](#) 3.3.1.9. ([\[2\]](#) 2) [F10,F12-OS3.7]

[\[3.3.1.9.\]](#) 3.3.1.9. ([\[3\]](#) 3) [F10,F12-OS3.7]

[\[3.3.1.9.\]](#) 3.3.1.9. ([\[4\]](#) 4) ([\[a\]](#) a) [F10,F12-OS3.7]

[\[3.3.1.9.\]](#) 3.3.1.9. ([\[4\]](#) 4) ([\[b\]](#) b) [F05-OS1.5] [F06-OS1.5,OS1.2]

[\[3.3.1.9.\]](#) 3.3.1.9. ([\[5\]](#) 5) no attributions

NBC20 Div.B 3.3.2.4. (first printing)

[\[3.3.2.4.\]](#) 3.3.2.4. ([\[1\]](#) 1) [F30-OS3.1] [F10-OS3.7]

[\[3.3.2.4.\]](#) 3.3.2.4. ([\[2\]](#) 2) no attributions

[\[3.3.2.4.\]](#) 3.3.2.4. ([\[2\]](#) 2) no attributions

[\[3.3.2.4.\]](#) 3.3.2.4. ([\[3\]](#) 3) [F10-OS3.7]

[\[3.3.2.4.\]](#) 3.3.2.4. ([\[4\]](#) 4) no attributions

NBC20 Div.B 9.5.4.1. (first printing)

[\[9.5.4.1.\]](#) 9.5.4.1. ([\[1\]](#) 1) [F10-OS3.7]

NBC20 Div.B 9.9.5.2. (first printing)

[\[9.9.5.2.\]](#) 9.9.5.2. ([\[1\]](#) 1) [F10-OS3.7]

NFC20 Div.B 2.7.1.5. (first printing)

[\[2.7.1.5.\]](#) 2.7.1.5. ([\[1\]](#) 1) [F10-OS3.7]

[\[2.7.1.5.\]](#) 2.7.1.5. ([\[2\]](#) 2) [F10-OS3.7]

[\[2.7.1.5.\]](#) 2.7.1.5. ([\[3\]](#) 3) [F10-OS3.7]

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Proposed Change 1752

Code Reference(s):	NBC20 Div.B 3.3.2. (first printing)
Subject:	Other
Title:	Requirements for Seats, Aisles and Guards for Assembly Occupancies
Description:	This proposed change updates the NBC requirements for fixed seat configurations, aisles and guards in assembly occupancies rather than pointing to specific NFPA 101 provisions.
Related Proposed Change(s):	PCF 1751

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

In the 1965 edition of the NBC, prescriptive requirements relating to seating configurations in assembly occupancies (arenas, concert halls, stadium, etc.) were introduced in Subsection 3.3.2., but have not been updated to meet evolving needs over time. In most cases, designs are optimized to make a venue profitable. Designers develop optimized seating configurations that comply with more up-to-date American regulations (i.e., NFPA 101), which are based on Canadian research, as an alternative solution to the NBC requirements, and must therefore demonstrate that the seating configurations chosen offer the same level of safety as the NBC's acceptable solutions. In response to this observed trend, a transitory solution was developed for the 2010

edition of the NBC, which involved referencing a series of specific provisions from NFPA 101, "Life Safety Code," as an exception to the NBC requirements. This transitory solution was intended to be reviewed and refined in a future Code cycle.

Since the introduction of the transitory solution, authorities having jurisdiction have raised concerns about enforcement difficulties and the lack of technical detail in the NFPA 101 provisions. Differences have also been noted between the terminology used in the individually referenced NFPA 101 provisions and that used in the NBC provisions. As such, the provisions should be updated to address these concerns.

This proposed change focuses primarily on indoor assembly occupancies; outdoor places of assembly are intended to be further reviewed separately.

Justification

Some specific NFPA 101 provisions referenced in NBC Subsection 3.3.2. contain nested references to other elements of the standard that present underlying assumptions about the overall design of the building, making it difficult to correctly apply the NFPA 101 provisions outlined in the NBC. The proposed changes to the NBC 2020 clearly outline the seating configurations, aisle features and guard requirements required for assembly occupancies.

It is acknowledged that some assembly occupancies may present unusual design constraints that are not all intended to be addressed by the Code's acceptable solutions. As such, an explanatory Note that points Code users to NFPA 101 as a useful resource for such circumstances is introduced in this PCF.

EXISTING PROVISION

NBC20 Div.B 3.3.2. (first printing)

3.3.2. Assembly Occupancy

3.3.2.1. Scope

- 1) This Subsection applies to *assembly occupancies* and to outdoor places of assembly.
- 2) Except as required in Sentence (3), provisions 12.2.3.2, 12.2.3.3, 12.2.5.4, 12.2.5.5, 12.2.5.6, 12.2.11.1, 12.4.1 and 12.4.2 of Chapter 12 of NFPA 101, "Life Safety Code", are permitted to be used in lieu of Articles 3.3.2.4., 3.3.2.5., 3.3.2.9., 3.3.2.11. and 3.3.2.12. (See Note A-3.3.2.1.(2).)
- 3) The minimum clear width of aisle accessways between rows of seats shall be calculated according to provisions 12.2.5.5.2, 12.2.5.5.4.1 and

12.2.5.5.1 of Chapter 12 of NFPA 101, "Life Safety Code", except that in no case shall the width be less than 400 mm.

3.3.2.2. Fire Separations

- 1) Except as permitted by Sentence (2), the seating area of a Group A, Division 1 *occupancy* shall be separated from adjacent *occupancies* in the *floor area* by a *fire separation* having a *fire-resistance rating* not less than 1 h if the *occupant load* in the seating area exceeds 200.
- 2) The *fire-resistance rating* of the *fire separation* required by Sentence (1) is permitted to be less than 1 h but not less than 45 min provided the *fire-resistance rating* required by Subsection 3.2.2. is permitted to be less than 1 h for
 - a) the floor assembly above the *floor area*, or
 - b) the floor assembly below the *floor area*, if there is no floor assembly above.
- 3) If usable space exists under tiers of seats in arena-type *buildings*, a *fire separation* with a *fire-resistance rating* not less than 45 min shall be provided between the space and the seats or the space shall be *sprinklered*.

3.3.2.3. Non-fixed Seating

- 1) Non-fixed seating shall conform to the NFC.

3.3.2.4. Fixed Seats

- 1) Except for the requirements of Article 3.3.2.8. for bench-type seats and except as required or permitted by Sentence (2) and Articles 3.3.2.11. and 3.3.2.12., fixed seats in places of assembly shall be
 - a) attached or secured to the floor, platform or platform riser,
 - b) provided with arms and back, and
 - c) arranged in rows having an unobstructed passage not less than 400 mm wide measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row in the unoccupied position.
- 2) For fixed seats with backs and with folding tablet arms, the value of 400 mm required by Clause (1)(c) shall be measured when the tablet arms are in the use position, but is permitted to be measured in the stored position provided
 - a) there are not more than 7 seats between any seat and the nearest aisle,
 - b) the seats are located in a lecture hall or an auditorium used for instructional purposes, and

- c) the tablet arm, when raised manually to a vertical position, falls by the force of gravity to the stored position.

(See Note A-3.3.2.4.(2).)

- 3) Except as permitted by Sentence (4), aisles shall be located so that there are not more than 7 seats with backs or 20 seats without backs between any seat and the nearest aisle.
- 4) The requirements of Sentence (3) do not apply if
 - a) egress doorways are provided to serve both ends of rows of seats,
 - b) each doorway referred to in Clause (a) serves not more than 3 rows of seats, and
 - c) each row contains not more than 100 seats.

3.3.2.5. Aisles

- 1) Except as required by Articles 3.3.2.11. and 3.3.2.12., aisles leading to *exits* shall be provided in conformance with Sentences (2) to (17) in places of assembly which contain fixed seats.
- 2) The minimum clear width of aisles shall be not less than 1 100 mm, except that the width is permitted to be reduced to not less than
 - a) 750 mm if serving not more than 60 seats, and
 - b) 900 mm if serving seats on one side only.
- 3) Except in the case of bleacher seats, the minimum clear width of aisles referred to in Sentence (2) shall be measured at the point farthest from an *exit*, cross aisle or foyer and shall be increased by 25 mm for each metre of distance toward the *exit*, cross aisle or foyer.
- 4) Aisles shall terminate in a cross aisle, foyer or *exit*, and the width of the cross aisle, foyer or *exit* shall be not less than the required width of the widest aisle plus 50% of the total required width of the remaining aisles that it serves.
- 5) Dead-end aisles shall be not more than 6 m long.
- 6) The length of travel to an *exit* door by any aisle shall be not more than 45 m.
- 7) Side aisles shall be not less than 1 100 mm wide if seating is provided in conformance with Sentence 3.3.2.4.(4).
- 8) An aisle that has a slope not more than 1 in 8 shall not be stepped.
- 9) An aisle that slopes more than 1 in 8 shall be stepped.
- 10) The passageway between rows of seats served by a stepped aisle shall be level at right angles to the line of travel.
- 11) The riser of a step in an aisle shall be
 - a) not less than 110 mm high, and
 - b) not more than 200 mm high.

- 12) Variations are permitted in riser height provided
 - a) the height of adjacent risers does not vary by more than 6 mm, and
 - b) the width of a tread or a platform in the direction of travel is not less than 430 mm.
- 13) Steps in an aisle shall
 - a) have a *run* not less than 230 mm exclusive of nosings,
 - b) have a tread width not less than 250 mm,
 - c) extend to the adjacent rows of seats in a manner that will not create a hazard from tripping, and
 - d) have a finish on the treads conforming to Sentence 3.4.6.1.(1).
- 14) The location of every riser in an aisle shall be made apparent from both directions of travel by strategically placed lighting or contrasting marking stripes.
- 15) A platform in an aisle shall be level, except that a slope not more than 1 in 50 is permitted for a platform that is not less than 430 mm wide in the direction of *exit* travel.
- 16) If a step is used at the entry to a row of seats from a stepped aisle, an unobstructed platform not less than 800 mm square shall be provided adjacent to the aisle.
- 17) The finish of the surface of a platform in or adjacent to a stepped aisle shall conform to Sentence 3.4.6.1.(1).

3.3.2.6. Corridors

- 1) Except as permitted by Sentences (2) to (4), a corridor used by the public in an *assembly occupancy* as an *access to exit* shall be separated from the remainder of the *floor area* by a *fire separation* having a *fire-resistance rating* not less than 1 h.
- 2) The *fire-resistance rating* of the *fire separation* required by Sentence (1) is permitted to be less than 1 h but not less than 45 min provided the *fire-resistance rating* required by Subsection 3.2.2. is permitted to be less than 1 h for
 - a) the floor assembly above the *floor area*, or
 - b) the floor assembly below the *floor area*, if there is no floor assembly above.
- 3) The *fire-resistance rating* required by Sentence (1) is permitted to be waived if the *floor area* in which the corridor is located is *sprinklered* throughout.
- 4) The requirement for a *fire separation* stated in Sentence (1) is permitted to be waived if the distance from any point in the *floor area* to an *exit* measured along the path of travel to the *exit* does not exceed the travel distance permitted by Article 3.4.2.5.

3.3.2.7. Doors

- 1) A door equipped with a latching mechanism in an *access to exit* from a room or *suite of assembly occupancy* containing an *occupant load* more than 100 shall be equipped with a device that complies with Sentence 3.4.6.16.(3).

3.3.2.8. Fixed Bench-Type Seats without Arms

- 1) If fixed bench-type seats without arms are provided, the seat width per person shall be assumed to be 450 mm.
- 2) The centre-to-centre spacing between rows of bench-type seats shall be not less than 760 mm if back rests are provided, and not less than 550 mm if back rests are not provided.
- 3) A clear space of not less than 300 mm shall be provided between the back of each seat and the front of the seat immediately behind it.

3.3.2.9. Guards

- 1) Except as required by Sentences (2) to (4) for bleacher seats, *guards* shall be installed in outdoor and indoor places of assembly with fixed seats so that
 - a) at the fascia of every box, balcony or gallery where the seats extend to the edge, the height of *guards* is not less than
 - i) 760 mm in front of the seats, and
 - ii) 920 mm if located at the end of aisles or at the foot of steps,
 - b) the height of *guards* along every cross aisle other than those adjacent to the fascia of every box, balcony or gallery is not less than 660 mm, except that *guards* need not be provided if the backs of the seats along the front side of the aisle are not less than 600 mm above the floor of the aisle, and
 - c) where the seating is arranged in successive tiers and the height of rise between platforms is more than 450 mm, the height of *guards* is not less than 660 mm along the entire row of seats at the edge of the platform.
- 2) The backs and ends of bleacher seats more than 1 200 mm above the ground or floor that are not adjacent to a wall shall be protected with a *guard*
 - a) not less than 1 070 mm high above an adjacent aisle surface or foot rest, and
 - b) not less than 920 mm high above the centre of an adjacent seat board.
- 3) If the front of a bleacher is more than 600 mm above the ground or floor, it shall be protected with a *guard* not less than 840 mm high above the front foot rest.

- 4) The size of any opening in a *guard* required by Sentences (2) and (3) shall not allow the passage of a sphere whose diameter is more than 300 mm.

3.3.2.10. Handrails in Aisles with Steps

(See Note A-3.3.2.10.)

- 1) Handrails shall be provided in aisles with steps in conformance with Table 3.3.2.10.

Table 3.3.2.10.
Types and Location of Handrails in Aisles with Steps
Forming Part of Sentence 3.3.2.10.(1)

Aisle Width	Aisle Serving Seating on One Side	Aisle Serving Seating on Both Sides
	Handrail Requirements	
Less than 1 100 mm	a continuous handrail located on the side of the aisle opposite the seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14)	a handrail located on one side at the end of each row of seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14)
1 100 mm or more	a centre-line handrail that conforms to Sentence (2) or a continuous handrail located on the side of the aisle opposite the seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14), plus a handrail located at the end of each row of seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14)	a centre line handrail that conforms to Sentence (2)

- 2) Handrails installed along aisle centre lines as required by Table 3.3.2.10. shall
- a) comply with Sentences 3.4.6.5.(5) to (7) and (14),
 - b) have gaps not less than 560 mm and not more than 915 mm wide, measured horizontally, at intervals not exceeding five rows,
 - c) comply with Sentence 3.4.6.5.(11) at terminations and required gaps, and

- d) have an intermediate rail located 305 mm below the principal handrail.

3.3.2.11. Outdoor Places of Assembly

- 1) A Group A, Division 4 *occupancy* and each tier or balcony that has a capacity of more than
 - a) 1 000 persons shall have not less than 3 separate *exits*, or
 - b) 4 000 persons shall have not less than 4 separate *exits*.
- 2) In a Group A, Division 4 *occupancy*, every seat shall be located so that the travel distance is not more than 45 m measured along the path of travel from the seat to
 - a) the ground,
 - b) an *exit*,
 - c) an opening to a passageway leading from the seating area, or
 - d) a portal, a vomitory or any other opening through the seating deck structure.
- 3) *Exits* from outdoor stadia or grandstands shall be located not more than 25 m apart.
- 4) The capacity of a *means of egress* for a Group A, Division 4 *occupancy* shall conform to the requirements of Sentence 3.4.3.2.(3).
- 5) Aisles in a Group A, Division 4 *occupancy* shall
 - a) be located so that there are not more than 20 seats between any seat and the nearest aisle, and
 - b) be not less than 1 200 mm wide, except that an aisle serving less than 60 persons is permitted to be 750 mm wide.

3.3.2.12. Bleachers

- 1) Steps provided in aisles of bleachers of the telescopic type shall
 - a) have risers not more than 250 mm high, and
 - b) have treads with a *run* not less than 280 mm.
- 2) If the vertical distance between seating platforms in bleachers is more than 280 mm, an intermediate step shall be provided the full width of the aisle and proportioned to provide 2 equal risers between platforms.
- 3) If the vertical distance between seating platforms in bleachers is more than 450 mm, 2 intermediate steps shall be provided the full width of the aisle so that there are 3 equal risers between platforms.
- 4) If the passageway between rows of seats is not a closed deck, footboards shall be provided so that
 - a) the total width of the footboards shall be not less than three quarters of the centre-to-centre spacing between rows of seats, and

- b) the spacing between footboard members shall be not more than 25 mm.
- 5) Openings above footboards and below the seats in rows of bleacher seats shall be provided with intermediate construction so that there is no opening that would permit the passage of a sphere of more than 100 mm in diameter.

3.3.2.13. Libraries

- 1) Except as permitted by Sentence (2), a library book storage room that is not normally accessible to the public shall be separated from the remainder of the *building* by a *fire separation* with a *fire-resistance rating* not less than 2 h if it
 - a) is more than 250 m² in area, or
 - b) contains book stacks that
 - i) are more than 10 m high, or
 - ii) penetrate more than one floor assembly.
- 2) The *fire separation* required by Sentence (1) is not required if the book storage room is *sprinklered*.
- 3) Open book shelves are permitted above and below a *mezzanine* floor in a library *building* provided the height of the shelves is not more than 2.1 m but not more than 75% of the floor-to-ceiling height of the space above or below the *mezzanine* floor assembly.

3.3.2.14. Stages for Theatrical Performances

- 1) A *stage* for theatrical performances and ancillary spaces, including workshops, dressing rooms and storage areas, shall be *sprinklered*.
- 2) A *fire separation* with a *fire-resistance rating* not less than 1 h shall be provided between a *stage* for theatrical performances and ancillary spaces, including workshops, dressing rooms and storage areas.
- 3) Except as permitted by Sentence (6), a *stage* for theatrical performances and ancillary spaces, including workshops, dressing rooms and storage areas, shall be separated from the seating area by a *fire separation* having a *fire-resistance rating* not less than 1 h, except for a proscenium opening protected with
 - a) a sprinkler deluge system conforming to the requirements of NFPA 13, "Standard for the Installation of Sprinkler Systems",
 - b) an unframed fire curtain if the opening is not more than 20 m wide, or
 - c) a semi-rigid fire curtain if the opening is more than 20 m wide.
- 4) A fire curtain required by Sentence (3) shall be of a type acceptable to the *authority having jurisdiction* and designed to close

- a) automatically upon the actuation of the sprinkler system,
 - b) automatically upon actuation of the fire alarm system, and
 - c) manually by remote control devices located at the curtain control panel and at each side of the *stage*.
- 5) At least 2 vents for the purpose of venting fire and smoke to the outside of a *building* shall be provided above a *stage* designed for theatrical performances and shall
- a) have an aggregate area not less than one eighth of the area of the *stage* behind the proscenium opening, and
 - b) be arranged to open automatically upon actuation of the sprinkler system.
- 6) The *fire separation* referred to in Sentence (3) is not required between a *stage* and a seating area in a *building* that is *sprinklered* throughout, provided a sprinkler deluge system is installed at the boundary between the *stage* and the seating area.

3.3.2.15. Risers for Stairs

- 1) In a Group A, Division 2 *occupancy* used for the serving of food and beverages, an interior *flight* of stairs with fewer than 3 risers is permitted provided it
 - a) is not less than 900 mm wide,
 - b) is illuminated at all times that occupants are on the premises, and
 - c) has a handrail on each side.

3.3.2.16. Storage Rooms

- 1) Where storage rooms are required by Part 4 of Division B of the NFC for the storage of *flammable liquids* or *combustible liquids* in *assembly occupancies*, such rooms shall not be located above or below the *first storey*.

3.3.2.17. Safety Glazing

- 1) Except as permitted in Sentence (3), glazing in all fixed and operable panels of doors shall conform to Class A of CAN/CGSB-12.1, "Safety Glazing".
- 2) Except as permitted in Sentence (4), glazing in all fixed and operable panels of windows shall conform to Class A of CAN/CGSB-12.1, "Safety Glazing".
- 3) Glazing in individual fixed or operable panels of a door need not comply with Sentence (1), where
 - a) the bottom exposed edge of the glazing is located more than 1 525 mm above the walking surface on each side of the door, or

- b) the glazed opening in the door does not permit the passage of a sphere whose diameter is more than 75 mm.
- 4) Glazing in individual fixed or operable panels of a window need not comply with Sentence (2), where
- a) the bottom exposed edge of the glazing is located more than 1 525 mm above the walking surface on each side of the window, or
 - b) the glazing is located more than 915 mm away from the walking surface on each side of the window measured perpendicular to the plane of the glazing.

Note A-3.3.2.1.(2) Use of NFPA 101.

The intention of Sentence (2) is to allow Code users the option of using NFPA 101, "Life Safety Code", to address the following issues: means of egress; egress routes within assembly occupancies; aisles and access serving seating not at tables; guards and railings; life safety evaluation; and smoke-protected assembly seating. However, opting to use NFPA 101 under this application entails adherence to all the provisions listed in Sentence (2): it is not intended that Code users randomly select and apply a mix of provisions from both the NBC and the NFPA.

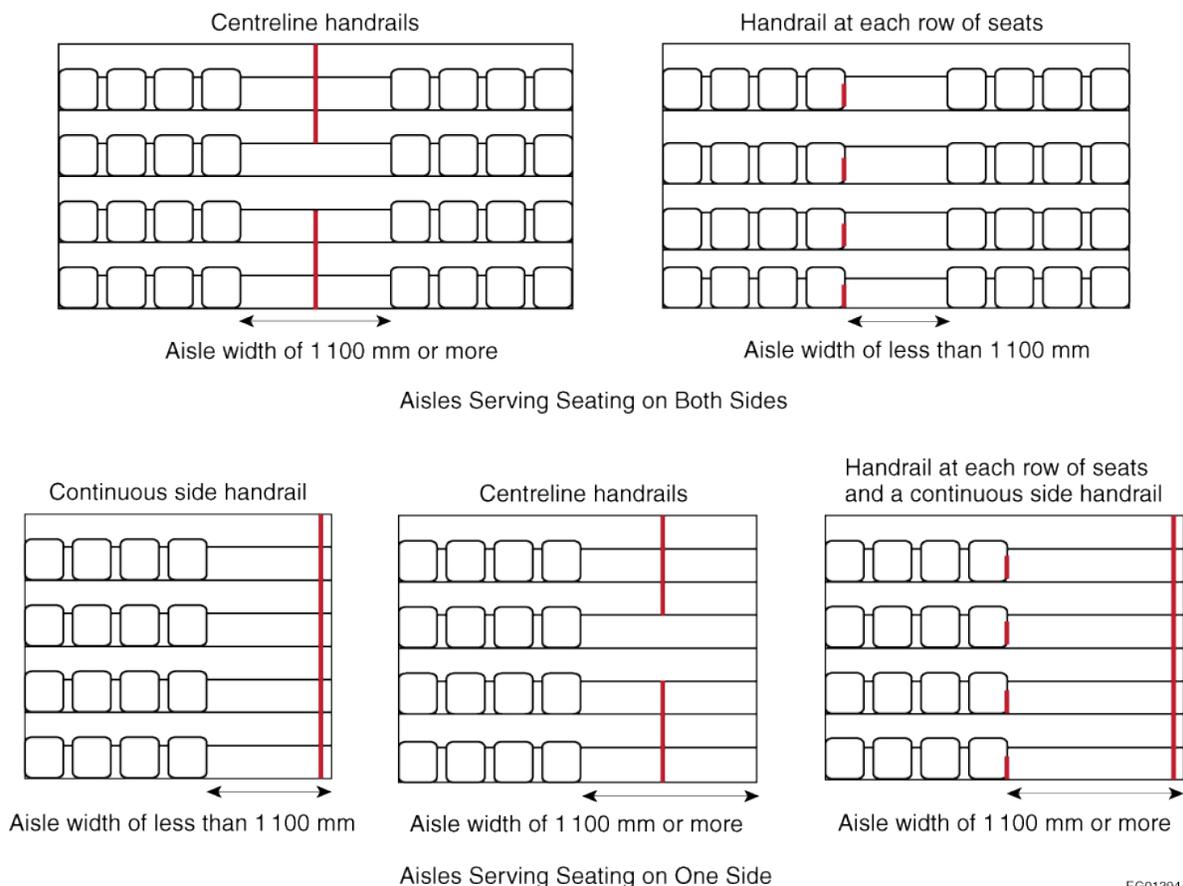
Note A-3.3.2.4.(2) Tablet Arms.

Although it is intended that the motion to raise the tablet arm be essentially a single fluid motion, it is acceptable that the motion be a compound motion of raising the tablet arm and including an articulation to allow the tablet to fall back alongside the arm rest.

Note A-3.3.2.10. Installation Configurations of Handrails in Aisles with Steps.

Figure A-3.3.2.10. illustrates possible installation configurations of handrails serving aisles with steps.

Figure A-3.3.2.10.
Handrail installation configurations



PROPOSED CHANGE

NBC20 Div.B 3.3.2. (first printing)

[3.3.2.] 3.3.2. Assembly Occupancy

[3.3.2.1.] 3.3.2.1. Scope

[1] 1) This Subsection applies to *assembly occupancies* and to outdoor places of assembly.

[2] 2) Indoor smoke-protected *assembly occupancies* and outdoor smoke-protected *assembly occupancies* are permitted to comply with ~~Except as required in Sentence (3), provisions 12.2.3.2, 12.2.3.3, 12.2.5.4, 12.2.5.5, 12.2.5.6, 12.2.11.1,~~ 12.4.1 and 12.4.2 of Chapter 12 of NFPA 101, "Life Safety Code", ~~are permitted to be used~~ in lieu of ~~Articles 3.3.2.4, 3.3.2.5., 3.3.2.9.,~~ 3.3.2.11. and 3.3.2.12., except that the minimum clear width of rows shall be not less than 400 mm. (See Note A-3.3.2.1.(2).)

~~[3] 3) The minimum clear width of aisle accessways between rows of seats shall be calculated according to provisions 12.2.5.5.2, 12.2.5.5.4.1 and~~

~~12.2.5.5.1 of Chapter 12 of NFPA 101, "Life Safety Code", except that in no case shall the width be less than 400 mm.~~

[3.3.2.2.] 3.3.2.2. Fire Separations

[3.3.2.3.] 3.3.2.3. Non-fixed Seating

[3.3.2.4.] 3.3.2.4. Fixed Seats

- [1] 1) Except for the requirements of Article 3.3.2.8. for bench-type seats and except as required or permitted by Sentence (2) and Articles 3.3.2.11. and 3.3.2.12., fixed seats in places of assembly shall be
- [a] a) attached or secured to the floor, platform or platform riser,
 - [b] b) provided with arms and back, ~~and~~
 - [c] c) arranged in rows having a clear width ~~n-unobstructed passage not less than 400 mm wide~~ measured horizontally between vertical planes ~~plumb-lines~~ from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row in the unoccupied position ~~of-~~
 - [i] --) not less than 400 mm for rows with 26 seats or fewer, or
 - [ii] --) 400 mm plus 6.1 mm for each additional seat in excess of 26 seats, but needs not exceed 560 mm, and
 - [d] --) where served by an aisle at each end, arranged in rows of not more than 100 seats.
- [2] 2) For fixed seats with backs and with folding tablet arms, the clear width of the row ~~value of 400 mm~~ required by Clause (1)(c) shall be measured ~~when the tablet arms are in the use position, but is permitted to be measured in the stored position provided~~
- [a] a) when the tablet arms are in the usable position, or ~~there are not more than 7 seats between any seat and the nearest aisle,~~
 - ~~[b] b) the seats are located in a lecture hall or an auditorium used for instructional purposes, and~~
 - [c] c) with the tablet arms in the stored position, provided that when raised manually to a vertical position, the tablet arms fall by the force of gravity to the stored position.

(See Note A-3.3.2.4.(2).)

[3] --) Where rows consist of fixed seats with self-rising seats, the clear width of the rows shall be measured with the seats in the raised position.

[4] --) Where a row of seats is served by an aisle at one end only, the distance between any seat in the row and the aisle shall not exceed 9 000 mm.

~~[5] 3) Except as permitted by Sentence (4), aisles shall be located so that there are not more than 7 seats with backs or 20 seats without backs between any seat and the nearest aisle.~~

- ~~[6] 4) The requirements of Sentence (3) do not apply if~~
- ~~[a] a) egress doorways are provided to serve both ends of rows of seats,~~
 - ~~[b] b) each doorway referred to in Clause (a) serves not more than 3 rows of seats, and~~
 - ~~[c] c) each row contains not more than 100 seats.~~

[3.3.2.5.] 3.3.2.5. Aisles

- [1] 1) Except as required by Articles 3.3.2.11. and 3.3.2.12., aisles leading to *exits* shall be provided in conformance with Sentences (2) to (185) in places of assembly which contain fixed seats.
- [2] 2) The minimum clear width of aisles shall be sufficient to provide egress capacity in accordance with Subsection 3.4.3., but shall be not less than~~not less than 1 100 mm, except that the width is permitted to be reduced to not less than~~
 - [a] --) 1 100 mm,
 - [b] a) 750 mm if serving not more than 60 seats, or and
 - [c] b) 900 mm if serving seats on one side only.
- [3] 3) Where rows or aisles converge into a single path of travel, the required egress capacity of that path shall be not less than the combined required capacity of the converging rows and aisles.~~Except in the case of bleacher seats, the minimum clear width of aisles referred to in Sentence (2) shall be measured at the point farthest from an *exit*, cross aisle or foyer and shall be increased by 25 mm for each metre of distance toward the *exit*, cross aisle or foyer.~~
- [4] 4) Where egress from a row or aisle is possible in two directions, the required width of the row or aisle shall be uniform in both directions.~~Aisles shall terminate in a cross aisle, foyer or *exit*, and the width of the cross aisle, foyer or *exit* shall be not less than the required width of the widest aisle plus 50% of the total required width of the remaining aisles that it serves.~~
- [5] 5) Dead-end aisles shall be not more than 6 m long, unless there are not more than 24 seats between any seat in the row served by the dead-end aisle and another aisle measured along a row of seats. (See Note A-3.3.2.5.(5)-2025.)
- [6] 6) The travel distance from any aisle~~length of travel~~ to an *exit* door or egress door measured in conformance with Sentence 3.4.2.4.(2)~~by any aisle~~ shall be not more than 45 m.
- ~~[7] 7) Side aisles shall be not less than 1 100 mm wide if seating is provided in conformance with Sentence 3.3.2.4.(4).~~
- [8] 8) An aisle that has a slope not more than 1 in 8 shall not be stepped.
- [9] 9) An aisle that slopes more than 1 in 8 shall be stepped.

- ~~[10] 10) The passageway between rows of seats served by a stepped aisle shall be level at right angles to the line of travel.~~
- [11] 11) The riser of a step in an aisle shall be
- [a] a) ~~be between~~not less than 110 mm and 200 mm high, and
 - [b] --) be vertical or sloped under the tread projection at an angle not exceeding 30° from the vertical, and
 - [c] b) have tread projections not exceeding 38 mm.~~not more than 200 mm high.~~
- ~~[12] 12) Variations are permitted in riser height provided~~
- ~~[a] a) the height of adjacent risers does not vary by more than 6 mm, and~~
 - ~~[b] b) the width of a tread or a platform in the direction of travel is not less than 430 mm.~~
- [13] --) The risers of steps in an aisle shall be of uniform height in any one flight, with a maximum tolerance of
- [a] --) 5 mm between adjacent risers or landings, and
 - [b] --) 10 mm between the tallest and shortest risers in a flight.
- [14] 13) Steps in an aisle shall
- [a] a) have a *run* not less than 230 mm exclusive of nosings,
 - [b] b) have a tread ~~depth~~width not less than ~~28~~50 mm, and
 - [c] c) have treads that extend the full width of the aisle.~~extend to the adjacent rows of seats in a manner that will not create a hazard from tripping, and~~
 - ~~[d] d) have a finish on the treads conforming to Sentence 3.4.6.1.(1).~~
- [15] --) Stair treads in an aisle shall be of uniform run in any one flight, with a maximum tolerance of
- [a] --) 5 mm between adjacent treads or landings, and
 - [b] --) 10 mm between the deepest and shallowest treads in a flight.
- [16] 14) A marking stripe that is colour-contrasting or has a distinctive pattern, that is between 25 mm and 50 mm in width, and that is readily apparent from both directions of travel shall be placed at~~The location of every riser in an aisle shall be made apparent from both directions of travel by strategically placed lighting or contrasting marking stripes.~~
- [a] --) the leading edge of treads in an aisle,
 - [b] --) the leading edge of landings in an aisle, and
 - [c] --) the beginning and end of a ramp in an aisle.
- [17] --) A landing conforming to Sentence (18) shall be required where an aisle transitions between different ramps, stair treads or risers with different slopes or dimensions. (See Note A-3.3.2.1.(2).)
- [18] --) The depth of the landing referred to in Sentence (17) shall be equal to or greater than the width of the stair or ramp it serves, but need not exceed 1 100 mm.

- ~~[19] 15) A platform in an aisle shall be level, except that a slope not more than 1 in 50 is permitted for a platform that is not less than 430 mm wide in the direction of exit travel.~~
- ~~[20] 16) If a step is used at the entry to a row of seats from a stepped aisle, an unobstructed platform not less than 800 mm square shall be provided adjacent to the aisle.~~
- [21] 17) The finish of the surface of an platform in or adjacent to a stepped aisle shall be slip-resistant conform to Sentence 3.4.6.1.(1).

[3.3.2.6.] 3.3.2.6. Corridors

[3.3.2.7.] 3.3.2.7. Doors

[3.3.2.8.] 3.3.2.8. Fixed Bench-Type Seats without Arms

[3.3.2.9.] 3.3.2.9. Guards

- [1] 1) Except as required by Sentences (2) ~~to~~ and (34) for bleacher seats, *guards* shall be installed in outdoor and indoor places of assembly with fixed seats so that
- [a] a) at the fascia of every box, balcony or gallery where the seats extend to the edge, the height of *guards* is not less than
- [i] i) 760 mm in front of the seats, and
- [ii] ii) 920 mm vertically and not less than 1 070 mm measured diagonally between the top of the rail and the nosing of the nearest tread if located at the end of aisles or at the foot of steps,
- [b] b) the height of *guards* along every cross aisle other than those adjacent to the fascia of every box, balcony or gallery is not less than 660 mm, except that *guards* need not be provided if the backs of the seats along the front side of the aisle are not less than 600 mm above the floor of the aisle, and
- [c] c) where the seating is arranged in successive tiers and the height of rise between platforms is more than 450 mm, the height of *guards* is not less than 660 mm along the entire row of seats at the edge of the platform.
- [2] 2) The backs and ends of bleacher seats more than 1 200 mm above the ground or floor that are not adjacent to a wall shall be protected with a *guard*
- [a] a) not less than 1 070 mm high above an adjacent aisle surface or foot rest, and
- [b] b) not less than 920 mm high above the centre of an adjacent seat board.

[3] 3) If the front of a bleacher is more than 600 mm above the ground or floor, it shall be protected with a *guard* not less than 840 mm high above the front foot rest.

~~[4] 4) The size of any opening in a *guard* required by Sentences (2) and (3) shall not allow the passage of a sphere whose diameter is more than 300 mm.~~

[3.3.2.10.] 3.3.2.10. Handrails in Aisles with Steps and Ramps

(See Note A-3.3.2.10.)

[1] 1) Handrails shall be provided in aisles with steps and ramps in conformance with Table 3.3.2.10.

Table [3.3.2.10.] 3.3.2.10.
Types and Location of Handrails in Aisles with Steps and Ramps
Forming Part of Sentence [3.3.2.10.] 3.3.2.10.([1] 1)

Aisle Width	Aisle Serving Seating on One Side	Aisle Serving Seating on Both Sides
	Handrail Requirements	
Less than 1 100 mm	a continuous handrail located on the side of the aisle opposite the seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14)	a handrail located on one side at the end of each row of seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14)
1 100 mm or more	a centre-line handrail that conforms to Sentence (2) or a continuous handrail located on the side of the aisle opposite the seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14), plus a handrail located at the end of each row of seats that conforms to Sentences 3.4.6.5.(5) to (8), (11), (13) and (14)	a centre line handrail that conforms to Sentence (2)

[2] 2) Handrails installed along aisle centre lines as required by Table 3.3.2.10. shall
[a] a) comply with Sentences 3.4.6.5.(5) to (7) and (14),

- [b] b) have gaps not less than 560 mm and not more than 915 mm wide, measured horizontally, at intervals not exceeding five rows,
- [c] c) comply with Sentence 3.4.6.5.(11) at terminations and required gaps, and
- [d] d) have an intermediate rail located 305 mm below the principal handrail.

[3.3.2.11.] 3.3.2.11. Outdoor Places of Assembly

[3.3.2.12.] 3.3.2.12. Bleachers

- [1] 1) Steps provided in aisles of bleachers of the telescopic type shall
 - [a] a) have risers not less than 90 mm and not more than 250 mm high, and
 - [b] b) have treads with a *run* not less than 280 mm.
- [2] 2) If the vertical distance between seating platforms in bleachers is more than 280 mm, an intermediate step shall be provided the full width of the aisle and proportioned to provide 2 equal risers between platforms.
- [3] 3) If the vertical distance between seating platforms in bleachers is more than 450 mm, 2 intermediate steps shall be provided the full width of the aisle so that there are 3 equal risers between platforms.
- [4] 4) If the passageway between rows of seats is not a closed deck, footboards shall be provided so that
 - [a] a) the total width of the footboards shall be not less than three quarters of the centre-to-centre spacing between rows of seats and not less than 230 mm, and
 - [b] b) the spacing between footboard members shall be not more than 1325 mm.
- [5] 5) Openings above footboards and below the seats in rows of bleacher seats shall ~~be provided with intermediate construction so that there is no opening that would~~ not permit the passage of a sphere of more than 100 mm in diameter.

[\[3.3.2.13.\]](#) 3.3.2.13. Libraries[\[3.3.2.14.\]](#) 3.3.2.14. Stages for Theatrical Performances[\[3.3.2.15.\]](#) 3.3.2.15. Risers for Stairs[\[3.3.2.16.\]](#) 3.3.2.16. Storage Rooms[\[3.3.2.17.\]](#) 3.3.2.17. Safety Glazing

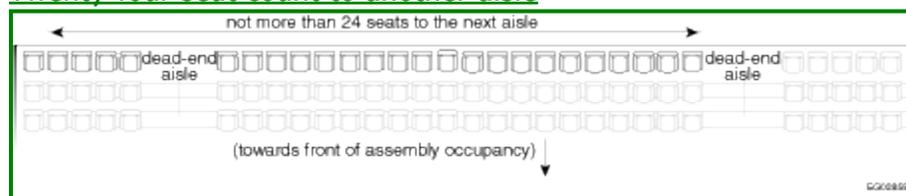
Note A-3.3.2.1.(2) Use of NFPA 101.

The intention of Sentence (2) is to allow Code users the option of using NFPA 101, "Life Safety Code", to address ~~the following issues: means of egress; egress routes within assembly occupancies; aisles and access serving seating not at tables; guards and railings;~~ life safety evaluation; and smoke-protected assembly seating. However, opting to use NFPA 101 under this application entails adherence to all the provisions listed in Sentence (2): it is not intended that Code users randomly select and apply a mix of provisions from both the NBC and the NFPA.

Standards such as NFPA 101 may also be a useful resource when determining alternative solutions for assembly occupancies that present unusual design elements or constraints, such as differing slopes or unique seating arrangements (e.g., parabolic seating).

Note A-3.3.2.5.(5) Dead-end Aisles.

The intent of Sentence 3.3.2.5.(5) is to provide a person with access to an alternate aisle should the dead-end aisle become blocked during an emergency. The 24-seat count should be measured from the farthest seat served by the dead-end aisle to the alternate aisle (the total count to the alternate aisle is permitted to include seats across from a dead-end aisle as shown in Figure A-3.3.2.5.(5)).

Figure [A-3.3.2.5.(5)]Twenty-four seat count to another aisle

Impact analysis

This proposed change clarifies the NBC acceptable solutions and removes references to specific NFPA 101 provisions. This change makes it easier for:

- designers to comply with the NBC acceptable solutions and develop alternative solutions, where applicable;
- owners to better understand the limitations and to address safety objectives that may influence the design and impact potential profit; and
- authorities having jurisdiction to enforce a clearer list of requirements for assembly occupancy designs and to review and evaluate proposed alternative solutions.

These benefits could result in cost and time savings during the construction and design processes.

While many changes to the Code language are being proposed, in most instances the changes describe options that were already available to Code users, as NBC requirements or by NBC reference to NFPA 101 provisions. Some changes clarify existing requirements and intents to improve consistency in application and enforcement of the provisions. Some changes update the requirements for consistency with other requirements in the Codes. For example, construction tolerances for variations in stair riser and tread heights for assembly occupancies are in line with existing requirements in Article 3.4.6.8. for treads and risers.

For some longer rows of fixed seats (more than 26 seats), additional space between rows may be needed in accordance with Article 3.3.2.4.: 400 mm as the base spacing, as currently required by the NBC, plus 6.1 mm per additional seat up to a maximum of 560 mm. This could reduce the total available space for seats in the assembly occupancy, depending on the intended seating plan. Although these requirements may widen required row spacing, such designs would also reduce the number of required aisles, compensating for this increase in row spacing.

The updated space requirements would reduce the likelihood of delays during the evacuation of persons, in the event of an emergency, and of possible injuries related to missteps or falls that could occur with narrower row spacing.

The change in the maximum length of rows served by only one aisle and the change in the maximum length of dead-end aisles may be perceived as relaxations of the safety levels achieved by existing NBC requirements. However, these updated requirements were already allowed by reference to NFPA 101 in the NBC.

Given the added criteria relating to guard height in Article 3.3.2.9., certain seating arrangements may require a wider landing at the end of an aisle or at the foot of steps than those conforming to NBC 2020. However, the additional space will reduce the chance that the guard will be of insufficient height for a person standing on a stair nearby and at risk of falling over the guard. The removal of Sentence 3.3.2.9.(4), which allowed for gaps up to 300 mm instead of the typical 100 mm for guard spacing, may

impact bleacher design and require additional spindles or methods of reducing gap size. However, these dimensions are consistent with other requirements for guards and also found in NFPA 101. This change is intended to improve the safety of children, who may be unsupervised and risk falling through the larger gaps at a height which could lead to injuries.

Sentence 3.3.2.10.(1) includes requirements for ramps to have handrails, in addition to the currently required handrails for aisles with steps. This is consistent with Article 3.4.6.5. of the NBC, which requires handrails for ramps in an access to exit. This requirement may already have been applied to ramp aisles in assembly occupancies. However, in cases where Code users understood the NBC not to have required handrails for ramps in assembly occupancy aisles, this proposed change may increase costs. Estimates for these handrails range depending on material and quantity needed. For example, costs for two aluminum handrails range from around CAD \$180 to \$215 per linear foot (materials plus labour, depending on region).

Enforcement implications

This proposed change will facilitate enforcement by clarifying the requirements. This change can be enforced by building officials using visual inspection and basic measurement tools (i.e., the infrastructure currently available to enforce this Code).

Who is affected

Designers, architects and builders, whose designs and construction projects will be able to meet clearer requirements while following current industry practice.

Building owners, who will have clearer building design requirements related to safety that may impact some of their other objectives, such as optimization of space for profit.

Authorities having jurisdiction, who will have clearer and enforceable requirements to regulate.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 3.3.2. (first printing)

[\[3.3.2.1.\]](#) 3.3.2.1. ([\[1\]](#) 1) no attributions

[\[3.3.2.1.\]](#) 3.3.2.1. ([\[2\]](#) 2) [F30-OS3.1] [F10-OS3.7]

[3.3.2.1.] 3.3.2.1. ([2] 2) no attributions

~~[3.3.2.1.] 3.3.2.1. ([3] 3) [F30-OS3.1] [F10-OS3.7]~~

[3.3.2.2.] 3.3.2.2. ([1] 1) [F03-OS1.2]

[3.3.2.2.] 3.3.2.2. ([2] 2) no attributions

[3.3.2.2.] 3.3.2.2. ([3] 3) [F03-OS1.2]

[3.3.2.2.] 3.3.2.2. ([3] 3) [F03-OS1.2]

[3.3.2.3.] 3.3.2.3. ([1] 1) no attributions

[3.3.2.4.] 3.3.2.4. ([1] 1) [F30-OS3.1] [F10-OS3.7]

[3.3.2.4.] 3.3.2.4. ([2] 2) no attributions

~~[3.3.2.4.] 3.3.2.4. ([2] 2) no attributions~~

~~-- (--)~~ [F10-OS3.7]

~~-- (--)~~ [F10-OS3.7]

~~[3.3.2.4.] 3.3.2.4. ([5] 3) [F10-OS3.7]~~

~~[3.3.2.4.] 3.3.2.4. ([6] 4) no attributions~~

[3.3.2.5.] 3.3.2.5. ([1] 1) no attributions

[3.3.2.5.] 3.3.2.5. ([2] 2) [F10-OS3.7]

[3.3.2.5.] 3.3.2.5. ([3] 3) [F10-OS3.7]

~~[3.3.2.5.] 3.3.2.5. ([3] 3) no attributions~~

[3.3.2.5.] 3.3.2.5. ([4] 4) [F10-OS3.7]

[3.3.2.5.] 3.3.2.5. ([5] 5) [F10-OS3.7]

[3.3.2.5.] 3.3.2.5. ([6] 6) [F10-OS3.7]

~~[3.3.2.5.] 3.3.2.5. ([7] 7) [F10-OS3.7]~~

[3.3.2.5.] 3.3.2.5. ([8] 8) [F10-OS3.7] [F30-OS3.1]

[3.3.2.5.] 3.3.2.5. ([9] 9) [F10-OS3.7] [F30-OS3.1]

~~[3.3.2.5.] 3.3.2.5. ([10] 10) [F10-OS3.7] [F30-OS3.1]~~

[3.3.2.5.] 3.3.2.5. ([11] 11) [F10-OS3.7] [F30-OS3.1]

~~[3.3.2.5.] 3.3.2.5. ([12] 12) [F10-OS3.7] [F30-OS3.1]~~

~~-- (--)~~ [F30-OS3.1] [F10-OS3.7]

[3.3.2.5.] 3.3.2.5. ([14] 13) [F10-OS3.7] [F30-OS3.1]

~~-- (--)~~ ~~[F30-OS3.1]~~ ~~[F10-OS3.7]~~

[3.3.2.5.] 3.3.2.5. ([16] 14) [F10-OS3.7] [F30-OS3.1]

~~-- (--)~~ ~~[F10-OS3.7]~~ ~~[F12-OS3.7]~~ ~~[F30-OS3.1]~~

~~-- (--)~~ ~~[F10-OS3.7]~~ ~~[F12-OS3.7]~~ ~~[F30-OS3.1]~~

~~[3.3.2.5.]~~ ~~3.3.2.5.~~ (~~[19]~~ 15) ~~[F10-OS3.7]~~ ~~[F30-OS3.1]~~

~~[3.3.2.5.]~~ ~~3.3.2.5.~~ (~~[20]~~ 16) ~~[F10-OS3.7]~~ ~~[F30-OS3.1]~~

~~[3.3.2.5.]~~ ~~3.3.2.5.~~ (~~[21]~~ 17) ~~no attributions~~

~~-- (--)~~ ~~[F10-OS3.7]~~ ~~[F30-OS3.1]~~

[3.3.2.6.] 3.3.2.6. ([1] 1) [F03,F05-OS1.5] [F06-OS1.5,OS1.2]

[3.3.2.6.] 3.3.2.6. ([1] 1) [F03,F06-OP1.2]

[3.3.2.6.] 3.3.2.6. ([2] 2) no attributions

[3.3.2.6.] 3.3.2.6. ([3] 3) [F03,F05-OS1.5] [F06-OS1.5,OS1.2]

[3.3.2.6.] 3.3.2.6. ([3] 3) [F03,F06-OP1.2]

[3.3.2.6.] 3.3.2.6. ([4] 4) [F10-OS3.7]

[3.3.2.7.] 3.3.2.7. ([1] 1) [F10-OS3.7]

[3.3.2.8.] 3.3.2.8. ([1] 1) [F10-OS3.7]

[3.3.2.8.] 3.3.2.8. ([1] 1) [F10-OS3.7]

[3.3.2.8.] 3.3.2.8. ([2] 2) no attributions

[3.3.2.8.] 3.3.2.8. ([3] 3) no attributions

[3.3.2.9.] 3.3.2.9. ([1] 1) no attributions

[3.3.2.9.] 3.3.2.9. ([2] 2) no attributions

[3.3.2.9.] 3.3.2.9. ([3] 3) no attributions

~~[3.3.2.9.]~~ ~~3.3.2.9.~~ (~~[4]~~ 4) ~~no attributions~~

[3.3.2.10.] 3.3.2.10. ([1] 1) [F30-OS3.1] [F10-OS3.7]

[3.3.2.10.] 3.3.2.10. ([1] 1) no attributions

[3.3.2.10.] 3.3.2.10. ([2] 2) [F30-OS3.1] [F10-OS3.7]

[3.3.2.10.] 3.3.2.10. ([2] 2) no attributions

[3.3.2.11.] 3.3.2.11. ([1] 1) [F10-OS3.7]

[3.3.2.11.] 3.3.2.11. ([2] 2) [F10-OS3.7]

- [\[3.3.2.11.\]](#) 3.3.2.11. ([\[3\]](#) 3) [F10-OS3.7]
- [\[3.3.2.11.\]](#) 3.3.2.11. ([\[4\]](#) 4) no attributions
- [\[3.3.2.11.\]](#) 3.3.2.11. ([\[5\]](#) 5) [F10-OS3.7]
- [\[3.3.2.12.\]](#) 3.3.2.12. ([\[1\]](#) 1) [F10-OS3.7] [F30-OS3.1]
- [\[3.3.2.12.\]](#) 3.3.2.12. ([\[2\]](#) 2) [F10-OS3.7] [F30-OS3.1]
- [\[3.3.2.12.\]](#) 3.3.2.12. ([\[3\]](#) 3) no attributions
- [\[3.3.2.12.\]](#) 3.3.2.12. ([\[4\]](#) 4) [F10-OS3.7] [F30-OS3.1]
- [\[3.3.2.12.\]](#) 3.3.2.12. ([\[5\]](#) 5) [F30-OS3.1]
- [\[3.3.2.13.\]](#) 3.3.2.13. ([\[1\]](#) 1) [F03-OS1.2]
- [\[3.3.2.13.\]](#) 3.3.2.13. ([\[1\]](#) 1) [F03-OP1.2]
- [\[3.3.2.13.\]](#) 3.3.2.13. ([\[2\]](#) 2) [F02-OS1.2]
- [\[3.3.2.13.\]](#) 3.3.2.13. ([\[2\]](#) 2) [F02-OP1.2]
- [\[3.3.2.13.\]](#) 3.3.2.13. ([\[3\]](#) 3) no attributions
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[1\]](#) 1) [F02-OS1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[1\]](#) 1) [F02-OP1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[2\]](#) 2) [F03-OS1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[2\]](#) 2) [F03-OP1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[3\]](#) 3) [F03-OS1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[3\]](#) 3) [F03-OP1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[4\]](#) 4) [F03-OS1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[4\]](#) 4) [F03-OP1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[5\]](#) 5) [F02-OS1.2] [F06-OS1.2,OS1.5]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[5\]](#) 5) [F02,F06-OP1.2]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[6\]](#) 6) [F03-OS1.2,OS1.5]
- [\[3.3.2.14.\]](#) 3.3.2.14. ([\[6\]](#) 6) [F03-OP1.2]
- [\[3.3.2.15.\]](#) 3.3.2.15. ([\[1\]](#) 1) [F30-OS3.1]
- [\[3.3.2.16.\]](#) 3.3.2.16. ([\[1\]](#) 1) [F12-OS1.2]
- [\[3.3.2.16.\]](#) 3.3.2.16. ([\[1\]](#) 1) [F12-OP1.2]
- [\[3.3.2.17.\]](#) 3.3.2.17. ([\[1\]](#) 1) [F20,F30-OS3.1]

[\[3.3.2.17.\]](#) 3.3.2.17. ([\[2\]](#) 2) [F20,F30-OS3.1]

[\[3.3.2.17.\]](#) 3.3.2.17. ([\[3\]](#) 3) no attributions

[\[3.3.2.17.\]](#) 3.3.2.17. ([\[4\]](#) 4) no attributions

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Proposed Change 361

Code Reference(s):	NBC20 Div.B 3.4.6.6. (first printing)
Subject:	Stairs, Ramps, Handrails and Guards — Fall Protection
Title:	Size Limit for Open Stringers
Description:	This proposed change limits the size of the triangular openings formed by the stair risers and treads and the bottom element of a required guard.
Related Proposed Change(s):	PCF 356

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

A size limit for open stringers (the triangular openings formed by the bottom railing of a guard and the risers and treads on the side of a stair) is not clearly addressed in the NBC. The lack of such a provision may lead to the following interpretations:

- open stringers are not regulated by the NBC, or
- open stringers are subject to the same size limits as openings in guards (i.e., not permitting the passage of a spherical object whose diameter is more than 100 mm).

Justification

This proposed change limits the size of the triangular openings formed by the risers and treads of stairs and the bottom element of a required guard.

After reviewing many step dimensions of stairs, the technical committee agreed that:

- limiting the stringer opening to the size of a sphere having a diameter of 150 mm would provide the same performance as that of an elliptical shape measuring 208 mm by 130 mm, and
- using a spherical shape would reduce any enforcement difficulty caused by the use of an elliptical shape.

Furthermore, a 150 mm sphere is the size limit currently used in other codes and standards in other jurisdictions, e.g., Australia.

The technical committee concluded that:

- the size limit for openings in guards (i.e., maximum 100 mm sphere) is too stringent due to the location and shape of open stringers,
- open stringers should limit the passage of a 9- to 11-month-old child, and
- an elliptical shape of 208 mm by 130 mm can be used to represent the torso size of a 9- to 11-month-old child.

PROPOSED CHANGE

NBC20 Div.B 3.4.6.6. (first printing)

[\[3.4.6.6.\]](#) 3.4.6.6. Guards

- [\[1\]](#) 1) Every *exit* shall have a wall or a well-secured *guard* on each side, where
- [a] a) there is a difference in elevation of more than 600 mm between the walking surface and the adjacent surface, or
- [b] b) the adjacent surface within 1.2 m of the walking surface has a slope of more than 1 in 2.
- (See Note A-9.8.8.1.)
- [\[2\]](#) 2) Except as required by Sentence (4), the height of *guards* for *exit* stairs and *exit ramps* as well as their landings shall be not less than 1 070 mm.
- [\[3\]](#) 3) The height of *guards* shall be measured vertically to the top of the *guard* from
- [a] a) a line drawn through the outside edges of the stair nosings, or
- [b] b) the surface of the *ramp* or landing.
- [\[4\]](#) 4) The height of *guards* for exterior stairs and landings more than 10 m above adjacent ground level shall be not less than 1 500 mm measured

vertically to the top of the *guard* from the surface of the landing or from a line drawn through the outside edges of the stair nosings.

- [5] 5) Except as provided in Sentence 3.3.1.18.(3) and Articles 3.3.4.7. and 3.3.5.10., *guards* in *exits* shall not have any openings that permit the passage of a spherical object whose diameter is more than 100 mm.

~~[6] --) Except for *guards* serving *industrial occupancies*, the triangular openings formed by the risers and treads of a stair and the bottom element of a required *guard* shall be of a size that prevents the passage of a sphere having a diameter of 150 mm.~~

- [7] 6) In a stairway, a window for which the distance measured vertically between the bottom of the window and a line drawn through the outside edges of the stair nosings is less than 900 mm, or a window that extends to less than 1 070 mm above the landing, shall

[a] a) be protected by a *guard* that is

[i] i) located approximately 900 mm above a line drawn through the outside edges of the stair nosings, or

[ii] ii) not less than 1 070 mm high measured to the top of the *guard* from the surface of the landing, or

[b] b) be fixed in position and designed to resist the lateral design loads specified for *guards* and walls in Articles 4.1.5.14. and 4.1.5.16.

- [8] 7) Except for *guards* conforming to Article 3.3.5.10., *guards* that protect a level located more than one *storey* or 4.2 m above the adjacent level shall be designed so that no member, attachment or opening located between 140 mm and 900 mm above the level being protected by the *guard* facilitates climbing. (See Note A-9.8.8.6.(1).)

Impact analysis

This proposed change, which aims to clarify the intent of the NBC, will have no impact on current installations where the bottom railing of a guard is installed close to the nosing of the tread.

This proposed change has no cost implications and can be achieved by the proper installation of guards (i.e., close to the tread nosing).

Enforcement implications

This change can be enforced by the infrastructure currently available to enforce this Code and may facilitate enforcement.

Who is affected

Designers, manufacturers and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 3.4.6.6. (first printing)

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[1\]](#)) 1) [F30-OS3.1] [F10-OS3.7]

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[2\]](#)) 2) [F30-OS3.1] [F10-OS3.7]

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[3\]](#)) 3) no attributions

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[4\]](#)) 4) [F30-OS3.1] [F10-OS3.7]

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[5\]](#)) 5) [F30-OS3.1]

[\[3.4.6.6.\]](#) -- ([\[6\]](#) --) [\[F30-OS3.1\]](#)

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[7\]](#)) 6) [F30-OS3.1]

[\[3.4.6.6.\]](#) 3.4.6.6. ([\[8\]](#)) 7) [F30-OS3.1]

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Proposed Change 1750

Code Reference(s): NBC20 Div.B 3.7.2.2. (first printing)
Subject: Other — Use and Egress
Title: Clarification on Gendered Washrooms
Description: This proposed change to explanatory Note A-3.7.2.2.(1) clarifies the NBC requirement for a minimum number of water closets in buildings and how the NBC addresses gender-neutral washrooms.
Related Code Change Request(s): CCR 1431

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input checked="" type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The NBC requires that a certain minimum number of water closets be provided in buildings based on occupancy type and the expected proportion of males and females in the occupant loads. However, the wording of the requirements could be misinterpreted to mean that separate washrooms for males and females must be provided. Several Code enquiries have sought clarification on how “gender-neutral” washrooms are considered in the NBC and if they are allowed since enforcement issues have also been raised.

While washrooms have historically been separated according to gender, it is becoming more common to have non-gender-specific washroom spaces.

This proposed change to explanatory Note A-3.7.2.2.(1) clarifies that the NBC only requires that a minimum number of water closets be made available to the building's occupants.

Additionally, the NBC 2020 introduced new requirements on barrier-free access to floor areas and on universal washrooms wherever washrooms are provided on barrier-free storeys. Since universal washrooms are not gender-specific and can be used by anyone, the wording of the existing explanatory Note to Sentence 3.7.2.2.(1) is now inaccurate.

Justification

The NBC requires a minimum number of water closets in buildings, but does not require that washrooms be separated according to gender. This proposed change to explanatory Note A-3.7.2.2.(1) clarifies this point, with a view to helping designers to create acceptable washroom spaces and authorities having jurisdiction to approve their designs.

With the introduction of new accessibility requirements in the NBC 2020, Note A-3.7.2.2.(1) of the NBC 2020 is no longer accurate. The explanatory Note is being reworded accordingly to reflect the Code provisions.

EXISTING PROVISION

NBC20 Div.B 3.7.2.2. (first printing)

3.7.2.2. Water Closets

- 1) Except as permitted by Sentence (2), water closets shall be provided for each sex assuming that the *occupant load* is equally divided between males and females, unless the proportion of each sex expected in the *building* can be determined with reasonable accuracy. (See Note A-3.7.2.2.(1).)
- 2) Both sexes are permitted to be served by a single water closet if the *occupant load* in an *occupancy* referred to in Sentence (4), (8), (10), (11), (12) or (14) is not more than 10.
- 3) Urinals are permitted to be substituted for two thirds of the number of water closets required by this Article for males, except that if only 2 water closets are required for males, one urinal is permitted to be substituted for one of the water closets.
- 4) Except as permitted by Sentences (2), (5) and (6), the number of water closets required for *assembly occupancies* shall conform to Table 3.7.2.2.-A.

Table 3.7.2.2.-A
Water Closets for an Assembly Occupancy
 Forming Part of Sentence 3.7.2.2.(4)

Number of Persons of Each Sex	Minimum Number of Water Closets	
	Male	Female
1 - 25	1	1
26 - 50	1	2
51 - 75	2	3
76 - 100	2	4
101 - 125	3	5
126 - 150	3	6
151 - 175	4	7
176 - 200	4	8
201 - 250	5	9
251 - 300	5	10
301 - 350	6	11
351 - 400	6	12
Over 400	7, plus 1 for each additional increment of 200 males in excess of 400	13, plus 1 for each additional increment of 100 females in excess of 400

- 5) The number of water closets required for primary schools and daycare centres shall be at least one for each 30 males and one for each 25 females.
- 6) The number of water closets required for places of worship and undertaking premises shall be at least one for each 150 persons of each sex.
- 7) The number of water closets required for a *treatment* or *detention occupancy* shall be determined on the basis of the special needs of the *occupancy*.
- 8) Except as permitted by Sentences (2) and (5), the number of water closets required for a *care* or *residential occupancy* shall be at least one for each 10 persons of each sex.

- 9) At least one water closet shall be provided for each *dwelling unit*.
- 10) Except as permitted by Sentence (2), the number of water closets required for a *business and personal services occupancy* shall conform to Table 3.7.2.2.-B.

Table 3.7.2.2.-B
Water Closets for a Business and Personal Services Occupancy
Forming Part of Sentences 3.7.2.2.(10) and (14)

Number of Persons of Each Sex	Minimum Number of Water Closets for Each Sex
1 - 25	1
26 - 50	2
Over 50	3, plus 1 for each additional increment of 50 persons of each sex in excess of 50

- 11) Except as permitted by Sentences (2) and (14), the number of water closets required for a *mercantile occupancy* shall be at least one for each 300 males and one for each 150 females.
- 12) Except as permitted by Sentence (2), the number of water closets required for an *industrial occupancy* shall conform to Table 3.7.2.2.-C.

Table 3.7.2.2.-C
Water Closets for an Industrial Occupancy
Forming Part of Sentence 3.7.2.2.(12)

Number of Persons of Each Sex	Minimum Number of Water Closets for Each Sex
1 - 10	1
11 - 25	2
26 - 50	3
51 - 75	4
76 - 100	5
Over 100	6, plus 1 for each additional increment of 30 persons of each sex in excess of 100

- 13) In a *building* whose *floor area* is more than 600 m² and that includes one or more individual tenant spaces for a *business and personal services occupancy* or *mercantile occupancy*, water closets shall be located so that they are accessible to the public when the *building* is occupied.
- 14) The number of water closets required in a *suite of mercantile occupancy* whose area is not more than 500 m² is permitted to be determined in accordance with Table 3.7.2.2.-B based solely on the total number of staff.

Note A-3.7.2.2.(1) Water Closets.

Sentence 3.7.2.2.(1) assumes that there will be a sufficient number of persons in the building to justify the provision of separate water closet facilities for both males and females. In some circumstances overall low occupant loads would not require more than one water closet for males and one water closet for females and yet the building has more than one storey. It is deemed that rooms each containing a single water closet available for both males and females would satisfy the intent of the Code. The total number of water closets must be adequate for the total number of occupants. Requirements for barrier free accessibility also need to be considered. If the entrance storey is accessible and the upper storeys are not required to be accessible, a room in the accessible storey must meet the requirements of Section 3.8. and can serve both males and females. If provided, a nonaccessible room, designed to serve both males and females, in each nonaccessible upper storey would be acceptable. Sentence 3.7.2.2.(2) permits a single water closet to serve both males and females if the total occupant load is low.

PROPOSED CHANGE

NBC20 Div.B 3.7.2.2. (first printing)

[\[3.7.2.2.\]](#) 3.7.2.2. Water Closets

Note A-3.7.2.2.(1) Water Closets.

~~Sentence 3.7.2.2.(1) assumes that there will be a sufficient number of persons in the building to justify the provision of separate water closet facilities for both males and females. In some circumstances overall low occupant loads would not require more than one water closet for males and one water closet for females and yet the building has more than one storey. It is deemed that rooms each containing a single water closet available for both males and females would satisfy the intent of the Code. The total number of water closets must be adequate for the total number of occupants. Requirements for barrier free accessibility also need to be considered. If the entrance storey is accessible and the upper storeys are not required to be accessible, a room in the accessible storey must meet the requirements of Section 3.8. and can serve both~~

~~males and females. If provided, a nonaccessible room, designed to serve both males and females, in each nonaccessible upper storey would be acceptable. Sentence 3.7.2.2.(2) permits a single water closet to serve both males and females if the total occupant load is low.~~ Although the NBC contains no implied or explicit requirements for the provision of separate gender-identified washrooms, traditional industry practice has been to provide separate washrooms. The Code only requires that certain total numbers of water closets and urinals be provided based on the expected number and demographics of building occupants. Features such as full-height partitions for the privacy of washroom users and lockable stall doors for their safety should be considered in the design of the space. Where washrooms are required to be accessible, Section 3.8. applies.

Impact analysis

This proposed change clarifies the Code's intent through an explanatory note and is only advisory in nature.

The proposed change highlights the flexibility available to designers in designing washroom spaces. In some instances, this clarification could also facilitate AHJ approval of less traditional washroom designs, resulting in possible time, space and cost savings.

Enforcement implications

This proposed change clarifies that the existing requirements do not require washrooms to be separated according to gender. Sentence 3.7.2.2.(1) can continue to be enforced by the infrastructure currently available to enforce the Code.

Who is affected

Designers and authorities having jurisdiction will have a clearer understanding that the Codes do not require that washrooms be gender-specific.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 3.7.2.2. (first printing)

- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[1\]](#)) 1) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[1\]](#)) 1) no attributions
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[2\]](#)) 2) no attributions
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[3\]](#)) 3) no attributions
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[4\]](#)) 4) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[5\]](#)) 5) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[6\]](#)) 6) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[7\]](#)) 7) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[8\]](#)) 8) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[9\]](#)) 9) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[10\]](#)) 10) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[11\]](#)) 11) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[12\]](#)) 12) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[13\]](#)) 13) [F72-OH2.1]
- [\[3.7.2.2.\]](#) 3.7.2.2. ([\[14\]](#)) 14) [F72-OH2.1]

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Proposed Change 1571

Code Reference(s):	NBC20 Div.B 3.8.2.10. (first printing) NBC20 Div.B 3.3.1.19. (first printing) NBC20 Div.B 3.8.3.9. (first printing)
Subject:	Accessibility — Inclusive signage
Title:	Tactile Direction Indicators
Description:	This proposed change introduces provisions, including a design requirement for tactile direction indicators.
Related Proposed Change(s):	PCF 429, PCF 1570, PCF 1572, PCF 1764

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input checked="" type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

General information

See the summary for subject Accessibility.

Problem

Tactile direction indicators are detectable underfoot or by a long white cane and are used by people with vision loss to facilitate wayfinding in locations such as large open spaces, transit platforms and complex circulation routes. For consistent messaging, the installation of these indicators must be standardized where they are provided. If the tactile direction indicators are incorrectly or inconsistently installed, users of the

building or space could be unacceptably impeded from circulating within the building and from using its facilities, which can become an accessibility objective-related issue. This proposed change would promote the standardization of tactile direction indicators, also a safety feature that guides people away from potentially hazardous areas.

Justification

This proposed change introduces a reference to CSA B651, "Accessible Design for the Built Environment," which contains standardized design requirements on the installation of tactile direction indicators. Although the proposed change would not make these types of directional indicators mandatory, it would promote their standardization where they are installed, so that people with vision loss will be provided with consistent and appropriate directional messaging.

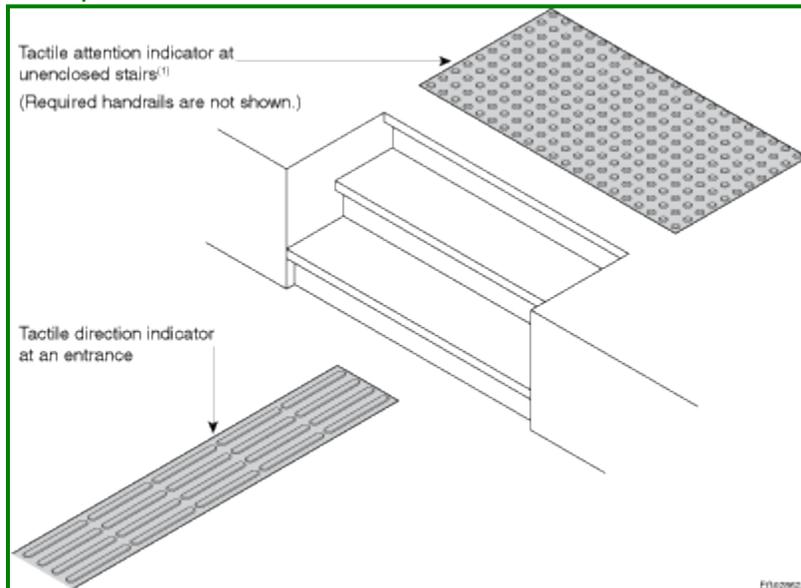
PROPOSED CHANGE

[3.8.2.10.] 3.8.2.10. Signs and Indicators

- [1] 1) Signs providing visual information in accordance with Subsection 3.8.3. shall be installed to indicate the location of
 - [a] a) *barrier-free* entrances,
 - [b] b) *barrier-free* washrooms,
 - [c] c) *barrier-free* showers,
 - [d] d) *barrier-free* elevators,
 - [e] e) *barrier-free* parking spaces, and
 - [f] f) assistive listening systems or adaptive technologies.
- [2] 2) Where a washroom is not designed to accommodate persons with physical disabilities in a *storey* to which a *barrier-free* path of travel is required, signs providing visual and tactile information in accordance with Subsection 3.8.3. shall be installed to indicate the location of *barrier-free* facilities.
- [3] 3) Except for doors that serve *service spaces* or are located within a *suite*, signs installed at or near doors shall provide the same information in both visual and tactile forms in accordance with Subsection 3.8.3.
- [4] 4) Directional signs shall provide visual information in accordance with Subsection 3.8.3. (See Note A-3.8.2.10.(4).)
- [5] --) Where provided, tactile direction indicators shall be designed and installed in accordance with Subsection 3.8.3. (See Note A-3.8.2.10.(5).)

Note A-3.8.2.10.(5) Tactile Direction Indicators.

Tactile direction indicators are installed in buildings to facilitate wayfinding for persons with vision loss by indicating a primary route of travel between the entrance and major destinations. See Figure A-3.8.2.10.(5) for examples of a tactile direction indicator and a tactile attention indicator.

Figure [A-3.8.2.10.(5)]Example of a tactile direction indicator and a tactile attention indicator at stairs.Note to Figure :

(1) See Article 3.3.1.19.

[3.3.1.19.] 3.3.1.19. Tactile ~~Attention Walking Surface~~ Indicators

- [1] 1) Except as provided in Sentence (2), tactile attention indicators complying with Clauses 4.3.5.3.1, 4.3.5.3.3 and 4.3.5.3.4 of CSA B651, "Accessible design for the built environment", shall be installed
- [a] a) at the top of *flights* of stairs that are unenclosed, and
 - [b] b) at drop-off edges with a change in elevation greater than 300 mm that are unprotected by a *guard*.
- (See Note A-3.3.1.19.(1).)
- [2] 2) Sentence (1) does not apply to *service spaces*, bleachers addressed in Subsection 3.3.2., *stages*, loading docks, *industrial occupancies*, within *dwelling units*, and to stairs and drop-off edges serving not more than two *dwelling units*.

[3.8.3.9.] 3.8.3.9. Accessible Signs

- [1] 1) Visual information signs required by Subsections 3.4.5. and 3.4.6. and Article 3.8.2.10. shall comply with Clauses 4.5.2, 4.5.3 and 4.5.4 of CSA B651, "Accessible design for the built environment". (See Note A-3.8.3.9.(1) and (2).)
- [2] 2) Tactile information signs required by Subsections 3.4.5. and 3.4.6. and Article 3.8.2.10. shall
- [a] a) have Braille and tactile characters in accordance with Clauses 4.5.6.2 and 4.5.6.3 of CSA B651, "Accessible design for the built environment",
- [b] b) be installed on the wall closest to the latch side of the door or on the nearest wall on the right side of the door, where there is no wall at the latch side, and
- [c] c) be centred 1 500 mm above the finished floor with the edge of the sign located not more than 300 mm from the door.
- (See Note A-3.8.3.9.(1) and (2).)
- [3] 3) Signs required by Article 3.8.2.10. shall incorporate the International Symbol of Access or the International Symbol of Access for Hearing Loss and appropriate graphical or textual information that clearly indicates the type of facilities available. (See Note A-3.8.3.9.(3).)
- [4] --) Tactile direction indicators referred to in Sentence 3.8.2.10.(5) shall comply with Clauses 4.3.5.4.1, 4.3.5.4.3 and 4.3.5.4.4 of CSA B651, "Accessible Design for the Built Environment."

General information

See the summary for subject Accessibility.

Impact analysis

This proposed change has no cost implications as the installation of tactile direction indicators is not mandatory. Standardized requirements would facilitate the work of designers and builders, and would provide building users with clear directional information.

Costs for tactile direction indicators vary depending on the materials and quantity of tiles required. Tactile direction indicator tiles cost in the range of \$10/ft.² for rubber tiles or more for porcelain, fiberglass or other types of tiles, not including installation.

Enforcement implications

This proposed change can be enforced with the existing enforcement infrastructure.

Who is affected

Building users, who will be provided with consistent directional information where tactile direction indicators are installed.

Designers and builders, who will have consistent guidance on what to install for tactile direction indicators.

Building officials, who will have consistent requirements to use for the evaluation of tactile direction indicators where these are provided.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[3.8.2.10.\]](#) 3.8.2.10. ([1] 1) [F74-OA2]

[\[3.8.2.10.\]](#) 3.8.2.10. ([1] 1) no attributions

[\[3.8.2.10.\]](#) 3.8.2.10. ([2] 2) [F74-OA2]

[\[3.8.2.10.\]](#) 3.8.2.10. ([3] 3) [F74-OA2]

[\[3.8.2.10.\]](#) 3.8.2.10. ([3] 3) no attributions

[\[3.8.2.10.\]](#) 3.8.2.10. ([4] 4) [F74-OA2]

[\[3.8.2.10.\]](#) 3.8.2.10. ([4] 4) no attributions

-- (--) no attributions

[\[3.3.1.19.\]](#) 3.3.1.19. ([1] 1) [F30-OS3.1]

[\[3.3.1.19.\]](#) 3.3.1.19. ([2] 2) no attributions

[\[3.8.3.9.\]](#) 3.8.3.9. ([1] 1) no attributions

[\[3.8.3.9.\]](#) 3.8.3.9. ([1] 1) [F74-OA2]

[\[3.8.3.9.\]](#) 3.8.3.9. ([1] 1) [F73-OA1]

[\[3.8.3.9.\]](#) 3.8.3.9. ([2] 2) [F74-OA2]

[\[3.8.3.9.\]](#) 3.8.3.9. ([2] 2) [F73-OA1]

[3.8.3.9.] 3.8.3.9. ([3] 3) [F74-OA2]

[3.8.3.9.] 3.8.3.9. ([3] 3) [F73-OA1]

-- (--) [F74-OA2]

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Proposed Change 1426

Code Reference(s):	NBC20 Div.B 5.5.1.2. (first printing) NBC20 Div.B 5.9.1.1. (first printing)
Subject:	Vapour Barrier
Title:	Replacement of an Outdated CGSB Standard
Description:	This proposed change replaces the reference to CAN/CGSB-1.501-M89, "Method for Permeance of Coated Wallboard," with a reference to ASTM D1653-13, "Standard Test Methods for Water Vapor Transmission of Organic Coating Films," for testing the vapour permeance of coatings.
Related Code Change Request(s):	CCR 1238, CCR 1305
Related Proposed Change(s):	PCF 1427

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The NBC references CAN/CGSB-1.501-M89, "Method for Permeance of Coated Wallboard," for testing vapour barrier properties of coatings applied on gypsum board. Although the CAN/CGSB-1.501-M89 standard is still applicable, it was never updated since its initial publication in 1989 and was withdrawn by the Canadian General Standards Board (CGSB) in October 2011. As a result, manufacturers do not test vapour barrier properties of coatings in accordance with the CAN/CGSB-1.501-M89 standard; they test them in accordance with ASTM D1653-13, "Standard Test Methods for Water Vapor Transmission of Organic Coating Films," instead. The ASTM D1653 standard has a broader scope: it addresses the testing of vapour barrier properties of coatings applied on any material, which allows the introduction of new technologies into the market.

The fact that manufacturers currently test the vapour barrier properties of coatings in accordance with the ASTM D1653 standard instead of CAN/CGSB-1.501-M89 creates enforcement issues for the authorities having jurisdiction (AHJs).

In addition, the reference to ASTM E96/E96M-16, "Standard Test Methods for Water Vapor Transmission of Materials," in Sentence 5.5.1.2.(3) of Division B is inconsistent with the reference to other applicable test standards in Part 5 (i.e. separate Sentence vs. Table 5.9.1.1.).

Finally, referencing the ASTM D1653 and ASTM E96/E96M standards in Table 5.9.1.1. does not explain to Code users how to select the vapour barriers.

Justification

Introducing a reference to the ASTM D1653-13 standard in Table 5.9.1.1.

- would not modify performance requirements in the Code as ASTM D1653 is equivalent to the currently referenced CAN/CGSB-1.501-M standard;
- would provide the minimum level of performance for testing coatings and would not create any conflicts with the Code; and
- would harmonize the Code with the current state-of-the-art practice of the building envelope industry.

The reference to ASTM E96/E96M-16 in Sentence 5.5.1.2.(3) needs to be maintained in Part 5 as it covers the testing of vapour barriers. Therefore, the proposed change is also proposing to move this reference to Table 5.9.1.1. since that is how the other test standards are referenced in Part 5 (listed in Table 5.9.1.1.). For the same reason, the proposed change introduces the new ASTM D1653-16 reference in Table 5.9.1.1., and it also deletes Sentence 5.5.1.2.(2), which references the outdated CAN/CGSB-1.501-M standard.

Additionally, an explanatory note provides guidance on how to select an appropriate vapour barrier for a specific application with a view to minimizing the poor performance caused by an inappropriate vapour barrier.

PROPOSED CHANGE

[5.5.1.2.] 5.5.1.2. Vapour Barrier Properties and Installation

(See Note A-5.3.1.2.)

- [1] 1) The *vapour barrier* shall have sufficiently low permeance and shall be positioned in the *building* component or assembly so as to
- [a] a) minimize moisture transfer by diffusion, to surfaces within the assembly that would be cold enough to cause condensation at the design temperature and humidity conditions, or
- [b] b) reduce moisture transfer by diffusion, to surfaces within the assembly that would be cold enough to cause condensation at the design temperature

and humidity conditions, to a rate that will not allow sufficient accumulation of moisture to cause deterioration or otherwise adversely affect any of

- [i] i) the health or safety of *building* users,
- [ii] ii) the intended use of the *building*, or
- [iii] iii) the operation of *building* services.

(See Note A-5.5.1.2.(1).)

- ~~[2] 2) Coatings applied to gypsum board to provide required resistance to vapour diffusion shall conform to the requirements of Sentence (1) when tested in accordance with CAN/CGSB-1.501-M, "Method for Permeance of Coated Wallboard".~~
- ~~[3] 3) Coatings applied to materials other than gypsum board to provide required resistance to vapour diffusion shall conform to the requirements of Sentence (1) when tested in accordance with ASTM E96/E96M, "Standard Test Methods for Water Vapor Transmission of Materials", by the desiccant method (dry cup).~~

[5.9.1.1.] 5.9.1.1. Compliance with Applicable Standards

- [1] 1) Except as provided in Sentence (2) and elsewhere in this Part, materials and components, and their installation, shall conform to the requirements of the applicable standards in Table 5.9.1.1. where those materials or components are
 - [a] a) incorporated into environmental separators or assemblies exposed to the exterior, and
 - [b] b) installed to fulfill the requirements of this Part.
 (See Note A-5.9.1.1.(1).)
- [2] 2) The requirements for *flame-spread ratings* contained in thermal insulation standards shall be applied only as required in Part 3.

Table [5.9.1.1.] 5.9.1.1.

Standards Applicable to Environmental Separators and Assemblies Exposed to the Exterior
Forming Part of Sentence [5.9.1.1.] 5.9.1.1.([1] 1)

Issuing Agency	Document Number	Title of Document
ANSI	A135.6	Engineered Wood Siding
ASME	B18.6.1	Wood Screws (Inch Series)
ASTM	A123/A123M	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM	A153/A153M	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A653/A653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process

Issuing Agency	Document Number	Title of Document
ASTM	C4	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile
ASTM	C73	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)
ASTM	C126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C212	Standard Specification for Structural Clay Facing Tile
ASTM	C412M	Standard Specification for Concrete Drain Tile
ASTM	C444M	Standard Specification for Perforated Concrete Pipe
ASTM	C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM	C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM	C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM	C726	Standard Specification for Mineral Wool Roof Insulation Board
ASTM	C834 ⁽¹⁾	Standard Specification for Latex Sealants
ASTM	C840	Standard Specification for Application and Finishing of Gypsum Board
ASTM	C920 ⁽¹⁾	Standard Specification for Elastomeric Joint Sealants
ASTM	C991	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings
ASTM	C1002	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM	C1177/C1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM	C1178/C1178M	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
ASTM	C1184 ⁽¹⁾	Standard Specification for Structural Silicone Sealants
ASTM	C1280	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
ASTM	C1311 ⁽¹⁾	Standard Specification for Solvent Release Sealants

Issuing Agency	Document Number	Title of Document
ASTM	C1330 ⁽¹⁾	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM	C1396/C1396M ⁽²⁾	Standard Specification for Gypsum Board
ASTM	C1658/C1658M ⁽³⁾	Standard Specification for Glass Mat Gypsum Panels
ASTM	D1227/D1227M	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
ASTM	D1653-13	Standard Test Methods for Water Vapor Transmission of Organic Coating Films
ASTM	D2178/D2178M	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
ASTM	D3019/D3019M ⁽⁴⁾	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered
ASTM	D4479/D4479M	Standard Specification for Asphalt Roof Coatings – Asbestos-Free
ASTM	D4637/D4637M	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane
ASTM	D4811/D4811M	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
ASTM	D6878/D6878M	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
ASTM	E96/E96M-16 ⁽¹⁾	Standard Test Methods for Water Vapor Transmission of Materials
ASTM	E2190	Standard Specification for Insulating Glass Unit Performance and Evaluation
BNQ	BNQ 3624-115	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage
CGSB	CAN/CGSB-11.3-M	Hardboard
CGSB	CAN/CGSB-12.1	Safety Glazing
CGSB	CAN/CGSB-12.2-M	Flat, Clear Sheet Glass
CGSB	CAN/CGSB-12.3-M	Flat, Clear Float Glass
CGSB	CAN/CGSB-12.4-M	Heat Absorbing Glass
CGSB	CAN/CGSB-12.8	Insulating glass units
CGSB	CAN/CGSB-12.9	Spandrel glass

Issuing Agency	Document Number	Title of Document
CGSB	37-GP-9Ma	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing
CGSB	CAN/CGSB-37.50-M	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing
CGSB	CAN/CGSB-37.54	Polyvinyl Chloride Roofing and Waterproofing Membrane
CGSB	CAN/CGSB-37.58-M	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing
CGSB	CAN/CGSB-41.24	Rigid Vinyl Siding, Soffits and Fascia
CGSB	CAN/CGSB-51.32-M	Sheathing, Membrane, Breather Type
CGSB	CAN/CGSB-51.33-M	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction
CGSB	CAN/CGSB-51.34-M	Vapour Barrier, Polyethylene Sheet for Use in Building Construction
CGSB	CAN/CGSB-93.1-M	Sheet, Aluminum Alloy, Prefinished, Residential
CGSB	CAN/CGSB-93.2-M	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use
CSA	A23.1	Concrete materials and methods of concrete construction
CSA	CAN/CSA-A82	Fired masonry brick made from clay or shale
CSA	CAN3-A93-M	Natural Airflow Ventilators for Buildings
CSA	CAN/CSA-A123.2	Asphalt-Coated Roofing Sheets
CSA	A123.3	Asphalt Saturated Organic Roofing Felt
CSA	CAN/CSA-A123.4	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems
CSA	A123.5	Asphalt shingles made from glass felt and surfaced with mineral granules
CSA	CAN/CSA-A123.16	Asphalt-coated glass-base sheets
CSA	A123.17	Asphalt Glass Felt Used in Roofing and Waterproofing
CSA	A123.23	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced
CSA	A123.51	Asphalt shingle application on roof slopes 1:6 and steeper
CSA	A165.1	Concrete block masonry units
CSA	A165.2	Concrete brick masonry units

Issuing Agency	Document Number	Title of Document
CSA	A165.3	Prefaced concrete masonry units
CSA	CAN/CSA-A179	Mortar and Grout for Unit Masonry
CSA	CAN/CSA-A220 Series	Concrete Roof Tiles
CSA	CAN/CSA-A371	Masonry Construction for Buildings
CSA	A3001	Cementitious Materials for Use in Concrete
CSA	B182.1	Plastic drain and sewer pipe and pipe fittings
CSA	G40.21	Structural quality steel
CSA	CAN/CSA-G401	Corrugated steel pipe products
CSA	CAN/CSA-O80 Series	Wood preservation
CSA	O118.1	Western Red Cedar Shakes and Shingles
CSA	O118.2	Eastern White Cedar Shingles
CSA	O121	Douglas fir plywood
CSA	O141	Softwood Lumber
CSA	O151	Canadian softwood plywood
CSA	O153	Poplar plywood
CSA	O325	Construction sheathing
CSA	O437.0	OSB and Waferboard
HPVA	ANSI/HPVA HP-1	American National Standard for Hardwood and Decorative Plywood
ULC	CAN/ULC-S701.1	Standard for Thermal Insulation, Polystyrene Boards
ULC	CAN/ULC-S702.1	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification
ULC	CAN/ULC-S703	Standard for Cellulose Fibre Insulation (CFI) for Buildings
ULC	CAN/ULC-S704.1	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced
ULC	CAN/ULC-S705.1	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification
ULC	CAN/ULC-S705.2	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application

Issuing Agency	Document Number	Title of Document
ULC	CAN/ULC-S706.1	Standard for Wood Fibre Insulating Boards for Buildings
ULC	CAN/ULC-S710.1	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S711.1	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S717.1	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties

Notes to Table [\[5.9.1.1.\]](#) 5.9.1.1.:

- (1) See Note A-Table 5.9.1.1.
- (2) The *flame-spread rating* of gypsum board shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1396/C1396M.
- (3) The *flame-spread rating* of gypsum panels shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1658/C1658M.
- (4) For the purpose of compliance with Part 5, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types of asphalt roll roofing.

Note A-Table 5.9.1.1. ~~Selection and Installation of Sealants~~ [Compliance with Applicable Standards.](#)

[Selection and Application of Vapour Barriers Using ASTM E96/E96M](#)

[When using ASTM E96/E96M, "Standard Test Methods for Water Vapor Transmission of Materials," to assess the suitability of a vapour barrier material, the choice to use either the Desiccant Method \(Procedure A\) or the Water Method \(Procedure B\) should be based on the relative humidity of the exposure condition where the vapour barrier is to be located. The Desiccant Method should be used where the relative humidity of the exposure condition is less than 50%, while the Water Method should be used where the relative humidity of the exposure condition is greater than or equal to 50% \(e.g. natatoriums\).](#)

Impact analysis

This proposed change should not entail any additional costs. Manufacturers currently test coatings and other vapour barriers in accordance with ASTM D1653-13 and ASTM E96/E96M-16, respectively.

Enforcement implications

The standard can be enforced without additional resources. The proposed changes avoid enforcement issues for authorities having jurisdiction.

Who is affected

Designers, specifiers, manufacturers, contractors, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[5.5.1.2.\]](#) 5.5.1.2. ([1] 1) [F63-OH1.1,OH1.2]

[\[5.5.1.2.\]](#) 5.5.1.2. ([1] 1) [F63-OS2.3]

~~[\[5.5.1.2.\]](#) 5.5.1.2. ([2] 2) [F63-OH1.1,OH1.2]~~

~~[\[5.5.1.2.\]](#) 5.5.1.2. ([2] 2) [F63-OS2.3]~~

~~[\[5.5.1.2.\]](#) 5.5.1.2. ([3] 3) [F63-OH1.1,OH1.2]~~

~~[\[5.5.1.2.\]](#) 5.5.1.2. ([3] 3) [F63-OS2.3]~~

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1)

[F20,F22,F51,F54,F55,F61,F63,F80-OH1.1,OH1.2] [F41,F55-OH1.1] [F55,F61,F80-OH1.3]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1)

[F20,F80-OS2.1] [F20,F22,F51,F61,F63,F80-OS2.3] [F51-OS2.5]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F20-OS2.2] [F80-OS2.3]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F80,F61,F63-OS3.1]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F80,F61,F63-OH4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) ([a] a) [F61,F63-OS1.4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F20,F80-OP2.1,OP2.3] [F22,F80-OP2.4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F42-OH2.5]

[\[5.9.1.1.\]](#) 5.9.1.1. ([2] 2) no attributions

[Submit a comment](#)

Proposed Change 1758

Code Reference(s): NBC20 Div.B 5.5.1.2. (first printing)
Subject: Vapour Barrier
Title: Vapour Barrier Materials and Installation
Description: This proposed change updates explanatory Note A-5.5.1.2.(1) to include a rational analysis for the determination of the permeance level for the vapour barrier and its location.

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

All building envelopes (roofs and exterior walls) transfer heat and moisture.

The direction of vapour diffusion is always from a region of higher vapour pressure to one of lower vapour pressure. In certain situations, the direction of vapour difference is not from inside to outside: an example of this is cold storage warehouses, where the direction of vapour transmission can be from outside to inside over large portions of the year. Thus, building envelope systems are becoming more complex, therefore necessitating alternative forms of analysis beyond conventional steady-state system analysis. Non-linear methods of analysis, such as hygrothermal modeling, are now routinely used to validate or invalidate potential wall systems at the design stage and, as such, should be acknowledged in the NBC.

Justification

Building envelope systems are becoming more complex to accommodate increasing levels of insulation and address premature failures, particularly in regard to high humidity enclosures in harsh winter climates.

Dynamic analysis methods, such as hygrothermal modeling, have largely moved into “state of the practice” for building science, particularly due to the advent of commercially available hygrothermal modeling programs. In addition, international standards for hygrothermal modeling have been developed (ASTM E3054/ISO 18787) to help standardize procedures for a more accurate estimation of condensation potential from vapour diffusion. The NBC should therefore acknowledge that more advanced non-linear techniques are available for the assessment of condensation potential from vapour diffusion in building envelopes compared to traditional steady-state calculations.

As a caveat, the user must be adequately trained in the field of building science and must understand the input parameters and limitations associated with the results produced by hygrothermal modeling programs.

PROPOSED CHANGE

NBC20 Div.B 5.5.1.2. (first printing)

[\[5.5.1.2.\]](#) 5.5.1.2. Vapour Barrier Properties and Installation

Note A-5.5.1.2.(1) Vapour Barrier Materials and Installation.

~~In the summer, many buildings are subject to conditions where the interior temperature is lower than the exterior temperature. Vapour transfer during these periods is from the exterior to the interior. In general, in Canada, the duration of these periods is sufficiently short, the driving forces are sufficiently low, and assemblies are constructed such that any accumulated moisture will dissipate before deterioration will occur.~~
Prescriptive designs and simple vapour diffusion calculations based on steady-state heat transfer and steady-state vapour flow (using fixed vapour pressure differences and material vapour permeances) have commonly been used to determine the appropriate location of the vapour barrier within an assembly prior to construction. By using these methods, designers can focus on preventing the accumulation of condensation on the surface of materials and components, although material and assembly failures may not necessarily be related to sustained condensation resulting from vapour diffusion. However, where the principal mechanism for moisture movement and ingress is vapour diffusion, the use of these methods may still result in an acceptable assembly design, provided that the driving forces of vapour diffusion are sufficiently low so as to avoid the surface accumulation or absorption of condensation or that, should condensation occur, it would dissipate before the onset of material or

assembly degradation. It is important to note that these methods do not account for the moisture that can be stored by materials and ignore moisture transfer mechanisms other than vapour diffusion.

~~Buildings such as freezer plants, however, may operate for much of the year at temperatures that are below the ambient exterior temperature. In these cases, the “warm” side of the assembly would be the exterior and a detailed analysis on an annual basis is required.~~Prescriptive designs and simple vapour diffusion calculations have a limited application. Designers should determine if the properties of the materials within the environmental separator and the interior environmental conditions and climatic exposure are such that a detailed dynamic analysis using environmental data from one or more reference years is needed to ensure their design will prevent the development of harmful or damaging levels of condensation. Dynamic analysis (such as hygrothermal modeling) may be necessary to suitably establish the location of the vapour barrier within the assembly and its vapour diffusion resistance, as well as the location and properties of other components within the assembly that may offer resistance to vapour diffusion. In such cases, simulation parameters should be established with care by building science design professionals and with the use of applicable software. Further guidance on modeling may be found in CSA S478-2019, “Durability in buildings.”

~~Steady state heat transfer and vapour diffusion calculations may be used to determine acceptable permeance levels for the vapour barrier and to identify appropriate positions for the vapour barrier within the building assembly.~~

Impact analysis

This proposed change expands an existing explanatory note to provide clarifications to Code users and help them avoid the implementation of improper solutions to meet Code requirements. It is neither controversial nor complex, requires little effort to develop, does not involve any policy issues, scope issues, or enforcement issues, and has a minor impact on cost.

Therefore, this change to explanatory Note A-5.5.1.2.(1) warrants a very simple analysis.

The proposed change adds clarification for the Code user on existing tools or models that can be used to evaluate whether a design or construction conforms to the Code. It is understood that these tools and models have been used by the construction industry stakeholders and building professionals for many decades, but that the existing explanatory Note failed to describe the possibility and appropriateness of their use.

For the above-stated reasons, the following impacts are foreseen:

- 1) No quantifiable cost impact as the tools and models proposed in the explanatory Note are presently being used by all involved parties.

- 2) Beneficial impacts include:
- a) reducing the risk associated with potential condensation within the wall assembly at the design temperature and humidity conditions that could cause deterioration or otherwise adversely affect
 - i. the health or safety of building users,
 - ii. the intended use of the building, or
 - iii. the operation of building services;
 - b) increasing the ability of the designer to improve the performance of buildings;
 - c) clarifying Code provisions that ease enforcement and save time; and
 - d) offering design flexibility and potentially providing less costly acceptable solutions to the industry.

Enforcement implications

The authority having jurisdiction relies on the professionals; the purpose of this change to the explanatory Note is to offer guidance to designers. Enforcement can be achieved by existing means and resources. However, if the AHJ decides to undertake a detailed review, then basic knowledge of the modeling software is required.

Who is affected

Designers, specification writers, contractors, and building officials.

Designers and specification writers: There should be minimal impact (if any) to designers and specification writers. Once the analysis is complete, it is a matter of verifying the location of the vapour barrier within the assembly.

Contractors: No impact on contractors as they will be following the plans that they have when it comes to selecting the vapour barrier and its location.

Building officials: They will review the plans submitted to assure that a vapour barrier is installed as per Code requirements. In some cases, building officials may also check what vapour barrier is specified. If the AHJ decides to undertake a detailed review, then basic knowledge of the modeling software is required.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 5.5.1.2. (first printing)

[\[5.5.1.2.\]](#) 5.5.1.2. ([\[1\]](#) 1) [F63-OH1.1,OH1.2]

[\[5.5.1.2.\]](#) 5.5.1.2. ([\[1\]](#) 1) [F63-OS2.3]

[\[5.5.1.2.\]](#) 5.5.1.2. ([\[2\]](#) 2) [F63-OH1.1,OH1.2]

[\[5.5.1.2.\]](#) 5.5.1.2. ([\[2\]](#) 2) [F63-OS2.3]

[\[5.5.1.2.\]](#) 5.5.1.2. ([\[3\]](#) 3) [F63-OH1.1,OH1.2]

[\[5.5.1.2.\]](#) 5.5.1.2. ([\[3\]](#) 3) [F63-OS2.3]

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Proposed Change 1483

Code Reference(s):	NBC20 Div.B 5.9.1.1. (first printing)
Subject:	Environmental Separation Table 5.9.1.1.
Title:	Introduction of a New Standard on Asphalt Core Boards
Description:	This proposed change introduces CAN/CSA-A123.25-18, "Asphalt core boards used in roofing," to Table 5.9.1.1.
Related Code Change Request(s):	CCR 1272
Related Proposed Change(s):	PCF 1467

This change could potentially affect the following topic areas:

- | | |
|--|--|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Asphalt core boards are commonly used in practice, but there are no explicit requirements relating to this material in Part 5.

The lack of a reference in the NBC to a material standard for asphalt core boards has resulted in inconsistency in their design, construction and performance across Canada, which could expose Canadians to an unacceptable risk of illness due to inadequate indoor air quality, inadequate thermal comfort, and contact with moisture.

Justification

The standard CAN/CSA-A123.25-18, "Asphalt core boards used in roofing,"

- reflects the minimum acceptable practice regarding substrates for asphalt-based and low-slope roofing membranes,
- is suitable for referencing in the NBC, and

- will harmonize practice and performance across Canada, thus minimizing the health risks to Canadians due to inadequate indoor air quality, inadequate thermal comfort, and contact with moisture.

PROPOSED CHANGE

[\[5.9.1.1.\]](#) 5.9.1.1. Compliance with Applicable Standards

- [\[1\]](#) 1) Except as provided in Sentence (2) and elsewhere in this Part, materials and components, and their installation, shall conform to the requirements of the applicable standards in Table 5.9.1.1. where those materials or components are
- [a] a) incorporated into environmental separators or assemblies exposed to the exterior, and
- [b] b) installed to fulfill the requirements of this Part.
(See Note A-5.9.1.1.(1).)
- [\[2\]](#) 2) The requirements for *flame-spread ratings* contained in thermal insulation standards shall be applied only as required in Part 3.

Table [\[5.9.1.1.\]](#) 5.9.1.1.
Standards Applicable to Environmental Separators and Assemblies Exposed to the Exterior
Forming Part of Sentence [\[5.9.1.1.\]](#) 5.9.1.1.([1] 1)

Issuing Agency	Document Number	Title of Document
ANSI	A135.6	Engineered Wood Siding
ASME	B18.6.1	Wood Screws (Inch Series)
ASTM	A123/A123M	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM	A153/A153M	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A653/A653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM	C4	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile
ASTM	C73	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)
ASTM	C126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units

Issuing Agency	Document Number	Title of Document
ASTM	C212	Standard Specification for Structural Clay Facing Tile
ASTM	C412M	Standard Specification for Concrete Drain Tile
ASTM	C444M	Standard Specification for Perforated Concrete Pipe
ASTM	C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM	C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM	C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM	C726	Standard Specification for Mineral Wool Roof Insulation Board
ASTM	C834 ⁽¹⁾	Standard Specification for Latex Sealants
ASTM	C840	Standard Specification for Application and Finishing of Gypsum Board
ASTM	C920 ⁽¹⁾	Standard Specification for Elastomeric Joint Sealants
ASTM	C991	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings
ASTM	C1002	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM	C1177/C1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM	C1178/C1178M	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
ASTM	C1184 ⁽¹⁾	Standard Specification for Structural Silicone Sealants
ASTM	C1280	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
ASTM	C1311 ⁽¹⁾	Standard Specification for Solvent Release Sealants
ASTM	C1330 ⁽¹⁾	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM	C1396/C1396M ⁽²⁾	Standard Specification for Gypsum Board
ASTM	C1658/C1658M ⁽³⁾	Standard Specification for Glass Mat Gypsum Panels

Issuing Agency	Document Number	Title of Document
ASTM	D1227/D1227M	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
ASTM	D2178/D2178M	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
ASTM	D3019/D3019M ⁽⁴⁾	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered
ASTM	D4479/D4479M	Standard Specification for Asphalt Roof Coatings – Asbestos-Free
ASTM	D4637/D4637M	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane
ASTM	D4811/D4811M	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
ASTM	D6878/D6878M	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
ASTM	E2190	Standard Specification for Insulating Glass Unit Performance and Evaluation
BNQ	BNQ 3624-115	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage
CGSB	CAN/CGSB-11.3-M	Hardboard
CGSB	CAN/CGSB-12.1	Safety Glazing
CGSB	CAN/CGSB-12.2-M	Flat, Clear Sheet Glass
CGSB	CAN/CGSB-12.3-M	Flat, Clear Float Glass
CGSB	CAN/CGSB-12.4-M	Heat Absorbing Glass
CGSB	CAN/CGSB-12.8	Insulating glass units
CGSB	CAN/CGSB-12.9	Spandrel glass
CGSB	37-GP-9Ma	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing
CGSB	CAN/CGSB-37.50-M	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing
CGSB	CAN/CGSB-37.54	Polyvinyl Chloride Roofing and Waterproofing Membrane
CGSB	CAN/CGSB-37.58-M	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing
CGSB	CAN/CGSB-41.24	Rigid Vinyl Siding, Soffits and Fascia

Issuing Agency	Document Number	Title of Document
CGSB	CAN/CGSB-51.32-M	Sheathing, Membrane, Breather Type
CGSB	CAN/CGSB-51.33-M	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction
CGSB	CAN/CGSB-51.34-M	Vapour Barrier, Polyethylene Sheet for Use in Building Construction
CGSB	CAN/CGSB-93.1-M	Sheet, Aluminum Alloy, Prefinished, Residential
CGSB	CAN/CGSB-93.2-M	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use
CSA	A23.1	Concrete materials and methods of concrete construction
CSA	CAN/CSA-A82	Fired masonry brick made from clay or shale
CSA	CAN3-A93-M	Natural Airflow Ventilators for Buildings
CSA	CAN/CSA-A123.2	Asphalt-Coated Roofing Sheets
CSA	CAN/CSA-A123.25-18	Asphalt core boards used in roofing
CSA	A123.3	Asphalt Saturated Organic Roofing Felt
CSA	CAN/CSA-A123.4	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems
CSA	A123.5	Asphalt shingles made from glass felt and surfaced with mineral granules
CSA	CAN/CSA-A123.16	Asphalt-coated glass-base sheets
CSA	A123.17	Asphalt Glass Felt Used in Roofing and Waterproofing
CSA	A123.23	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced
CSA	A123.51	Asphalt shingle application on roof slopes 1:6 and steeper
CSA	A165.1	Concrete block masonry units
CSA	A165.2	Concrete brick masonry units
CSA	A165.3	Prefaced concrete masonry units
CSA	CAN/CSA-A179	Mortar and Grout for Unit Masonry
CSA	CAN/CSA-A220 Series	Concrete Roof Tiles
CSA	CAN/CSA-A371	Masonry Construction for Buildings
CSA	A3001	Cementitious Materials for Use in Concrete
CSA	B182.1	Plastic drain and sewer pipe and pipe fittings

Issuing Agency	Document Number	Title of Document
CSA	G40.21	Structural quality steel
CSA	CAN/CSA-G401	Corrugated steel pipe products
CSA	CAN/CSA-O80 Series	Wood preservation
CSA	O118.1	Western Red Cedar Shakes and Shingles
CSA	O118.2	Eastern White Cedar Shingles
CSA	O121	Douglas fir plywood
CSA	O141	Softwood Lumber
CSA	O151	Canadian softwood plywood
CSA	O153	Poplar plywood
CSA	O325	Construction sheathing
CSA	O437.0	OSB and Waferboard
HPVA	ANSI/HPVA HP-1	American National Standard for Hardwood and Decorative Plywood
ULC	CAN/ULC-S701.1	Standard for Thermal Insulation, Polystyrene Boards
ULC	CAN/ULC-S702.1	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification
ULC	CAN/ULC-S703	Standard for Cellulose Fibre Insulation (CFI) for Buildings
ULC	CAN/ULC-S704.1	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced
ULC	CAN/ULC-S705.1	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification
ULC	CAN/ULC-S705.2	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application
ULC	CAN/ULC-S706.1	Standard for Wood Fibre Insulating Boards for Buildings
ULC	CAN/ULC-S710.1	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S711.1	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S717.1	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties

Notes to Table [\[5.9.1.1.\]](#) 5.9.1.1.:

- (1) See Note A-Table 5.9.1.1.
 - (2) The *flame-spread rating* of gypsum board shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1396/C1396M.
 - (3) The *flame-spread rating* of gypsum panels shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1658/C1658M.
 - (4) For the purpose of compliance with Part 5, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types of asphalt roll roofing.
-

Impact analysis

The implementation of this proposed change is not expected to impose any additional costs as the industry is already using the proposed standard. The cost of the test ranges from \$7,000 to \$9,000.

Adding the standard will lighten the workload of contractors, manufacturers, designers, specification writers and building officials in determining Code compliance.

Enforcement implications

The standard can be enforced without additional resources.

Who is affected

Designers, specifiers, manufacturers, contractors, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1)
[F20,F22,F51,F54,F55,F61,F63,F80-OH1.1,OH1.2] [F41,F55-OH1.1] [F55,F61,F80-OH1.3]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1)
[F20,F80-OS2.1] [F20,F22,F51,F61,F63,F80-OS2.3] [F51-OS2.5]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F20-OS2.2] [F80-OS2.3]

[\[5.9.1.1.\]](#) 5.9.1.1. ([1] 1) [F80,F61,F63-OS3.1]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OH4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) ([\[a\]](#) a) [F61,F63-OS1.4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20,F80-OP2.1,OP2.3] [F22,F80-OP2.4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F42-OH2.5]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[2\]](#) 2) no attributions

[Submit a comment](#)

Proposed Change 1703

Code Reference(s): NBC20 Div.B 5.9.1.1. (first printing)
Subject: Insulating Concrete Forms (ICF)
Title: Gypsum Board Application on Flat Wall Insulating Concrete Form Units

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Part 5 of the NBC currently references the 2018b edition of ASTM C840, "Standard Specification for Application and Finishing of Gypsum Board." However, this reference requires some qualifications for Part 5 applications involving flat wall insulating concrete form units.

Justification

The Standing Committee on Environmental Separation

- reviewed ASTM C840, and
- agreed to add a note to Table 5.9.1.1. and an explanatory note on cross-tie spacing in flat wall insulating concrete form units.

PROPOSED CHANGE

[5.9.1.1.] 5.9.1.1. Compliance with Applicable Standards

- [1] 1) Except as provided in Sentence (2) and elsewhere in this Part, materials and components, and their installation, shall conform to the requirements of the applicable standards in Table 5.9.1.1. where those materials or components are
- [a] a) incorporated into environmental separators or assemblies exposed to the exterior, and
 - [b] b) installed to fulfill the requirements of this Part.
- (See Note A-5.9.1.1.(1).)
- [2] 2) The requirements for *flame-spread ratings* contained in thermal insulation standards shall be applied only as required in Part 3.

Table [5.9.1.1.] 5.9.1.1.
Standards Applicable to Environmental Separators and Assemblies Exposed to the Exterior
Forming Part of Sentence [5.9.1.1.] 5.9.1.1.([1] 1)

Issuing Agency	Document Number	Title of Document
ANSI	A135.6	Engineered Wood Siding
ASME	B18.6.1	Wood Screws (Inch Series)
ASTM	A123/A123M	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM	A153/A153M	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A653/A653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM	C4	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile
ASTM	C73	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)
ASTM	C126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C212	Standard Specification for Structural Clay Facing Tile
ASTM	C412M	Standard Specification for Concrete Drain Tile
ASTM	C444M	Standard Specification for Perforated Concrete Pipe

Issuing Agency	Document Number	Title of Document
ASTM	C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM	C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM	C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM	C726	Standard Specification for Mineral Wool Roof Insulation Board
ASTM	C834 ⁽¹⁾	Standard Specification for Latex Sealants
ASTM	C840 ⁽¹⁾ ⁽²⁾	Standard Specification for Application and Finishing of Gypsum Board
ASTM	C920 ⁽¹⁾	Standard Specification for Elastomeric Joint Sealants
ASTM	C991	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings
ASTM	C1002	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM	C1177/C1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM	C1178/C1178M	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
ASTM	C1184 ⁽¹⁾	Standard Specification for Structural Silicone Sealants
ASTM	C1280	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
ASTM	C1311 ⁽¹⁾	Standard Specification for Solvent Release Sealants
ASTM	C1330 ⁽¹⁾	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM	C1396/C1396M ⁽³⁾	Standard Specification for Gypsum Board
ASTM	C1658/C1658M ⁽⁴⁾	Standard Specification for Glass Mat Gypsum Panels
ASTM	D1227/D1227M	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
ASTM	D2178/D2178M	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
ASTM	D3019/D3019M ⁽⁵⁾	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered

Issuing Agency	Document Number	Title of Document
ASTM	D4479/D4479M	Standard Specification for Asphalt Roof Coatings – Asbestos-Free
ASTM	D4637/D4637M	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane
ASTM	D4811/D4811M	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
ASTM	D6878/D6878M	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
ASTM	E2190	Standard Specification for Insulating Glass Unit Performance and Evaluation
BNQ	BNQ 3624-115	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage
CGSB	CAN/CGSB-11.3-M	Hardboard
CGSB	CAN/CGSB-12.1	Safety Glazing
CGSB	CAN/CGSB-12.2-M	Flat, Clear Sheet Glass
CGSB	CAN/CGSB-12.3-M	Flat, Clear Float Glass
CGSB	CAN/CGSB-12.4-M	Heat Absorbing Glass
CGSB	CAN/CGSB-12.8	Insulating glass units
CGSB	CAN/CGSB-12.9	Spandrel glass
CGSB	37-GP-9Ma	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing
CGSB	CAN/CGSB-37.50-M	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing
CGSB	CAN/CGSB-37.54	Polyvinyl Chloride Roofing and Waterproofing Membrane
CGSB	CAN/CGSB-37.58-M	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing
CGSB	CAN/CGSB-41.24	Rigid Vinyl Siding, Soffits and Fascia
CGSB	CAN/CGSB-51.32-M	Sheathing, Membrane, Breather Type
CGSB	CAN/CGSB-51.33-M	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction
CGSB	CAN/CGSB-51.34-M	Vapour Barrier, Polyethylene Sheet for Use in Building Construction

Issuing Agency	Document Number	Title of Document
CGSB	CAN/CGSB-93.1-M	Sheet, Aluminum Alloy, Prefinished, Residential
CGSB	CAN/CGSB-93.2-M	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use
CSA	A23.1	Concrete materials and methods of concrete construction
CSA	CAN/CSA-A82	Fired masonry brick made from clay or shale
CSA	CAN3-A93-M	Natural Airflow Ventilators for Buildings
CSA	CAN/CSA-A123.2	Asphalt-Coated Roofing Sheets
CSA	A123.3	Asphalt Saturated Organic Roofing Felt
CSA	CAN/CSA-A123.4	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems
CSA	A123.5	Asphalt shingles made from glass felt and surfaced with mineral granules
CSA	CAN/CSA-A123.16	Asphalt-coated glass-base sheets
CSA	A123.17	Asphalt Glass Felt Used in Roofing and Waterproofing
CSA	A123.23	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced
CSA	A123.51	Asphalt shingle application on roof slopes 1:6 and steeper
CSA	A165.1	Concrete block masonry units
CSA	A165.2	Concrete brick masonry units
CSA	A165.3	Prefaced concrete masonry units
CSA	CAN/CSA-A179	Mortar and Grout for Unit Masonry
CSA	CAN/CSA-A220 Series	Concrete Roof Tiles
CSA	CAN/CSA-A371	Masonry Construction for Buildings
CSA	A3001	Cementitious Materials for Use in Concrete
CSA	B182.1	Plastic drain and sewer pipe and pipe fittings
CSA	G40.21	Structural quality steel
CSA	CAN/CSA-G401	Corrugated steel pipe products
CSA	CAN/CSA-O80 Series	Wood preservation
CSA	O118.1	Western Red Cedar Shakes and Shingles

Issuing Agency	Document Number	Title of Document
CSA	O118.2	Eastern White Cedar Shingles
CSA	O121	Douglas fir plywood
CSA	O141	Softwood Lumber
CSA	O151	Canadian softwood plywood
CSA	O153	Poplar plywood
CSA	O325	Construction sheathing
CSA	O437.0	OSB and Waferboard
HPVA	ANSI/HPVA HP-1	American National Standard for Hardwood and Decorative Plywood
ULC	CAN/ULC-S701.1	Standard for Thermal Insulation, Polystyrene Boards
ULC	CAN/ULC-S702.1	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification
ULC	CAN/ULC-S703	Standard for Cellulose Fibre Insulation (CFI) for Buildings
ULC	CAN/ULC-S704.1	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced
ULC	CAN/ULC-S705.1	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification
ULC	CAN/ULC-S705.2	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application
ULC	CAN/ULC-S706.1	Standard for Wood Fibre Insulating Boards for Buildings
ULC	CAN/ULC-S710.1	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S711.1	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S717.1	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties

Notes to Table [\[5.9.1.1.\]](#) 5.9.1.1.:

- (1) See Note A-Table 5.9.1.1.
- (2) [Flat wall insulating concrete form units shall conform to CAN/ULC-S717.1 in lieu of ASTM E2634 as indicated in ASTM C840.](#)

-
- (3) The *flame-spread rating* of gypsum board shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1396/C1396M.
 - (4) The *flame-spread rating* of gypsum panels shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1658/C1658M.
 - (5) For the purpose of compliance with Part 5, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types of asphalt roll roofing.
-

Note A-Table 5.9.1.1. ~~Selection and Installation of Sealants~~ Compliance with Applicable Standards.

Cross-tie Spacing in Flat Wall Insulating Concrete Form Units

ASTM C840, "Standard Specification for Application and Finishing of Gypsum Board," specifies that cross-tie flanges must be spaced at a maximum of 300 mm o.c. Most ICF manufacturers provide for cross-tie spacing at 150 mm o.c. and 200 mm o.c.

Impact analysis

This proposed change provides clarifications and guidance by way of a tablenote and an explanatory note: these are mainly signposts.

Enforcement implications

This proposed change provides clarifications and guidance by way of a tablenote and an explanatory note, which will facilitate enforcement.

Who is affected

Designers, specification writers, manufacturers, contractors and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[5.9.1.1.] 5.9.1.1. ([1] 1)

[F20,F22,F51,F54,F55,F61,F63,F80-OH1.1,OH1.2] [F41,F55-OH1.1] [F55,F61,F80-OH1.3]

- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1)
[F20,F80-OS2.1] [F20,F22,F51,F61,F63,F80-OS2.3] [F51-OS2.5]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20-OS2.2] [F80-OS2.3]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OS3.1]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OH4]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) ([\[a\]](#) a) [F61,F63-OS1.4]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20,F80-OP2.1,OP2.3] [F22,F80-OP2.4]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F42-OH2.5]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[2\]](#) 2) no attributions

[Submit a comment](#)

Proposed Change 1759

Code Reference(s): NBC20 Div.B 5.9.1.1. (first printing)
Subject: Environmental Separation Table 5.9.1.1.
Title: Deletion of an Outdated CAN/CGSB Standard
Description: This proposed change deletes the reference to CAN/CGSB-11.3-M87, "Hardboard," from Table 5.9.1.1.

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The standard CAN/CGSB-11.3-M87, "Hardboard," which is currently referenced in Table 5.9.1.1. of the NBC, has not been updated since 1987 and was withdrawn in 2016.

Justification

At the mid-cycle review of updates to the standards currently referenced in Table 5.9.1.1., the Standing Committee on Environmental Separation determined that CAN/CGSB-11.3-M87

- was withdrawn in June 2016, and
- is no longer used in practice, except for work on certain heritage buildings.

Therefore, the Standing Committee agreed to delete the reference to this withdrawn standard.

PROPOSED CHANGE

NBC20 Div.B 5.9.1.1. (first printing)

[\[5.9.1.1.\]](#) 5.9.1.1. Compliance with Applicable Standards

- [\[1\]](#) 1) Except as provided in Sentence (2) and elsewhere in this Part, materials and components, and their installation, shall conform to the requirements of the applicable standards in Table 5.9.1.1. where those materials or components are
- [a] a) incorporated into environmental separators or assemblies exposed to the exterior, and
- [b] b) installed to fulfill the requirements of this Part.
- (See Note A-5.9.1.1.(1).)
- [\[2\]](#) 2) The requirements for *flame-spread ratings* contained in thermal insulation standards shall be applied only as required in Part 3.

Table [\[5.9.1.1.\]](#) 5.9.1.1.
Standards Applicable to Environmental Separators and Assemblies Exposed to the Exterior
Forming Part of Sentence [\[5.9.1.1.\]](#) 5.9.1.1.([1] 1)

Issuing Agency	Document Number	Title of Document
ANSI	A135.6	Engineered Wood Siding
ASME	B18.6.1	Wood Screws (Inch Series)
ASTM	A123/A123M	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM	A153/A153M	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A653/A653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM	C4	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile
ASTM	C73	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)
ASTM	C126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C212	Standard Specification for Structural Clay Facing Tile
ASTM	C412M	Standard Specification for Concrete Drain Tile
ASTM	C444M	Standard Specification for Perforated Concrete Pipe

Issuing Agency	Document Number	Title of Document
ASTM	C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM	C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM	C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM	C726	Standard Specification for Mineral Wool Roof Insulation Board
ASTM	C834 ⁽¹⁾	Standard Specification for Latex Sealants
ASTM	C840	Standard Specification for Application and Finishing of Gypsum Board
ASTM	C920 ⁽¹⁾	Standard Specification for Elastomeric Joint Sealants
ASTM	C991	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings
ASTM	C1002	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM	C1177/C1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM	C1178/C1178M	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
ASTM	C1184 ⁽¹⁾	Standard Specification for Structural Silicone Sealants
ASTM	C1280	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
ASTM	C1311 ⁽¹⁾	Standard Specification for Solvent Release Sealants
ASTM	C1330 ⁽¹⁾	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM	C1396/C1396M ⁽²⁾	Standard Specification for Gypsum Board
ASTM	C1658/C1658M ⁽³⁾	Standard Specification for Glass Mat Gypsum Panels
ASTM	D1227/D1227M	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
ASTM	D2178/D2178M	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
ASTM	D3019/D3019M ⁽⁴⁾	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered

Issuing Agency	Document Number	Title of Document
ASTM	D4479/D4479M	Standard Specification for Asphalt Roof Coatings – Asbestos-Free
ASTM	D4637/D4637M	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane
ASTM	D4811/D4811M	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
ASTM	D6878/D6878M	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
ASTM	E2190	Standard Specification for Insulating Glass Unit Performance and Evaluation
BNQ	BNQ 3624-115	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage
CGSB	CAN/CGSB-11.3-M	Hardboard
CGSB	CAN/CGSB-12.1	Safety Glazing
CGSB	CAN/CGSB-12.2-M	Flat, Clear Sheet Glass
CGSB	CAN/CGSB-12.3-M	Flat, Clear Float Glass
CGSB	CAN/CGSB-12.4-M	Heat Absorbing Glass
CGSB	CAN/CGSB-12.8	Insulating glass units
CGSB	CAN/CGSB-12.9	Spandrel glass
CGSB	37-GP-9Ma	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing
CGSB	CAN/CGSB-37.50-M	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing
CGSB	CAN/CGSB-37.54	Polyvinyl Chloride Roofing and Waterproofing Membrane
CGSB	CAN/CGSB-37.58-M	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing
CGSB	CAN/CGSB-41.24	Rigid Vinyl Siding, Soffits and Fascia
CGSB	CAN/CGSB-51.32-M	Sheathing, Membrane, Breather Type
CGSB	CAN/CGSB-51.33-M	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction
CGSB	CAN/CGSB-51.34-M	Vapour Barrier, Polyethylene Sheet for Use in Building Construction

Issuing Agency	Document Number	Title of Document
CGSB	CAN/CGSB-93.1-M	Sheet, Aluminum Alloy, Prefinished, Residential
CGSB	CAN/CGSB-93.2-M	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use
CSA	A23.1	Concrete materials and methods of concrete construction
CSA	CAN/CSA-A82	Fired masonry brick made from clay or shale
CSA	CAN3-A93-M	Natural Airflow Ventilators for Buildings
CSA	CAN/CSA-A123.2	Asphalt-Coated Roofing Sheets
CSA	A123.3	Asphalt Saturated Organic Roofing Felt
CSA	CAN/CSA-A123.4	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems
CSA	A123.5	Asphalt shingles made from glass felt and surfaced with mineral granules
CSA	CAN/CSA-A123.16	Asphalt-coated glass-base sheets
CSA	A123.17	Asphalt Glass Felt Used in Roofing and Waterproofing
CSA	A123.23	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced
CSA	A123.51	Asphalt shingle application on roof slopes 1:6 and steeper
CSA	A165.1	Concrete block masonry units
CSA	A165.2	Concrete brick masonry units
CSA	A165.3	Prefaced concrete masonry units
CSA	CAN/CSA-A179	Mortar and Grout for Unit Masonry
CSA	CAN/CSA-A220 Series	Concrete Roof Tiles
CSA	CAN/CSA-A371	Masonry Construction for Buildings
CSA	A3001	Cementitious Materials for Use in Concrete
CSA	B182.1	Plastic drain and sewer pipe and pipe fittings
CSA	G40.21	Structural quality steel
CSA	CAN/CSA-G401	Corrugated steel pipe products
CSA	CAN/CSA-O80 Series	Wood preservation
CSA	O118.1	Western Red Cedar Shakes and Shingles

Issuing Agency	Document Number	Title of Document
CSA	O118.2	Eastern White Cedar Shingles
CSA	O121	Douglas fir plywood
CSA	O141	Softwood Lumber
CSA	O151	Canadian softwood plywood
CSA	O153	Poplar plywood
CSA	O325	Construction sheathing
CSA	O437.0	OSB and Waferboard
HPVA	ANSI/HPVA HP-1	American National Standard for Hardwood and Decorative Plywood
ULC	CAN/ULC-S701.1	Standard for Thermal Insulation, Polystyrene Boards
ULC	CAN/ULC-S702.1	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification
ULC	CAN/ULC-S703	Standard for Cellulose Fibre Insulation (CFI) for Buildings
ULC	CAN/ULC-S704.1	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced
ULC	CAN/ULC-S705.1	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification
ULC	CAN/ULC-S705.2	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application
ULC	CAN/ULC-S706.1	Standard for Wood Fibre Insulating Boards for Buildings
ULC	CAN/ULC-S710.1	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S711.1	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S717.1	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties

Notes to Table [\[5.9.1.1.\]](#) 5.9.1.1.:

- (1) See Note A-Table 5.9.1.1.
 - (2) The *flame-spread rating* of gypsum board shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1396/C1396M.
-

-
- (3) The *flame-spread rating* of gypsum panels shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1658/C1658M.
- (4) For the purpose of compliance with Part 5, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types of asphalt roll roofing.
-

Impact analysis

None. The standard has not been adhered to in practice.

Enforcement implications

None. The standard has not been adhered to in practice.

Who is affected

Designers, specifiers, manufacturers, building owners, building officials and contractors.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 5.9.1.1. (first printing)

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1)
[F20,F22,F51,F54,F55,F61,F63,F80-OH1.1,OH1.2] [F41,F55-OH1.1] [F55,F61,F80-OH1.3]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1)
[F20,F80-OS2.1] [F20,F22,F51,F61,F63,F80-OS2.3] [F51-OS2.5]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20-OS2.2] [F80-OS2.3]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OS3.1]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OH4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) ([\[a\]](#) a) [F61,F63-OS1.4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20,F80-OP2.1,OP2.3] [F22,F80-OP2.4]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F42-OH2.5]

[\[5.9.1.1.\]](#) 5.9.1.1. ([\[2\]](#) 2) no attributions

[Submit a comment](#)

Proposed Change 1760

Code Reference(s): NBC20 Div.B 5.9.1.1. (first printing)
Subject: Environmental Separation Table 5.9.1.1.
Title: Deletion of an Outdated CAN/CGSB Standard
Description: This proposed change deletes the reference to CAN/CGSB-51.32-M77, "Sheathing, Membrane, Breather Type," from Table 5.9.1.1.

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The standard CAN/CGSB-51.32-M77, "Sheathing, Membrane, Breather Type," which is currently referenced in Table 5.9.1.1. of the NBC, has not been updated since 1977 and was withdrawn in 2016.

Justification

At the mid-cycle review of updates to the standards currently referenced in Table 5.9.1.1., the Standing Committee on Environmental Separation determined that

- CAN/CGSB-51.32-M77 was withdrawn in June 2016,
- CAN/CGSB-51.32-M77 has limited use in practice, and
- Sections 5.4. to 5.6. of the NBC provide provisions and guidance on air, vapour and water control layers.

Therefore, the Standing Committee agreed to delete the reference to this withdrawn standard.

PROPOSED CHANGE

NBC20 Div.B 5.9.1.1. (first printing)

[\[5.9.1.1.\]](#) 5.9.1.1. Compliance with Applicable Standards

- [\[1\]](#) 1) Except as provided in Sentence (2) and elsewhere in this Part, materials and components, and their installation, shall conform to the requirements of the applicable standards in Table 5.9.1.1. where those materials or components are
- [a] a) incorporated into environmental separators or assemblies exposed to the exterior, and
- [b] b) installed to fulfill the requirements of this Part.
- (See Note A-5.9.1.1.(1).)
- [\[2\]](#) 2) The requirements for *flame-spread ratings* contained in thermal insulation standards shall be applied only as required in Part 3.

Table [\[5.9.1.1.\]](#) 5.9.1.1.

Standards Applicable to Environmental Separators and Assemblies Exposed to the Exterior
Forming Part of Sentence [\[5.9.1.1.\]](#) 5.9.1.1.([1] 1)

Issuing Agency	Document Number	Title of Document
ANSI	A135.6	Engineered Wood Siding
ASME	B18.6.1	Wood Screws (Inch Series)
ASTM	A123/A123M	Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products
ASTM	A153/A153M	Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware
ASTM	A653/A653M	Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
ASTM	C4	Standard Specification for Clay Drain Tile and Perforated Clay Drain Tile
ASTM	C73	Standard Specification for Calcium Silicate Brick (Sand-Lime Brick)
ASTM	C126	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units
ASTM	C212	Standard Specification for Structural Clay Facing Tile
ASTM	C412M	Standard Specification for Concrete Drain Tile
ASTM	C444M	Standard Specification for Perforated Concrete Pipe

Issuing Agency	Document Number	Title of Document
ASTM	C553	Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications
ASTM	C612	Standard Specification for Mineral Fiber Block and Board Thermal Insulation
ASTM	C700	Standard Specification for Vitrified Clay Pipe, Extra Strength, Standard Strength, and Perforated
ASTM	C726	Standard Specification for Mineral Wool Roof Insulation Board
ASTM	C834 ⁽¹⁾	Standard Specification for Latex Sealants
ASTM	C840	Standard Specification for Application and Finishing of Gypsum Board
ASTM	C920 ⁽¹⁾	Standard Specification for Elastomeric Joint Sealants
ASTM	C991	Standard Specification for Flexible Fibrous Glass Insulation for Metal Buildings
ASTM	C1002	Standard Specification for Steel Self-Piercing Tapping Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs
ASTM	C1177/C1177M	Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
ASTM	C1178/C1178M	Standard Specification for Coated Glass Mat Water-Resistant Gypsum Backing Panel
ASTM	C1184 ⁽¹⁾	Standard Specification for Structural Silicone Sealants
ASTM	C1280	Standard Specification for Application of Exterior Gypsum Panel Products for Use as Sheathing
ASTM	C1311 ⁽¹⁾	Standard Specification for Solvent Release Sealants
ASTM	C1330 ⁽¹⁾	Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants
ASTM	C1396/C1396M ⁽²⁾	Standard Specification for Gypsum Board
ASTM	C1658/C1658M ⁽³⁾	Standard Specification for Glass Mat Gypsum Panels
ASTM	D1227/D1227M	Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing
ASTM	D2178/D2178M	Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing
ASTM	D3019/D3019M ⁽⁴⁾	Standard Specification for Lap Cement Used with Asphalt Roll Roofing, Non-Fibered, and Fibered

Issuing Agency	Document Number	Title of Document
ASTM	D4479/D4479M	Standard Specification for Asphalt Roof Coatings – Asbestos-Free
ASTM	D4637/D4637M	Standard Specification for EPDM Sheet Used In Single-Ply Roof Membrane
ASTM	D4811/D4811M	Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing
ASTM	D6878/D6878M	Standard Specification for Thermoplastic Polyolefin Based Sheet Roofing
ASTM	E2190	Standard Specification for Insulating Glass Unit Performance and Evaluation
BNQ	BNQ 3624-115	Polyethylene (PE) Pipe and Fittings for Soil and Foundation Drainage
CGSB	CAN/CGSB-11.3-M	Hardboard
CGSB	CAN/CGSB-12.1	Safety Glazing
CGSB	CAN/CGSB-12.2-M	Flat, Clear Sheet Glass
CGSB	CAN/CGSB-12.3-M	Flat, Clear Float Glass
CGSB	CAN/CGSB-12.4-M	Heat Absorbing Glass
CGSB	CAN/CGSB-12.8	Insulating glass units
CGSB	CAN/CGSB-12.9	Spandrel glass
CGSB	37-GP-9Ma	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing
CGSB	CAN/CGSB-37.50-M	Hot-Applied, Rubberized Asphalt for Roofing and Waterproofing
CGSB	CAN/CGSB-37.54	Polyvinyl Chloride Roofing and Waterproofing Membrane
CGSB	CAN/CGSB-37.58-M	Membrane, Elastomeric, Cold-Applied Liquid, for Non-Exposed Use in Roofing and Waterproofing
CGSB	CAN/CGSB-41.24	Rigid Vinyl Siding, Soffits and Fascia
CGSB	CAN/CGSB-51.32-M	Sheathing, Membrane, Breather Type
CGSB	CAN/CGSB-51.33-M	Vapour Barrier Sheet, Excluding Polyethylene, for Use in Building Construction
CGSB	CAN/CGSB-51.34-M	Vapour Barrier, Polyethylene Sheet for Use in Building Construction

Issuing Agency	Document Number	Title of Document
CGSB	CAN/CGSB-93.1-M	Sheet, Aluminum Alloy, Prefinished, Residential
CGSB	CAN/CGSB-93.2-M	Prefinished Aluminum Siding, Soffits, and Fascia, for Residential Use
CSA	A23.1	Concrete materials and methods of concrete construction
CSA	CAN/CSA-A82	Fired masonry brick made from clay or shale
CSA	CAN3-A93-M	Natural Airflow Ventilators for Buildings
CSA	CAN/CSA-A123.2	Asphalt-Coated Roofing Sheets
CSA	A123.3	Asphalt Saturated Organic Roofing Felt
CSA	CAN/CSA-A123.4	Asphalt for Constructing Built-Up Roof Coverings and Waterproofing Systems
CSA	A123.5	Asphalt shingles made from glass felt and surfaced with mineral granules
CSA	CAN/CSA-A123.16	Asphalt-coated glass-base sheets
CSA	A123.17	Asphalt Glass Felt Used in Roofing and Waterproofing
CSA	A123.23	Product specification for polymer-modified bitumen sheet, prefabricated and reinforced
CSA	A123.51	Asphalt shingle application on roof slopes 1:6 and steeper
CSA	A165.1	Concrete block masonry units
CSA	A165.2	Concrete brick masonry units
CSA	A165.3	Prefaced concrete masonry units
CSA	CAN/CSA-A179	Mortar and Grout for Unit Masonry
CSA	CAN/CSA-A220 Series	Concrete Roof Tiles
CSA	CAN/CSA-A371	Masonry Construction for Buildings
CSA	A3001	Cementitious Materials for Use in Concrete
CSA	B182.1	Plastic drain and sewer pipe and pipe fittings
CSA	G40.21	Structural quality steel
CSA	CAN/CSA-G401	Corrugated steel pipe products
CSA	CAN/CSA-O80 Series	Wood preservation
CSA	O118.1	Western Red Cedar Shakes and Shingles

Issuing Agency	Document Number	Title of Document
CSA	O118.2	Eastern White Cedar Shingles
CSA	O121	Douglas fir plywood
CSA	O141	Softwood Lumber
CSA	O151	Canadian softwood plywood
CSA	O153	Poplar plywood
CSA	O325	Construction sheathing
CSA	O437.0	OSB and Waferboard
HPVA	ANSI/HPVA HP-1	American National Standard for Hardwood and Decorative Plywood
ULC	CAN/ULC-S701.1	Standard for Thermal Insulation, Polystyrene Boards
ULC	CAN/ULC-S702.1	Standard for Mineral Fibre Thermal Insulation for Buildings, Part 1: Material Specification
ULC	CAN/ULC-S703	Standard for Cellulose Fibre Insulation (CFI) for Buildings
ULC	CAN/ULC-S704.1	Standard for Thermal Insulation, Polyurethane and Polyisocyanurate, Boards, Faced
ULC	CAN/ULC-S705.1	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Material Specification
ULC	CAN/ULC-S705.2	Standard for Thermal Insulation – Spray Applied Rigid Polyurethane Foam, Medium Density – Application
ULC	CAN/ULC-S706.1	Standard for Wood Fibre Insulating Boards for Buildings
ULC	CAN/ULC-S710.1	Standard for Bead-Applied One Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S711.1	Standard for Bead-Applied Two Component Polyurethane Air Sealant Foam, Part 1: Material Specification
ULC	CAN/ULC-S717.1	Standard for Flat Wall Insulating Concrete Form (ICF) Units – Material Properties

Notes to Table [\[5.9.1.1.\]](#) 5.9.1.1.:

- (1) See Note A-Table 5.9.1.1.
 - (2) The *flame-spread rating* of gypsum board shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1396/C1396M.
-

-
- (3) The *flame-spread rating* of gypsum panels shall be determined in accordance with CAN/ULC-S102, in lieu of ASTM E84 as indicated in ASTM C1658/C1658M.
- (4) For the purpose of compliance with Part 5, ASTM D3019/D3019M shall only apply to the non-fibered and non-asbestos-fibered types of asphalt roll roofing.
-

Impact analysis

None. The standard has not been adhered to in practice.

Enforcement implications

None. The standard has not been adhered to in practice.

Who is affected

Designers, specifiers, manufacturers, building owners, building officials and contractors.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 5.9.1.1. (first printing)

- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1)
[F20,F22,F51,F54,F55,F61,F63,F80-OH1.1,OH1.2] [F41,F55-OH1.1] [F55,F61,F80-OH1.3]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1)
[F20,F80-OS2.1] [F20,F22,F51,F61,F63,F80-OS2.3] [F51-OS2.5]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20-OS2.2] [F80-OS2.3]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OS3.1]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F80,F61,F63-OH4]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) ([\[a\]](#) a) [F61,F63-OS1.4]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F20,F80-OP2.1,OP2.3] [F22,F80-OP2.4]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[1\]](#) 1) [F42-OH2.5]
- [\[5.9.1.1.\]](#) 5.9.1.1. ([\[2\]](#) 2) no attributions

[Submit a comment](#)

Proposed Change 1756

Code Reference(s): NBC20 Div.B 5.9.2. (first printing)
NBC20 Div.B 5.9.3. (first printing)

Subject: Other Fenestrations

Title: Clarifying Requirements for Fenestration Assemblies

Description: This proposed change eliminates the duplication of requirements in Subsections 5.9.2. and 5.9.3. and provides guidance for the assessment of condensation in other fenestration assemblies.

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

- 1) The duplication of references to Article 5.1.4.1., Section 5.4. and Section 5.6. in both Subsections 5.9.2. and 5.9.3. is creating confusion among Code users as to the performance requirements of fenestration products.
- 2) Explanatory Note A-5.9.3.3.(1) currently refers to AAMA 501.5, "Test Method for Thermal Cycling of Exterior Walls," as a means of condensation evaluation of other fenestration assemblies. However, in 2019, AAMA developed a specific standard to address this issue: AAMA 501.9 : 2019, "Surface Temperature Assessment for Condensation Evaluation of Exterior Wall Systems." Therefore, the reference to AAMA 501.5 should be replaced with a reference to AAMA 501.9 : 2019 in explanatory Note A-5.9.3.3.(1). In addition, the proposed change adds a reference to AAMA 501.7 : 2017 in explanatory Note A-5.9.3. as it was overlooked when the original requirements were included in the NBC.

Justification

- 1) The proposed modifications and additions are needed to clarify the Code requirements that address all fenestration products and systems. The proposed change eliminates the ambiguity presented by the duplication of requirements in Subsections 5.9.2. and 5.9.3., which could lead to the improper determination of performance requirements for Code compliance.
- 2) The proposed change also updates the Code to the current practice for heat transfer requirements with respect to fenestration systems by introducing a new standard specific to the assessment of surface temperature for condensation evaluation of exterior wall systems.
- 3) AAMA 501.7 : 2017 compliments AAMA 501.4.

PROPOSED CHANGE

NBC20 Div.B 5.9.2. (first printing)

[5.9.2.] 5.9.2. Windows, Doors and Skylights

[5.9.2.1.] 5.9.2.1. General

[5.9.2.2.] 5.9.2.2. Applicable Standards

[5.9.2.3.] 5.9.2.3. Structural and Environmental Loads, Air Leakage and Water Penetration

[1] 1) Windows, doors, skylights and their components shall be designed and constructed in accordance with

~~[a] a) Article 5.1.4.1., Section 5.4. and Section 5.6., where they are not covered in the scope of the standards listed in Sentence 5.9.2.2.(1), or~~

[b] b) Article 5.9.2.2., where they are covered in the scope of the standards listed in Sentence 5.9.2.2.(1), ~~or~~

[c] --) Subsection 5.9.3, where they are not covered in the scope of the standards listed in Sentence 5.9.2.2.(1).

(See Note A-5.9.2.3.(1).)

[5.9.2.4.] 5.9.2.4. Heat Transfer

NBC20 Div.B 5.9.3. (first printing)

[5.9.3.] 5.9.3. Other Fenestration Assemblies

(See Note A-5.9.3.)

[5.9.3.1.] 5.9.3.1. General

- [1] 1) For the purpose of this Subsection, the term "other fenestration assemblies" refers to curtain walls, ~~window walls~~, storefronts, ~~and~~ glazed architectural structures, other glazing assemblies not covered in the scope of the standards listed in Sentence 5.9.2.2.(1), and window walls. (See Note A-5.9.3.1.(1).)

[5.9.3.2.] 5.9.3.2. Structural and Environmental Loads[5.9.3.3.] 5.9.3.3. Heat Transfer

- [1] 1) Other fenestration assemblies and their components shall meet the heat transfer performance requirements stated in Section 5.3. (See Note A-5.9.3.3.(1).)
- [2] 2) Except as provided in Sentence (3), ~~Other~~ other fenestration assemblies using metal framing that separate interior *conditioned space* from interior unconditioned space or exterior space shall incorporate a thermal break to minimize condensation.
- ~~[3] --) Other fenestration assemblies using metal framing that are required to have a fire-protection rating need not comply with Sentence (2). (See Note A-5.9.3.3.(3).)~~

[5.9.3.4.] 5.9.3.4. Air Leakage

- [1] 1) Other fenestration assemblies and their components shall be designed and constructed in accordance with Section 5.4.
- [2] 2) Except as provided in Sentence (3), other fenestration assemblies and their components shall have an air leakage characteristic, measured at an air pressure difference of 75 Pa, when tested in accordance with ASTM E283, "Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen", that is not greater than
- [a] a) 0.2 L/(s×m²) for fixed portions, including any opaque portions, and
 - [b] b) 1.5 L/(s×m²) for operable portions.
- (See Note A-5.9.3.4.(2).)
- [3] 3) The following systems need not comply with Sentence (2):
- [a] a) interior windows and interior doors that do not serve as environmental separators,
 - [b] b) doors used for vehicular access ~~doors (garage doors)~~,
 - [c] c) storm windows and storm doors,
 - [d] d) commercial entrance systems,
 - [e] e) revolving doors,
 - [f] f) smoke and relief air vents,

- [g] g) site-built door systems, and
 - [h] h) commercial steel doors.
- (See Note A-5.9.3.4.(3).)

[5.9.3.5.] 5.9.3.5. Water Penetration

- [1] 1) Other fenestration assemblies and their components shall be designed and constructed in accordance with Section 5.6.
- [2] 2) Except as provided in Sentence (4), other fenestration assemblies and their components not covered in Article 5.9.2.2. shall resist water penetration when tested in accordance with
 - [a] a) ASTM E331, "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference", or
 - [b] b) ASTM E547, "Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Cyclic Static Air Pressure Difference".

(See Note A-5.9.3.5.(2).)
- [3] 3) Tests referred to in Sentence (2) shall be carried out at the driving rain wind pressure as calculated in accordance with CSA A440S1, "Canadian Supplement to AAMA/WDMA/CSA 101/I.S.2/A440-17, North American Fenestration Standard/Specification for windows, doors, and skylights".
(See Note A-5.9.3.5.(3).)
- [4] 4) The following systems need not comply with Sentence (2):
 - [a] a) interior windows and interior doors,
 - [b] b) doors used for vehicular access ~~doors (garage doors)~~,
 - [c] c) storm windows and storm doors,
 - [d] d) commercial entrance systems,
 - [e] e) revolving doors,
 - [f] f) smoke and relief air vents,
 - [g] g) site-built door systems, and
 - [h] h) commercial steel doors.

(See Note A-5.9.3.5.(4).)

Note A-5.9.3. Testing Standards for Other Fenestration Assemblies.

Subsection 5.9.3. references ASTM test methods. The following AAMA standards can also be used to evaluate the performance characteristics of other fenestration assemblies:

- AAMA 501, "Methods of Test for Exterior Walls",
- AAMA 501.1, "Standard Test Method for Water Penetration of Windows, Curtain Walls and Doors Using Dynamic Pressure",

- AAMA 501.2, "Quality Assurance and Diagnostic Water Leakage Field Check of Installed Storefronts, Curtain Walls, and Sloped Glazing Systems",
- AAMA 501.4, "Recommended Static Test Method for Evaluating Curtain Wall and Storefront Systems Subjected to Seismic and Wind-Induced Inter-Story Drifts",
- AAMA 501.5, "Test Method for Thermal Cycling of Exterior Walls", ~~and~~
- AAMA 501.6, "Recommended Dynamic Test Method for Determining the Seismic Drift Causing Glass Fallout from a Wall System",
- [AAMA 501.7 : 2017, "Recommended Static Test Method for Evaluating Windows, Window Wall, Curtain Wall and Storefront Systems Subjected to Vertical Inter-Story Movements," and](#)
- [AAMA 501.9 : 2019, "Surface Temperature Assessment for Condensation Evaluation of Exterior Wall Systems."](#)

Note A-5.9.3.3.(1) Resistance to Condensation.

Notwithstanding that other fenestration assemblies are not fully covered under the testing scope of CSA A440.2, "Fenestration energy performance", the test method described therein can be used to evaluate their resistance to condensation, with technical modifications to accommodate differences in the size and configuration of the specimen. ~~It is also common practice to use one cold cycle of AAMA 501.5, "Test Method for Thermal Cycling of Exterior Walls",~~ [AAMA 501.9 : 2019, "Surface Temperature Assessment for Condensation Evaluation of Exterior Wall Systems,"](#) can also be used to assess the potential for condensation. Both methods can be used for mock-ups in laboratory performance evaluations, however, only the test method in CSA A440.2 should be used if a Temperature Index is required. In most cases, the project specification documents establish the hygrothermal conditions (i.e., exterior temperature, interior temperature, interior relative humidity) for which the potential for condensation should be minimized. Under these conditions, the aforementioned test methods can be used to aid in the selection of the appropriate system performance to minimize the potential for interior surface condensation. In all cases, care should be taken in the construction and configuration of the specimen, as these parameters may have an impact on its thermal performance and resistance to condensation. These parameters may include, without limitation, interior wall construction and finishes, heating systems, ventilation systems, etc., to simulate the actual in-service conditions as closely as practicable.

Note A-5.9.3.3.(3) Heat Transfer through Fire-Rated Glazed Assemblies.

Thermal bridging through fire-rated glazed assemblies should not be ignored; measures should be taken to minimize condensation consistent with the intent of Sentence 5.9.3.3.(2).

Impact analysis

This proposed change provides clarifications and references to the proper standards for guidance.

Enforcement implications

This proposed change can be enforced by existing means and resources involved in the acceptance and verification of fenestration products.

This proposed change is expected to make enforcement easier as it would eliminate the duplication of requirements and provide up-to-date guidance on condensation assessment of other fenestrations.

Who is affected

Designers and specification writers will be positively impacted as the proposed changes eliminate duplication and clarify the available standards related to other fenestrations.

Manufacturers will be positively impacted as the proposed changes clarify the requirements.

Building officials will be positively impacted as the proposed changes make enforcement easier by eliminating the duplication of requirements and providing up-to-date guidance on condensation assessment of other fenestrations.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 5.9.2. (first printing)

[\[5.9.2.1.\]](#) 5.9.2.1. ([\[1\]](#) 1) no attributions

[\[5.9.2.1.\]](#) 5.9.2.1. ([\[2\]](#) 2) no attributions

[\[5.9.2.1.\]](#) 5.9.2.1. ([\[3\]](#) 3) no attributions

[\[5.9.2.2.\]](#) 5.9.2.2. ([\[1\]](#) 1)

[F20,F55,F61,F63-OH1.1,OH1.3] [F20,F55,F61,F63,F81-OH1.2]

[\[5.9.2.2.\]](#) 5.9.2.2. ([\[1\]](#) 1) [F20,F55,F61-OS2.3]

[\[5.9.2.2.\]](#) 5.9.2.2. ([\[1\]](#) 1) [F20,F55,F61-OP2.3]

[5.9.2.2.] 5.9.2.2. ([2] 2) no attributions

[5.9.2.2.] 5.9.2.2. ([3] 3) no attributions

[5.9.2.3.] 5.9.2.3. ([1] 1) no attributions

[5.9.2.4.] 5.9.2.4. ([1] 1) no attributions

[5.9.2.4.] 5.9.2.4. ([2] 2) [F63-OH1.1,OH1.2]

[5.9.2.4.] 5.9.2.4. ([2] 2) [F63-OS2.3]

[5.9.2.4.] 5.9.2.4. ([3] 3) no attributions

NBC20 Div.B 5.9.3. (first printing)

[5.9.3.1.] 5.9.3.1. ([1] 1) no attributions

[5.9.3.2.] 5.9.3.2. ([1] 1) no attributions

[5.9.3.3.] 5.9.3.3. ([1] 1) no attributions

[5.9.3.3.] 5.9.3.3. ([2] 2) [F63-OH1.1,OH1.2]

[5.9.3.3.] 5.9.3.3. ([2] 2) [F63-OS2.3]

-- (--) no attributions

[5.9.3.4.] 5.9.3.4. ([1] 1) no attributions

[5.9.3.4.] 5.9.3.4. ([2] 2) [F55,F63-OH1.1,OH1.2,OH1.3]

[5.9.3.4.] 5.9.3.4. ([2] 2) [F55,F63-OS2.3]

[5.9.3.4.] 5.9.3.4. ([2] 2) [F55-OS1.4]

[5.9.3.4.] 5.9.3.4. ([3] 3) no attributions

[5.9.3.5.] 5.9.3.5. ([1] 1) no attributions

[5.9.3.5.] 5.9.3.5. ([2] 2) [F61-OH1.1,OH1.2,OH1.3]

[5.9.3.5.] 5.9.3.5. ([2] 2) [F61-OS2.3]

[5.9.3.5.] 5.9.3.5. ([3] 3) no attributions

[5.9.3.5.] 5.9.3.5. ([4] 4) no attributions

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Proposed Change 1757

Code Reference(s): NBC20 Div.B 5.9.2.3. (first printing)
Subject: Fenestration
Title: Installation of High Exposure Fenestration
Description: This proposed change adds CSA A440.6:2020, "High exposure fenestration installation," to explanatory Note A-5.9.2.3.(1).

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

It is common knowledge that the lack of a proper standard for fenestration installation on buildings covered in the scope of Part 5, Environmental Separation, often results in failures related to, but not limited to, airtightness, water penetration and heat transfer.

When CAN/CSA-A440.4, "Window, door, and skylight installation," which is referenced in Part 9, Housing and Small Buildings, was reviewed for inclusion in Part 5 of the NBC 2010, it was found to be not suitable for use in Part 5 buildings. For this reason, it was decided to reference it in an explanatory note only for further guidance directed towards informed users.

Justification

A new standard, CSA A440.6, "High exposure fenestration installation," was published in 2020 and, as the scope of this standard refers to Part 5 buildings, it is clearly applicable to the installation of fenestration systems in environmental separators and assemblies exposed to the exterior.

Referencing this standard in explanatory Note A-5.9.2.3.(1) will provide Code users with guidance on the applicable standard for the installation of fenestration systems and components on Part 5 buildings.

As some Part 9 buildings may be designed and constructed in conformance with Part 5, the reference to CAN/CSA-A440.4, "Window, door, and skylight installation," is being retained in explanatory Note A-5.9.2.3.(1).

PROPOSED CHANGE

NBC20 Div.B 5.9.2.3. (first printing)

[\[5.9.2.3.\]](#) 5.9.2.3. Structural and Environmental Loads, Air Leakage and Water Penetration

Note A-5.9.2.3.(1) Installation and Field Testing of Windows, Doors and Skylights.
Installation

The installation details of windows, doors, skylights and their components must be appropriately designed and implemented for the building envelope assembly to perform acceptably overall. The proper design of the installation details provides the information necessary to integrate the structure and air, vapour and moisture barrier functions of windows, doors and skylights into the overall design of the building envelope assembly. Construction should be carried out in accordance with these details to achieve an appropriate level of long-term performance. Further guidance on installation detailing can be found in CSA A440.4, "Window, door, and skylight installation", [and CSA A440.6:2020, "High exposure fenestration installation."](#)

Field Testing

It is recommended that the performance of installed windows, doors and skylights be field tested early in the envelope construction phase so that any discontinuities can be readily identified and corrected before construction of the building envelope assembly is completed. Additional field testing during subsequent construction phases to monitor installation consistency is also recommended. Field test procedures should be carried out in accordance with test standards such as ASTM E783, "Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors", and ASTM E1105, "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". ~~Further guidance can be found in CSA A440.4, "Window, door, and skylight installation", which also includes performance requirements developed in accordance with AAMA/WDMA/CSA 101/I.S.2/A440, "North American Fenestration Standard/Specification for windows, doors, and skylights", to be used when performing field testing.~~

Impact analysis

CSA A440.6 is referenced in explanatory Note A-5.9.2.3.(1) for guidance. However, its implementation should actually

- reduce costs related to the consequences of failures and the implementation of corrective measures, and
- provide a level playing field for stakeholders involved in the industry.

Enforcement implications

CSA A440.6 is referenced in explanatory Note A-5.9.2.3.(1) for guidance. Nevertheless, its enforcement could be achieved by existing means and resources involved in the acceptance and verification of fenestration products.

Who is affected

Though CSA A440.6 is referenced in explanatory Note A-5.9.2.3.(1) for guidance, it has been used in practice and included in specifications. Thus:

- Designers and specification writers will be positively impacted as they will be using products that meet the same level of performance. Specifically, the procedures in the standard will allow for consistency in specification writing and offer a certain freedom and/or more flexibility for more experienced professionals.
- Manufacturers will be positively impacted as the standard will provide a level playing field to stakeholders involved in the industry and increase confidence in their products as consistency is achieved.
- Contractors will be responsible for the installation of the fenestration products. This includes, but is not limited to, delivery of the product to the building, installation by subcontractors and integration of the fenestration products with existing environmental separators.

- Building owners will be assured that they are obtaining good products, which includes proper installation for durability and longevity.
- Building officials will be seeking required sign-off that the fenestration products meet the Code requirements, including all applicable standards.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 5.9.2.3. (first printing)

[\[5.9.2.3.\]](#) 5.9.2.3. ([\[1\]](#) 1) no attributions

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Proposed Change 1755

Code Reference(s): NBC20 Div.B 5.9.4. (first printing)
Subject: EIFS
Title: EIFS Installation Requirements
Description: This proposed change introduces a reference to CAN/ULC-S716.2:2019, which addresses the installation of EIFS and is currently referenced in an explanatory note, into the body of the Code.
Related Code Change Request(s): CCR 1489

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The EIFS installation standard CAN/ULC-S716.2:2019 is currently referenced in an explanatory note though it is indirectly normative via its reference within CAN/ULC-S716.1, which is referenced in the body of the Code. This may cause confusion regarding the applicability of CAN/ULC-S716.2:2019.

Further, the EIFS requirements contained in CAN/ULC-S716.2:2019, but not in CAN/ULC-S716.1, may be overlooked during the design and construction of EIFS. These include, for example, the minimum insulation thickness, which is vital to construction tolerances, the increasing prevalence of geometrically profiled insulation, and the suggested minimum installation requirements around mechanical fastener use for adhering the insulation to the substrate.

Justification

The CAN/ULC-S716.2:2019 standard is already a normative reference within the CAN/ULC-S716.1 standard, which is referenced in the body of the Code.

In the previous Code cycle, when the EIFS installation standard CAN/ULC-S716.2 was first proposed for referencing, there were two major objections to including a reference to it in the body of the Code:

- 1) the previous edition of the standard specifically excluded the use of mineral fibre insulation, and
- 2) the previous edition of the standard did not allow for mechanical fastening of insulation, regardless of the type of insulation used.

Consequently, it was felt that referencing the standard in the Code would unduly limit designers' options, and so the decision was made to reference this previous edition of the installation standard within an explanatory note.

These two issues have now been addressed within a normative annex in the latest edition of the standard. Introducing a reference to CAN/ULC-S716.2:2019 in the body of the Code and referring to it as a companion to CAN/ULC-S716.1 does not limit designers' choices. Furthermore, the two standards are meant to be used together in a holistic manner to ensure that the materials are installed within the system as intended.

PROPOSED CHANGE

NBC20 Div.B 5.9.4. (first printing)

[5.9.4.] 5.9.4. Exterior Insulation Finish Systems

[5.9.4.1.] 5.9.4.1. Structural Loads, Heat Transfer, Air Leakage, Vapour Diffusion and Water Penetration

- [1]** 1) Exterior insulation finish systems and their components shall comply with
- [a] a) Subsection 5.1.4. and Sections 5.3. to 5.6., and
 - [b] b) CAN/ULC-S716.1, "Standard for Exterior Insulation and Finish Systems (EIFS) - Materials and Systems", and CAN/ULC-S716.2:2019, "Standard for Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier," where covered in the scope of ~~that standard~~ CAN/ULC-S716.1.

(See Note A-5.9.4.1.(1).)

Note A-5.9.4.1.(1) Exterior Insulation Finish Systems (EIFS).

The references in Clause 5.9.4.1.(1)(b) to the two companion standards—CAN/ULC-S716.1, "Standard for Exterior Insulation and Finish Systems (EIFS) - Materials and Systems", and CAN/ULC-S716.2:2019, "Standard for Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier"—in Clause 5.9.4.1.(1)(b) does not preclude the use of other component materials that may also meet the intent of the Code. For example, using ~~mineral-fibre insulation in lieu of other rigid insulation types, mechanical fastening methods for the insulation component in lieu of adhesive, or~~ a type of water-resistive barrier other than a liquid-applied water-resistive barrier or building up layers of various types of rigid insulation to increase the thermal value could be acceptable.

The ~~following two additional~~ companion standards CAN/ULC-S716.3, "Standard for Exterior Insulation and Finish System (EIFS) - Design Application," facilitates the application of and conformance with CAN/ULC-S716.1 and CAN/ULC-S716.2:2019.

- ~~• CAN/ULC-S716.2, "Standard for Exterior Insulation and Finish Systems (EIFS) - Installation of EIFS Components and Water Resistive Barrier", and~~
- ~~• CAN/ULC-S716.3, "Standard for Exterior Insulation and Finish System (EIFS) - Design Application".~~

Additional information on EIFS design and installation can be found in the EIFS Council of Canada's "EIFS Practice Manual" and the manufacturer's literature.

EIFS Selection

CAN/ULC-S716.1 provides the minimum performance criteria for EIFS materials and systems that are tested under specific laboratory test protocols identified in the standard. However, compliance with this standard does not ensure that a system is appropriate for all projects. When selecting an EIFS product, designers should consider all relevant criteria—not only those covered by the tests in CAN/ULC-S716.1—including, but not limited to,

- building exposure
- local climate characteristics (wind, precipitation, temperature variations, solar exposure)
- intended building use
- intended resistance to damage and deterioration
- construction tolerances
- constructability
- seasonal issues (winter construction in certain climate zones)
- condition or suitability of the substrate in repair or renovation applications

Impact analysis

None. The installation standard CAN/ULC-S716.2:2019 is already normative in CAN/ULC-S716.1, which is currently referenced in the body of the Code.

Enforcement implications

This proposed change can be enforced by existing means and resources involved in the acceptance and verification of EIFS products. Clarifying that following the EIFS installation standard constitutes a means of compliance should facilitate enforcement.

Who is affected

Designers, specification writers, manufacturers, contractors, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 5.9.4. (first printing)

[5.9.4.1.] 5.9.4.1. ([1] 1) no attributions

[5.9.4.1.] 5.9.4.1. ([1] 1) ([b] b) [F61,F62-OH1.1,OH1.2,OH1.3]

[5.9.4.1.] 5.9.4.1. ([1] 1) ([b] b) [F61,F62-OS2.3]

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Proposed Change 1679

Code Reference(s):	NBC20 Div.B 9.10.1.3.(1) (first printing)
Subject:	Other
Title:	Clarification of Fire-protection Requirements for Self-service Storage Buildings
Description:	This proposed change introduces "self-service storage buildings" to Sentence 9.10.1.3.(1) to clarify that the applicable fire-protection requirements are specified in NBC 2020, Division B, Part 3.
Related Code Change Request(s):	CCR 1319

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input checked="" type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The fire-protection requirements for self-service storage buildings are specified in NBC 2020, Division B, Part 3. Section 3.9. applies to self-service storage buildings, which are buildings that are open to the public for the sole purpose of providing individual self-service storage units, including those that are classified as Part 9 buildings.

NBC 2020, Division B, Section 9.10. provides the fire-protection requirements for Part 9 buildings. Article 9.10.1.3. lists the items that are subject to the requirements of Part 3. Although self-service storage buildings must meet the fire-protection requirements of Part 3, these buildings are not currently listed in Article 9.10.1.3. Therefore, an explicit reference to these buildings is required in Sentence 9.10.1.3.(1).

Justification

Adding “self-service storage buildings” to the list of items under Part 3 jurisdiction in Sentence 9.10.1.3.(1) would provide clarity for building owners, designers and builders when meeting the fire-protection requirements for these types of buildings. Other special structures, such as tents, air-supported structures and transformer vaults, are explicitly referenced as falling under Part 3 in Sentence 9.10.1.3.(1).

If a designer or builder were unaware that the fire-protection requirements for self-service storage buildings are provided in Section 3.9., the structure might not be constructed with adequate fire protection, which could lead to an unacceptable level of risk of injury to occupants or damage to property due to fire.

EXISTING PROVISION

9.10.1.3. Items under Part 3 Jurisdiction

- 1) Tents, *air-supported structures*, transformer vaults, *walkways*, elevators and escalators shall conform to Part 3.
- 2) Where rooms or spaces are intended for an *assembly occupancy*, such rooms or spaces shall conform to Part 3.
- 3) *Basements* containing more than 1 *storey* or exceeding 600 m² in area shall conform to Part 3.
- 4) Where rooms or spaces are intended for the storage, manufacture or use of hazardous or explosive material, such rooms or spaces shall conform to Part 3. (See Note A-3.3.1.2.(1).)
- 5) Except as provided in Article 3.3.5.8., facilities for the dispensing of fuel shall not be installed in any *building*.
- 6) Openings through floors that are not protected by shafts or *closures* shall be protected in conformance with Subsection 3.2.8. (See also Sentence 9.9.4.7.(1).)
- 7) Chutes and shafts shall conform to Subsection 3.6.3. except where they are entirely contained within a *dwelling unit*.
- 8) Sprinkler systems shall be designed, constructed and installed in conformance with Articles 3.2.5.12. to 3.2.5.15. and 3.2.5.17.
- 9) Standpipe and hose systems shall be designed, constructed and installed in conformance with Articles 3.2.5.8. to 3.2.5.11. and 3.2.5.17.

- 10) Fire pumps shall be installed in conformance with Articles 3.2.5.17. and 3.2.5.18.
- 11) Where fuel-fired *appliances* are installed on a roof, such *appliances* shall be installed in conformance with Article 3.6.1.5.

PROPOSED CHANGE

[\[9.10.1.3.\]](#) 9.10.1.3. Items under Part 3 Jurisdiction

- [\[1\]](#) 1) Tents, *air-supported structures*, [self-service storage buildings](#), transformer vaults, *walkways*, elevators and escalators shall conform to Part 3.

Impact analysis

Costs

As self-service storage buildings must currently meet the requirements of Section 3.9., no new incremental costs would be incurred as a result of this proposed change, which merely clarifies that the fire-protection requirements for self-service storage buildings are in Part 3 by providing a signpost to that Part in Article 9.10.1.3.

Benefits

The benefit of this proposed change is that it clarifies that the fire-protection requirements for self-service storage buildings are contained in Part 3, which would reduce confusion for builders and designers when constructing this type of building. Cost savings are also possible if the requirements were not previously met and corrections were needed after construction to pass inspection. A clarification of the requirements could also reduce delays when applying for a building permit.

Enforcement implications

A clarification of the fire-protection requirements for self-service storage buildings would make enforcement easier, as there would be no confusion as to whether Part 3 or Part 9 requirements for fire protection apply.

Who is affected

Builders, building owners, design professionals and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[9.10.1.3.\]](#) 9.10.1.3. ([\[1\]](#) 1) no attributions

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Proposed Change 1677

Code Reference(s):	NBC20 Div.B Table 9.23.10.1. (first printing)
Subject:	Structural Design (Part 9)
Title:	Clarification of 38 mm × 140 mm Stud Usage
Description:	This proposed change revises Table 9.23.10.1. to clarify that 38 mm × 140 mm studs spaced at 400 mm can be used in exterior walls when only supporting a roof or a roof plus one floor.
Related Code Change Request(s):	CCR 1302

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input checked="" type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

NBC Table 9.23.10.1. provides the minimum stud sizes, maximum stud spacing and maximum unsupported stud heights permitted in walls that support a roof based on the number of supported floors. Generally, when the number of floors supported by a wall increases, the minimum stud size increases, the maximum stud spacing decreases or the maximum stud height decreases.

To meet energy requirements, exterior walls of light-frame wood construction are commonly built with 2 in. × 6 in. (38 mm × 140 mm) wood studs spaced at 16 in. (400 mm) o.c.

Table 9.23.10.1. currently allows exterior walls with 38 mm × 140 mm studs spaced at 400 mm o.c. with a maximum unsupported height of 3.6 m to support a roof (with or without attic storage) plus two floors. This configuration is commonly used in three-storey buildings.

However, Table 9.23.10.1. does not specifically address the use of 38 mm × 140 mm studs spaced at 400 mm o.c. for exterior walls that only support a roof or a roof plus one floor. This configuration is commonly used in one- or two-storey Part 9 dwelling units or small commercial buildings.

Table 9.23.10.1. currently lacks clarity about whether or not this common stud size and spacing may be used where it will only support a roof or a roof plus one floor. It might be assumed that the stud size and spacing that is appropriate for two floors also applies where it supports only a roof or a roof plus one floor. Or the provision might be interpreted to require a smaller stud or greater spacing, or an engineered solution.

This proposed change would clarify that 38 mm × 140 mm studs spaced at 400 mm o.c. may be used in an exterior wall to support a roof plus up to three floors with a maximum height of 3.6 m as an acceptable prescriptive solution.

Justification

Table 9.23.10.1. currently allows 38 mm × 140 mm studs spaced at 400 mm o.c. for heights up to 3.6 m to support a roof plus two floors. Using engineering analysis, one would expect this same stud size, spacing and maximum unsupported height to also be applicable in cases with fewer supported floors.

This proposed change would clarify that 38 mm × 140 mm studs spaced at 400 mm o.c. in an exterior wall may be used to support a roof plus up to three floors with a maximum height of 3.6 m as an acceptable prescriptive solution.

Even if authorities having jurisdiction commonly accept 38 mm × 140 mm studs spaced at 400 mm o.c. for housing applications, there may be some uncertainty when applying the requirements for wall studs to other small buildings with fewer than two storeys. By clarifying the application of Table 9.23.10.1., this proposed change would eliminate uncertainty when designing exterior walls for Part 9 buildings.

Explicitly permitting the use of 38 mm × 140 mm studs spaced at 400 mm o.c. to support fewer than two floors would provide options for designers to meet energy requirements and provide clarity for authorities having jurisdiction when enforcing the Code. The proposed change would prevent the necessity for an engineered solution when using 38 mm × 140 mm studs spaced at 400 mm o.c. in an exterior wall.

EXISTING PROVISION

9.23.10.1. Stud Size and Spacing

- 1) The size and spacing of studs shall conform to Table 9.23.10.1.

Table 9.23.10.1.
Size and Spacing of Studs
Forming Part of Sentence 9.23.10.1.(1)

Type of Wall	Supported Loads (including <i>dead loads</i>)	Minimum Stud Size, mm	Maximum Stud Spacing, mm	Maximum Unsupported Height, m
Interior	No load	38 × 38	400	2.4
		38 × 89 flat (1)	400	3.6
	Attic not accessible by a stairway	38 × 64	600	3.0
		38 × 64 flat (1)	400	2.4
		38 × 89	600	3.6
		38 × 89 flat (1)	400	2.4
	Attic accessible by a stairway plus one floor Roof load plus one floor Attic not accessible by stairway plus 2 floors	38 × 89	400	3.6
	Roof load Attic accessible by a stairway Attic not accessible by a stairway plus one floor	38 × 64	400	2.4
		38 × 89	600	3.6
	Attic accessible by a stairway plus 2 floors Roof load plus 2 floors	38 × 89	300	3.6
		64 × 89	400	3.6
		38 × 140	400	4.2

Type of Wall	Supported Loads (including <i>dead loads</i>)	Minimum Stud Size, mm	Maximum Stud Spacing, mm	Maximum Unsupported Height, m
	Attic accessible by a stairway plus 3 floors Roof load plus 3 floors	38 × 140	300	4.2
Exterior	Roof with or without attic storage	38 × 64	400	2.4
		38 × 89	600	3.0
	Roof with or without attic storage plus one floor	38 × 89	400	3.0
		38 × 140	600	3.0
	Roof with or without attic storage plus 2 floors	38 × 89	300	3.0
		64 × 89	400	3.0
		38 × 140	400	3.6
	Roof with or without attic storage plus 3 floors	38 × 140	300	1.8

Note to Table 9.23.10.1.:

(1) See Article 9.23.10.3.

PROPOSED CHANGE

Table [\[9.23.10.1.\]](#) 9.23.10.1.
Size and Spacing of Studs
Forming Part of Sentence 9.23.10.1.(1)

Type of Wall	Supported Loads (including <i>dead loads</i>)	Minimum Stud Size, mm	Maximum Stud Spacing, mm	Maximum Unsupported Height, m
Interior	No load	38 × 38	400	2.4
		38 × 89 flat (1)	400	3.6

Type of Wall	Supported Loads (including <i>dead loads</i>)	Minimum Stud Size, mm	Maximum Stud Spacing, mm	Maximum Unsupported Height, m	
	Attic not accessible by a stairway	38 × 64	600	3.0	
		38 × 64 flat (1)	400	2.4	
		38 × 89	600	3.6	
		38 × 89 flat (1)	400	2.4	
	Attic accessible by a stairway plus one floor Roof load plus one floor Attic not accessible by stairway plus 2 floors	38 × 89	400	3.6	
	Roof load Attic accessible by a stairway Attic not accessible by a stairway plus one floor	38 × 64	400	2.4	
		38 × 89	600	3.6	
	Attic accessible by a stairway plus 2 floors Roof load plus 2 floors	38 × 89	300	3.6	
		64 × 89	400	3.6	
		38 × 140	400	4.2	
	Attic accessible by a stairway plus 3 floors Roof load plus 3 floors	38 × 140	300	4.2	
	Exterior	Roof with or without attic storage	38 × 64	400	2.4
			38 × 89	600	3.0
			<u>38 × 140</u>	<u>600</u>	<u>3.0</u>
<u>38 × 140</u>			<u>400</u>	<u>3.6</u>	
Roof with or without attic storage plus one floor		38 × 89	400	3.0	
		38 × 140	600	3.0	
		<u>38 × 140</u>	<u>400</u>	<u>3.6</u>	

Type of Wall	Supported Loads (including <i>dead loads</i>)	Minimum Stud Size, mm	Maximum Stud Spacing, mm	Maximum Unsupported Height, m
	Roof with or without attic storage plus 2 floors	38 × 89	300	3.0
		64 × 89	400	3.0
		38 × 140	400	3.6
	Roof with or without attic storage plus 3 floors	38 × 140	300	1.8

Note to Table [\[9.23.10.1.\]](#) 9.23.10.1.:

(1) See Article 9.23.10.3.

Impact analysis

Costs

Many Part 9 structures currently use 38 mm × 140 mm studs spaced at 400 mm o.c. in exterior walls to meet energy requirements. No additional incremental costs are expected as this proposed change would clarify the existing Code requirement for wall studs without making it more stringent. All requirements for other wall stud sizes and spacing would remain the same.

Benefits

This proposed change would clarify the applicability of 38 mm × 140 mm studs spaced at 400 mm o.c. and could provide a cost benefit to builders. As Table 9.23.10.1. does not currently address 38 mm × 140 mm studs spaced at 400 mm o.c. in exterior walls supporting fewer than two floors, a building official could decide that the structure does not meet Part 9 requirements. If a fully engineered design following Part 4 of the NBC were required, the builder could incur additional costs related to the engineered design, including hiring the services of a professional engineer. If the builder modified the design to use 38 mm × 89 mm studs for compliance with Table 9.23.10.1., there might be increased costs for other materials to meet the same energy performance levels.

Enforcement implications

This proposed change would make the provision easier to enforce, as it would eliminate uncertainty about some common stud sizing configurations.

Who is affected

Builders, designers and enforcement officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

N/A

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Proposed Change 1657

Code Reference(s):	NBC20 Div.B 9.36.2.4.(1) (first printing)
Subject:	Masonry Terminology
Title:	Masonry Terminology used in Table A-9.36.2.4.(1)-D
Description:	This proposed change replaces nominal values with actual ones for brick thickness and density as well as the term "core" with "cell" in Table A-9.36.2.4.(1)-D.
Related Code Change Request(s):	CCR 1153
Related Proposed Change(s):	PCF 1746

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The values for thickness of material specified in Table A-9.36.2.4.(1)-D for brick cladding represent the nominal rather than actual values of a standard metric modular brick used in Canada. Table A-9.36.2.4.(1)-D also uses the term "core," which is not consistent with Canadian design practice or relevant material standards.

Justification

The Clay Brick Association of Canada (CBAC) agreed that "100 mm" should be changed to "90 mm" in Table A-9.36.2.4.(1)-D for brick cladding materials, since 95% of the clay brick manufactured in Canada is 90 mm thick.

The CBAC also noted that the industry does not have sufficient data to provide a separate RSI value for each type of brick (e.g., solid, frogged, cored); as such, the recommendation is to leave the type of brick and RSI values as currently provided. However, the CBAC noted that the density value of 2400 kg/m³ specified for fired brick is too high and should be corrected to read 1800 to 2200 kg/m³.

A correction to the term "core" is also required in Table A-9.36.2.4.(1)-D under the entries for concrete blocks and hollow clay bricks. In the first instance, the term should be replaced with "cell" as concrete block is not a cored product: its openings are referred to as "cells." The Canadian Concrete Masonry Producers Association (CCMPA) does not object to this proposed change to terminology in Table A-9.36.2.4.(1)-D for all types of concrete block to reflect usage in CSA A165.1-14, "Concrete block masonry units."

Although CSA A82:14, "Fired masonry brick made from clay or shale," defines the terms "hollow brick" and "cored brick" as two distinct types of brick, the CBAC noted that the term "hollow clay brick" is used correctly in Table A-9.36.2.4.(1)-D and recommends leaving this term as is. However, the CBAC also noted that, for the types of hollow clay brick listed in Table A-9.36.2.4.(1)-D, "core(s)" should be changed to "cell(s)."

PROPOSED CHANGE

[\[9.36.2.4.\]](#) 9.36.2.4. Calculation of Effective Thermal Resistance of Assemblies

- [\[1\]](#) 1) In calculating the thermal resistance of assemblies for the purpose of comparison with the requirements of Articles 9.36.2.6. and 9.36.2.8., the thermal bridging effect of closely spaced, repetitive structural members, such as studs and joists, and of ancillary members, such as lintels, sills and plates, shall be accounted for. (See Note A-9.36.2.4.(1).)

Note A-9.36.2.4.(1) Calculating the Effective Thermal Resistance of Building Envelope Assemblies.

The general theory of heat transfer is based on the concept of the thermal transmittance through an element over a given surface area under the temperature difference across the element (see Sentence 9.36.1.2.(2)). As such, the NECB requires all building envelope assemblies and components to comply with the maximum U-values (overall thermal transmittance) stated therein. However, the requirements in Subsection 9.36.2. are stated in RSI values (effective thermal resistance values), which are the reciprocal of U-values.

To calculate effective thermal resistance, Section 9.36. requires that contributions from all portions of an assembly—including heat flow through studs and insulation—be taken into account because the same insulation product (nominal insulation value) can produce different effective thermal resistance values in different framing configurations. The resulting effective thermal resistance of an assembly also depends on the thermal properties and thickness of the building materials used and their respective location.

The following paragraphs provide the calculations to determine the effective thermal resistance values for certain assemblies and the thermal characteristics of common building

materials. The Tables in Notes A-9.36.2.6.(1) and A-9.36.2.8.(1) confirm the compliance of common building assemblies.

Calculating the Effective Thermal Resistance of a Steel-frame Assembly

The parallel-path flow method described above for wood-frame assemblies involves simple one-dimensional heat flow calculations based on two assumptions:

- that the heat flow through the thermal bridge (the stud) is parallel to the heat flow through the insulation, and
- that the temperature at each plane is constant.

Tests performed on steel-frame walls have shown that neither of these assumptions properly represents the highly two-dimensional heat flow that actually occurs. The difference between what is assumed and what actually occurs is even more significant in steel-frame assemblies. The results achieved using the calculation method below compare well with those achieved from actual tests. The method provides a good approximation if a thermal resistance value of 0.0000161 (m²×K)/W per mm (or a conductivity of 62 (W×m)/(m²×°C)) is used (this value is associated with galvanized steel with a carbon content of 0.14%).

To calculate the effective thermal resistance of a building envelope assembly consisting of steel framing, RSI_{eff} , use the following equation:

$$RSI_{eff} = K_1RSI_{T1} + K_2RSI_{T3}$$

where

- RSI_{T1} = effective thermal resistance of building envelope assembly determined using parallel-path flow method for wood-frame assemblies (use framing and cavity percentages in Table A-9.36.2.4.(1)-C),
- RSI_{T3} = RSI_{T2} + thermal resistance values of all other components except steel studs and insulation, where RSI_{T2} = effective thermal resistance of steel studs and insulation determined using parallel-path flow method for wood-frame assemblies,
- K_1 = applicable value from Table A-9.36.2.4.(1)-B, and
- K_2 = applicable value from Table A-9.36.2.4.(1)-B.

Table [\[A-9.36.2.4.\(1\)-B\]](#) A-9.36.2.4.(1)-B
Values for K_1 and K_2

Framing Spacing, mm	K_1	K_2
< 500 without insulating sheathing	0.33	0.67
< 500 with insulating sheathing	0.40	0.60
≥ 500	0.50	0.50

Table [\[A-9.36.2.4.\(1\)-C\]](#) A-9.36.2.4.(1)-C
Framing and Cavity Percentages for Typical Steel-frame Assemblies ⁽¹⁾

Steel-frame Assemblies	Frame Spacing, mm o.c.							
	< 500		≥ 500		< 2100		≥ 2100	
	% Area Framing	% Area Cavity	% Area Framing	% Area Cavity	% Area Framing	% Area Cavity	% Area Framing	% Area Cavity
Roofs, ceilings, floors	0.43	99.57	0.33	99.67	—	—	—	—
Above-grade walls and strapping	0.77	99.23	0.67	99.33	—	—	—	—
Below-grade walls and strapping	0.57	99.43	0.33	99.67	—	—	—	—
Sheet steel wall	—	—	—	—	0.08	99.92	0.06	99.94

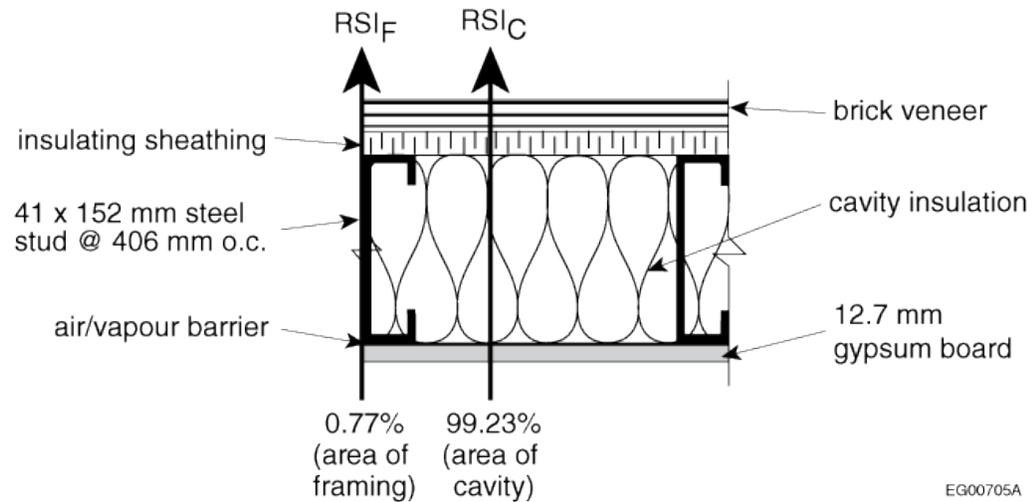
Note to Table [\[A-9.36.2.4.\(1\)-C\]](#) A-9.36.2.4.(1)-C:

- (1) The framing percentages given in this Table are based on common framing practices and not simply on the width of the studs and cavity. They are based on 18-gauge (1.2 mm) steel; however, test results indicate that, for the range of thicknesses normally used in light-steel framing, the actual thickness has very little effect on the effective thermal resistance. If the actual % areas of framing and cavity are known, those should be used rather than the ones in this Table.

Example – Calculation of RSI_{eff} for a 41 × 152 mm Steel-frame Wall Assembly with Studs 406 mm o.c.

Figure [\[A-9.36.2.4.\(1\)-B\]](#) 2-1

RSI_{eff} calculation parameters for a 41 × 152 mm steel-frame wall assembly



1. Calculate RSI_{T1}

Materials in Assembly	RSI_F (thermal resistance through framing)	RSI_C (thermal resistance through cavity)
Outside air film	0.03	0.03
Brick veneer	0.07	0.07
Air space (25 mm thick)	0.18	0.18
Extruded polystyrene (38 mm thick × RSI 0.035/mm)	1.33	1.33
Steel stud (152 mm thick × RSI 0.0000161/mm)	0.0023	—
Insulation (152 mm thick; RSI 3.52 (R20) batts)	—	3.52
Polyethylene (vapour barrier)	—	—
Gypsum (12.7 mm thick)	0.08	0.08
Interior air film	0.12	0.12

Materials in Assembly	RSI _F (thermal resistance through framing)	RSI _C (thermal resistance through cavity)
Total	1.81	5.33
% area framing and cavity from Table A-9.36.2.4.(1)-C	0.77%	99.23%
$RSI_{T1} = \frac{100}{\frac{0.77}{1.81} + \frac{99.23}{5.33}} = \frac{5.25(m^2K)}{W}$		(U-value = 0.19 W/(m ² ×K))

2. Calculate RSI_{T2}

Materials in Assembly	RSI _F (thermal resistance through framing)	RSI _C (thermal resistance through cavity)
Steel stud (152 mm thick × RSI 0.0000161/mm)	0.0023	—
Insulation (152 mm thick; RSI 3.52 (R20) batts)	—	3.52
Total	0.0023	3.52
% area framing and cavity from Table A-9.36.2.4.(1)-C	0.77%	99.23%
$RSI_{T2} = \frac{100}{\frac{0.77}{0.0023} + \frac{99.23}{3.52}} = \frac{0.27(m^2K)}{W}$		(U-value = 3.69 W/(m ² ×K))

3. Calculate RSI_{T3}

Materials in Assembly	RSI through Assembly
Outside air film	0.03
Brick veneer	0.07
Air space (25 mm thick)	0.18

Materials in Assembly	RSI through Assembly
Extruded polystyrene (38 mm thick × RSI 0.035/mm)	1.33
RSI _{T2}	0.27
Polyethylene (vapour barrier)	—
Gypsum (12.7 mm thick)	0.08
Interior air film	0.12
	RSI _{T3} = 2.08 (m ² ×K)/W (U-value = 0.48 W/(m ² ×K))

4. Calculate RSI_{eff}

$$RSI_{eff} = (K_1 \times RSI_{T1}) + (K_2 \times RSI_{T3}) = (0.40 \times 5.25) + (0.60 \times 2.08) = 3.35 \text{ (m}^2\text{×K)/W (U-value = 0.30 W/(m}^2\text{×K))}$$

Table [\[A-9.36.2.4.\(1\)-D\]](#) A-9.36.2.4.(1)-D
Thermal Resistance Values of Common Building Materials ⁽¹⁾

Air Films	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Exterior:			
ceiling, floors and walls wind 6.7 m/s (winter)	—	—	0.03
Interior:			
ceiling (heat flow up)	—	—	0.11
floor (heat flow down)	—	—	0.16
walls (heat flow horizontal)	—	—	0.12
Air Cavities ^{(2) (3)}	Thickness of Air Space	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Ceiling (heat flow up) faced with non-reflective material ⁽⁴⁾	13 mm	—	0.15
	20 mm	—	0.15

	40 mm	—	0.16
	90 mm	—	0.16
Floors (heat flow down) faced with non-reflective material ⁽⁴⁾	13 mm	—	0.16
	20 mm	—	0.18
	40 mm	—	0.20
	90 mm	—	0.22
Walls (heat flow horizontal) faced with non-reflective material ⁽⁴⁾	9.5 mm	—	0.15
	13 mm	—	0.16
	20 mm	—	0.18
	40 mm	—	0.18
	90 mm	—	0.18
Cladding Materials	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Brick:			
fired clay (2400 <u>1800–2200</u> kg/m ³)	100 <u>90</u> mm	0.0007	0.07 <u>0.063</u>
concrete: sand and gravel, or stone (2400 kg/m ³)	100 <u>90</u> mm	0.0004	0.04 <u>0.036</u>
Cement/lime, mortar, and stucco	—	0.0009	—
Wood shingles:			
400 mm, 190 mm exposure	—	—	0.15
400 mm, 300 mm exposure (double exposure)	—	—	0.21
insulating backer board	8 mm	—	0.25
Siding:			
Metal or vinyl siding over sheathing:			
hollow-backed	—	—	0.11
insulating-board-backed	9.5 mm nominal	—	0.32
foiled-backed	9.5 mm nominal	—	0.52

Wood:			
bevel, 200 mm, lapped	13 mm	—	0.14
bevel, 250 mm, lapped	20 mm	—	0.18
drop, 200 mm	20 mm	—	0.14
hardboard	11 mm	—	0.12
plywood, lapped	9.5 mm	—	0.10
Stone:			
quartzitic and sandstone (2240 kg/m ³)	—	0.0003	—
calcitic, dolomitic, limestone, marble, and granite (2240 kg/m ³)	—	0.0004	—
Fibre-cement: single-faced, cellulose fibre-reinforced cement	6.35 mm	0.003	0.023
	8 mm	0.003	0.026
Roofing Materials ⁽⁵⁾	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Asphalt roll roofing	—	—	0.03
Asphalt/tar	—	0.0014	—
Built-up roofing	10 mm	—	0.06
Crushed stone	—	0.0006	—
Metal deck	—	—	negligible
Shingle:			
asphalt	—	—	0.08
wood	—	—	0.17
Slate	13 mm	—	0.01
Sheathing Materials	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Gypsum sheathing	12.7 mm	0.0063	0.08
Insulating fibreboard	—	0.016	—

Particleboard:			
low density (593 kg/m ³)	—	0.0098	—
medium density (800 kg/m ³)	—	0.0077	—
high density (993 kg/m ³)	—	0.0059	—
Plywood – generic softwood	9.5 mm	0.0087	0.083
	11 mm		0.096
	12.5 mm		0.109
	15.5 mm		0.135
	18.5 mm		0.161
Plywood – Douglas fir	9.5 mm	0.0111	0.105
	11 mm		0.122
	12.5 mm		0.139
	15.5 mm		0.172
	18.5 mm		0.205
Sheet materials:			
permeable felt	—	—	0.011
seal, 2 layers of mopped (0.73 kg/m ³)	—	—	0.210
seal, plastic film	—	—	negligible
Waferboard (705 kg/m ³)	—	0.0095	—
Oriented strandboard (OSB)	9.5 mm	0.0098	0.093
	11 mm		0.108
Insulation Materials ⁽⁶⁾	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Blanket and batt: rock or glass mineral fibre (CAN/ULC-S702.1)			
R12	89/92 mm	—	2.11
R14	89/92 mm	—	2.46
R19 ⁽⁷⁾ (R20 compressed)	140 mm	—	3.34
R20	152 mm	—	3.52

R22	140/152 mm	—	3.87
R22.5	152 mm	—	3.96
R24	140/152 mm	—	4.23
R28	178/216 mm	—	4.93
R31	241 mm	—	5.46
R35	267 mm	—	6.16
R40	279/300 mm	—	7.04
Insulation Materials ⁽⁶⁾ (continued)	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Boards and slabs:			
Roof board	—	0.018	—
Building board or ceiling tile, lay-in panel	—	0.016	—
Polyisocyanurate/polyurethane- faced sheathing: Types 1, 2 and 3 (CAN/ULC-S704.1)			
permeably faced	25 mm	0.03818	0.97
	50 mm	0.0360	1.80
impermeably faced	25 mm	0.03937	1.00
	50 mm	0.0374	1.87
Expanded polystyrene (CAN/ULC-S701.1) ⁽⁸⁾			
Type 1	25 mm	0.026	0.65
Type 2	25 mm	0.028	0.71
Type 3	25 mm	0.030	0.76
Extruded polystyrene: Types 2, 3 and 4 (CAN/ULC-S701.1)			
	25 mm	0.035	0.88
	50 mm	0.0336	1.68
Semi-rigid glass fibre wall/roof insulation (48 kg/m ³)	25 mm	0.0298	0.757
Semi-rigid rock wool wall insulation (56 kg/m ³)	25 mm	0.0277	0.704

Loose-fill insulation			
Cellulose (CAN/ULC-S703)	—	0.025	—
Glass fibre loose fill insulation for attics (CAN/ULC-S702.1)	112 to 565 mm	0.01875	—
Glass fibre loose fill insulation for walls (CAN/ULC-S702.1)	89 mm	0.02865	2.55
	140 mm	0.0289	4.05
	152 mm	0.030	4.23
Perlite	—	0.019	—
Vermiculite	—	0.015	—
Spray-applied insulation			
Sprayed polyurethane foam			
medium density (CAN/ULC-S705.1)	25 mm	0.036	0.90
	50 mm	0.036	1.80
light density (CAN/ULC-S712.1)	25 mm	0.026	0.65
Sprayed cellulosic fibre (CAN/ULC-S703)	settled thickness	0.024	—
Spray-applied glass-fibre insulation (CAN/ULC-S702.1)			
density: 16 kg/m ³	89 mm	0.025	2.30
	140 mm	0.025	3.53
density: 28.8 kg/m ³	89 mm	0.029	2.64
	140 mm	0.029	4.06
Structural Materials	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Concrete			
Low-density aggregate			
expanded shale, clay, slate or slags, cinders (1 600 kg/m ³)	—	0.0013	—

perlite, vermiculite, and polystyrene bead (480 kg/m ³)	—	0.0063	—
Normal-density aggregate			
sand and gravel or stone aggregate (2 400 kg/m ³)	—	0.0004	—
Hardwood ⁽⁹⁾ ⁽¹⁰⁾			
Ash	—	0.0063	—
Birch	—	0.0055	—
Maple	—	0.0063	—
Oak	—	0.0056	—
Softwood ⁽⁹⁾ ⁽¹⁰⁾			
Amabilis fir	—	0.0080	—
California redwood	—	0.0089	—
Douglas fir-larch	—	0.0069	—
Eastern white cedar	—	0.0099	—
Eastern white pine	—	0.0092	—
Hemlock-fir	—	0.0084	—
Lodgepole pine	—	0.0082	—
Red pine	—	0.0077	—
Western hemlock	—	0.0074	—
Western red cedar	—	0.0102	—
White spruce	—	0.0097	—
Yellow cyprus-cedar	—	0.0077	—
Wood, structural framing, spruce-pine-fir ⁽¹¹⁾	—	0.0085	—
Steel, galvanized sheet, 0.14% carbon content	—	0.0000161	—
Concrete Blocks	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Limestone aggregate with 2 corescells			

eorescells filled with perlite	190 mm	—	0.37	
	290 mm	—	0.65	
Light-weight units (expanded shale, clay, slate or slag aggregate) with 2 or 3 eorescells				
no insulation in eorescells	90 mm	—	0.24	
	140 mm	—	0.30	
	190 mm	—	0.32	
	240 mm	—	0.33	
	290 mm	—	0.41	
	eorescells filled with perlite	140 mm	—	0.74
	190 mm	—	0.99	
	290 mm	—	1.35	
	eorescells filled with vermiculite	140 mm	—	0.58
	190 mm	—	0.81	
	240 mm	—	0.98	
	290 mm	—	1.06	
	eorescells filled with molded EPS beads	190 mm	—	0.85
molded EPS inserts in eorescells	190 mm	—	0.62	
Medium-weight units (combination of normal- and low-mass aggregate) with 2 or 3 cores				
no insulation in eorescells	190 mm	—	0.26	
	eorescells filled with molded EPS beads	190 mm	—	0.56
	molded EPS inserts in eorescells	190 mm	—	0.47
	eorescells filled with perlite	190 mm	—	0.53
	eorescells filled with vermiculite	190 mm	—	0.58
	Normal-weight units (sand and gravel aggregate) with 2 or 3 eorescells			

no insulation in corescells	90 mm	—	0.17
	140 mm	—	0.19
	190 mm	—	0.21
	240 mm	—	0.24
	290 mm	—	0.26
corescells filled with perlite	190 mm	—	0.35
corescells filled with vermiculite	140 mm	—	0.40
	190 mm	—	0.51
	240 mm	—	0.61
	290 mm	—	0.69
Hollow Clay Bricks	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Multi- corecell ed without insulation in corescells	90 mm	—	0.27
Rectangular 2- corecell			
no insulation in corescells	140 mm	—	0.39
	190 mm	—	0.41
	290 mm	—	0.47
corescells filled with vermiculite	140 mm	—	0.65
	190 mm	—	0.86
	290 mm	—	1.29
Rectangular 3- corecell			
no insulation in corescells	90 mm	—	0.35
	140 mm	—	0.38
	190 mm	—	0.41
	240 mm	—	0.43
	290 mm	—	0.45
corescells filled with vermiculite	140 mm	—	0.68
	190 mm	—	0.86
	240 mm	—	1.06

	290 mm	—	1.19
Interior Finish Materials ⁽¹²⁾	Thickness of Material	Thermal Resistance (RSI), (m ² ×K)/W per mm	Thermal Resistance (RSI), (m ² ×K)/W for thickness listed
Gypsum board	—	0.0061	—
Hardboard – medium-density (800 kg/m ³)	—	0.0095	—
Interior finish (plank, tile) board	—	0.0198	—
Particleboard			
low-density (590 kg/m ³)	—	0.0098	—
medium-density (800 kg/m ³)	—	0.0074	—
high-density (1 000 kg/m ³)	—	0.0059	—
underlay	15.9 mm	—	0.140
Plywood	—	0.0087	—
Flooring material			
Carpet and fibrous pad	—	—	0.370
Carpet and rubber pad	—	—	0.220
Cork tile	3.2 mm	—	0.049
Hardwood flooring	19 mm	—	0.120
Terrazzo	25 mm	—	0.014
Tile (linoleum, vinyl, rubber)	—	—	0.009
Tile (ceramic)	9.5 mm	—	0.005
Wood subfloor	19 mm	—	0.170
Plastering			
Cement plaster: sand aggregate	—	0.0014	—
Gypsum plaster			
low-density aggregate	—	0.0044	—
sand aggregate	—	0.0012	—

Notes to Table [\[A-9.36.2.4.\(1\)-D\]](#) A-9.36.2.4.(1)-D:

-
- (1) The thermal resistance values given in Table A-9.36.2.4.(1)-D are generic values for the materials listed or minimum acceptable values taken from the standards listed. Values published by manufacturers for their proprietary materials may differ slightly but are permitted to be used, provided they were obtained in accordance with the test methods referenced in Article 9.36.2.2. For materials not listed in the Table or where the listed value does not reflect the thickness of the product, the thermal resistance value has to be calculated by dividing the material's thickness, in m, by its conductivity, in $W/(m \times K)$, which can be found in the manufacturer's literature.
 - (2) RSI values can be interpolated for air cavity sizes that fall between 9.5 and 90 mm, and they can be moderately extrapolated for air cavities measuring more than 90 mm.
 - (3) Where strapping is installed, use the RSI value for an air layer of equivalent thickness.
 - (4) Reflective insulation material may contribute a thermal property value depending on its location and installation within an assembly. Where a value is obtained through evaluation carried out in accordance with Clause 9.36.2.2.(4)(b), it may be included in the calculation of the thermal resistance or transmittance of the specific assembly.
 - (5) Materials installed towards the exterior of a vented air space in a roof assembly cannot be included in the calculation of effective thermal resistance of the roof assembly.
 - (6) All types of cellular foam plastic insulation manufactured to be able to retain a blowing agent, other than air, for a period longer than 180 days shall be tested for long-term thermal resistance (LTTR) in accordance with CAN/ULC-S770, "Standard Test Method for Determination of Long-Term Thermal Resistance of Closed-Cell Thermal Insulating Foams". This LTTR value shall be input as the design thermal resistance value for the purpose of energy calculations in Section 9.36. Product standards contain a baseline LTTR for a thickness of 50 mm, from which the LTTR for other thicknesses can be calculated.
 - (7) An RSI 3.52 (R20) batt compressed into a 140 mm cavity has a thermal resistance value of 3.34 (R19); if installed uncompressed in a 152 mm cavity (e.g. in a metal stud assembly), it will retain its full thermal resistance value of 3.52 ($m^2 \times K$)/W.
 - (8) Expanded polystyrene insulation is not manufactured to be able to retain a blowing agent; it is therefore not necessary to test its LTTR. See ⁽⁶⁾.
-

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- (9) The thermal resistance values for wood species are based on a moisture content (MC) of 12%. In Canada, equilibrium moisture content for wood in buildings ranges from 8–14%. The difference between the thermal properties of wood species with 12% MC and those with 14% MC is negligible.
 - (10) For wood species not listed in the Table, the RSI value of a wood species of equal or greater density (or specific gravity (relative density)) can be used since the thermal resistance of wood is directly related to its density (higher density wood has a lower thermal resistance).
 - (11) 0.0085 is considered a common value for structural softwood (see also the "ASHRAE Handbook – Fundamentals").
 - (12) Materials installed towards the interior of a conditioned air space cannot be included in the calculation of effective thermal resistance of the assembly.
-

Impact analysis

This proposed change would clarify Table A-9.36.2.4.(1)-D and better align the NBC with CSA material standards.

Enforcement implications

This proposed change could be enforced by the existing enforcement infrastructure.

Who is affected

Designers, engineers, architects, building officials, manufacturers, suppliers and energy advisors.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[9.36.2.4.\]](#) 9.36.2.4. ([1] 1) [F92-OE1.1]

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Proposed Change 1746

Code Reference(s):	NBC20 Div.B 9.36.2.5.(5) (first printing) NBC20 Div.B 9.36.2.8.(1) (first printing)
Subject:	Masonry Terminology — Use of the Terms in Division B
Title:	Harmonizing Masonry Terminology
Description:	This proposed change harmonizes the use of "cell" instead of "core" in relation to concrete block masonry and brick masonry in Section 9.36. of Division B of the NBC.
Related Code Change Request(s):	CCR 1153
Related Proposed Change(s):	PCF 1657

This change could potentially affect the following topic areas:

- | | |
|--|--|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The use of the term "core" to indicate a void within concrete block masonry units is not consistent with masonry terminology, Canadian design practice or relevant material standards, which may cause confusion for Code users.

Justification

In accordance with CSA A165.1-14, "Concrete block masonry units," the term "cell" should be used to indicate a void within concrete block masonry units (including both hollow and semi-solid concrete block masonry units).

PCF 1657-2022 proposes use of the term "cell" in Table A-9.36.2.4.(1)-D to describe voids in concrete block masonry units. As such, this proposed change harmonizes the use of masonry terminology within Section 9.36. by proposing use of the term "cell" instead of "core" in to describe voids in concrete block masonry units in Table A-9.36.2.8.(1)-A and a revision to the explanatory Note A-9.36.2.5.(5) for clarification.

PROPOSED CHANGE

NBC20 Div.B 9.36.2.5.(5) (first printing)

[\[9.36.2.5.\]](#) 9.36.2.5. Continuity of Insulation

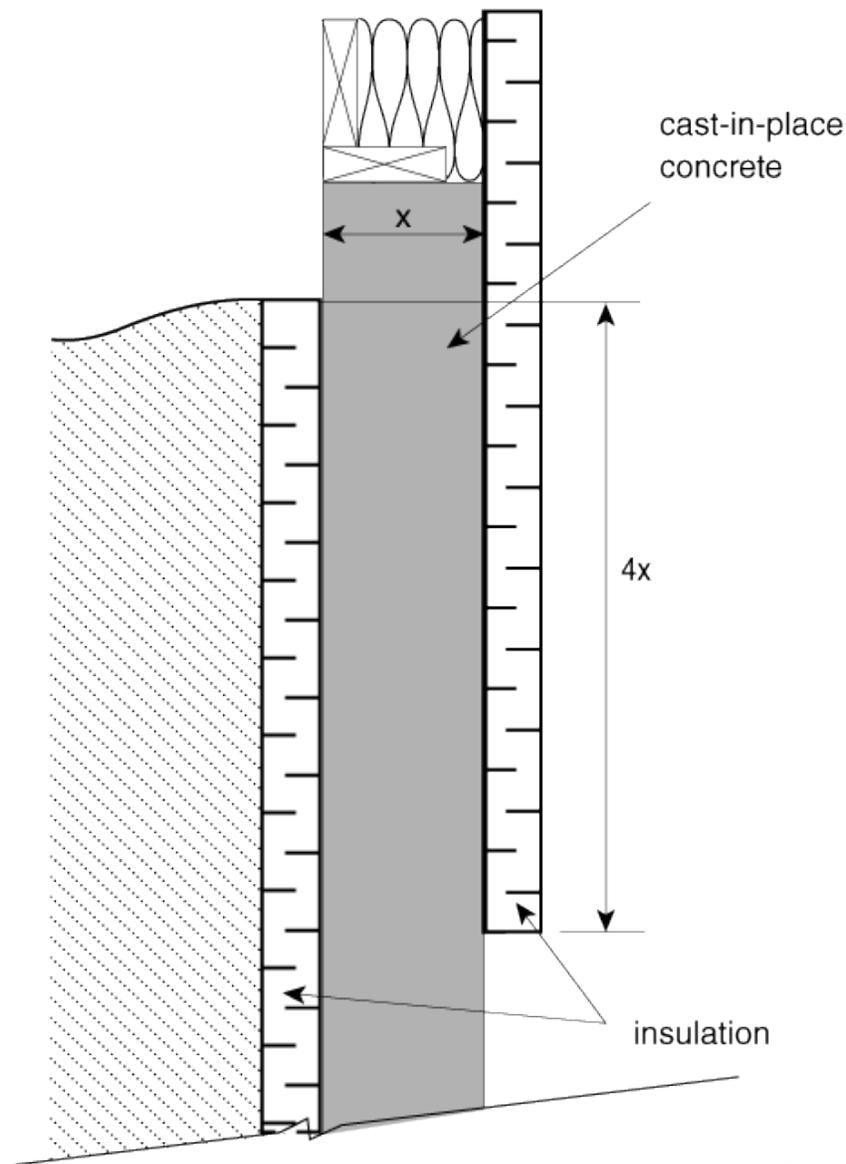
- [\[1\]](#) 5) Except as provided in Sentences (9) and (10), where two planes of insulation are separated by a *building* envelope assembly and cannot be physically joined, one of the planes of insulation shall be extended for a distance equal to at least 4 times the thickness of the assembly separating the two planes. (See Note A-9.36.2.5.(5) .)

Note A-9.36.2.5.(5) Maintaining Continuity of Insulation.

An example to which Sentence 9.36.2.5.(5) does not apply is that of a foundation wall that is insulated on the inside and the insulation continues through the joist cavity and into the wall assembly. An example to which Sentence (5) does apply is a foundation wall that is insulated on the outside below grade and on the inside above grade, in which case the distance separating the two planes of insulation is the thickness of the foundation wall.

Figure [\[A-9.36.2.5.\(5\)-A\]](#) A-9.36.2.5.(5)-A

Application of Sentence 9.36.2.5.(5) to a cast-in-place concrete foundation wall



EG00771A

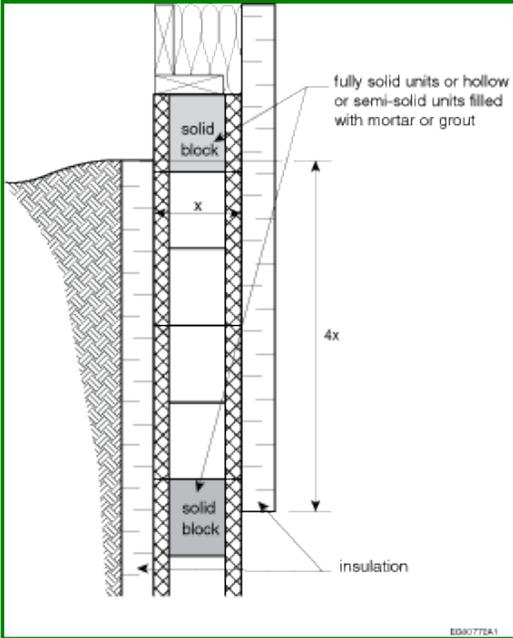
In the configuration described in Sentence (5), the top of the foundation wall might also be required to be insulated to reduce the effect of thermal bridging through it. Insulation is not required to be overlapped as stated in Sentence (5) in cases where the joist cavities on top of the foundation wall are filled with insulation.

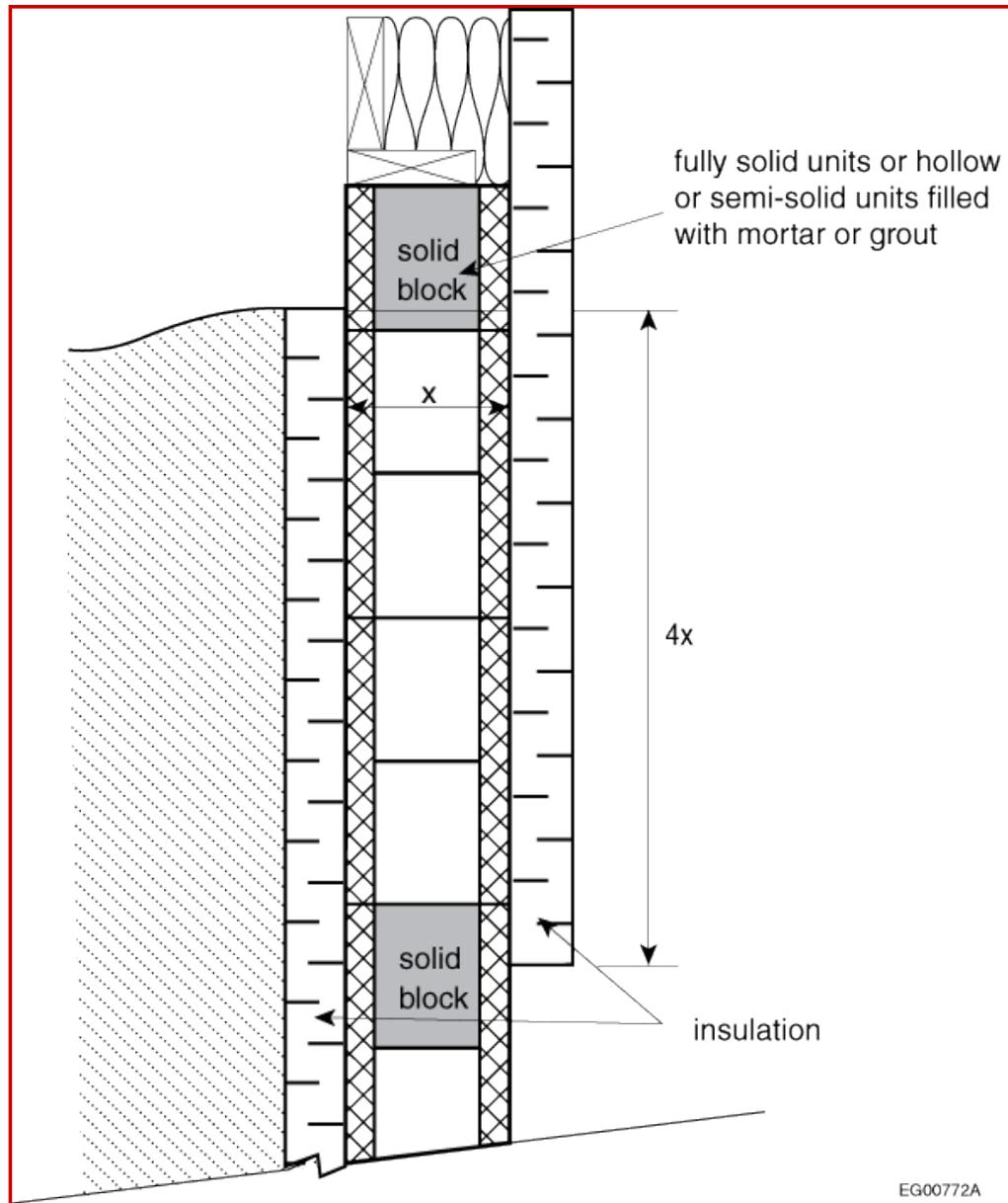
For cast-in-place concrete foundation walls, Sentence (5) ensures that the continuity of the insulation is maintained at every section across the wall.

In the case of hollow-core masonry walls constructed with hollow or semi-solid masonry units, the effect of convection in the core cells of the masonry units needs to be addressed. The core cells of the block masonry course that coincides with the respective lowest and highest ends of each plane of insulation should be filled with grout, mortar or insulation to reduce convection within the core cells, which could short-circuit the insulation's function.

Figure [\[A-9.36.2.5.\(5\)-B\]](#) A-9.36.2.5.(5)-B

Application of Sentence 9.36.2.5.(5) to a hollow-core masonry foundation wall
constructed with hollow or semi-solid concrete block masonry units





NBC20 Div.B 9.36.2.8.(1) (first printing)

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

[\[1\]](#) 1) Except as provided in Sentence (2) and Article 9.36.2.5., the effective thermal resistance of *building* assemblies that are below-*grade* or in contact with the ground shall be not less than that shown for the applicable heating-degree day category in

[a] a) Table 9.36.2.8.-A, where the ventilation system does not include heat-recovery equipment, or

[b] b) Table 9.36.2.8.-B, where the ventilation system includes heat-recovery equipment conforming to Article 9.36.3.9.

(See Note A-9.36.2.8.(1).)

Note A-9.36.2.8.(1) Nominal Insulation Values for Walls Below-Grade or in Contact with the Ground.

Tables A-9.36.2.8.(1)-A, A-9.36.2.8.(1)-B and A-9.36.2.8.(1)-C are provided to help Code users assess the compliance of walls that are below-grade or in contact with the ground with Table 9.36.2.8.-A or 9.36.2.8.-B. Table A-9.36.2.8.(1)-A presents the minimum nominal thermal resistance to be made up in a given wall assembly for it to achieve the applicable RSI value required by Table 9.36.2.8.-A or 9.36.2.8.-B. The amount of additional materials needed to meet the prescribed RSI value can then be estimated using the thermal resistance values listed in Table A-9.36.2.4.(1)-D for the rest of the building materials in the assembly, any finishing materials, sheathing or insulation, if applicable, and the interior air film. For example, an RSI value of 0.20 (m²×K)/W needed to achieve the minimum RSI for a given assembly could be made up by installing 12.7 mm gypsum board, which has an RSI value of 0.0775 (m²×K)/W, and by taking into account the air film coefficient on the interior side of the wall, which is 0.12 (m²×K)/W.

Note that the wall assemblies described in Table A-9.36.2.8.(1)-A do not necessarily address other structural or building envelope requirements (see Section 9.25.).

**Table [\[A-9.36.2.8.\(1\)-A\]](#) A-9.36.2.8.(1)-A
Minimum Nominal Thermal Resistance (RSI) to be Made up by Insulation,
Sheathing or Other Materials and Air Films in Wall Assemblies Below-Grade or in
Contact with the Ground**

Description of Framing or Material	Size and Spacing of Wood Framing	Thermal Resistance of Insulated Assembly			Minimum Effective Thermal Resistance Required by Article 9.36.2.8. for Wall Assemblies Below-Grade or in Contact with the Ground, (m ² ×K)/W			
		Nominal, (m ² ×K)/W (ft ² ×°F×h/Btu)		Effective, (m ² ×K)/W	1.99	2.98	3.46	3.97
		Insulation in Framing Cavity	Continuous Materials					
200 mm cast-in-place concrete	38 × 89 mm, 610 mm o.c.	2.11 (R12)	None	1.79	0.20	1.19	1.67	2.18
			1.41 (R8)	3.20	—	—	0.26	0.77
		2.46 (R14)	1.76 (R10)	3.75	—	—	—	0.22

Description of Framing or Material	Size and Spacing of Wood Framing	Thermal Resistance of Insulated Assembly			Minimum Effective Thermal Resistance Required by Article 9.36.2.8. for Wall Assemblies Below-Grade or in Contact with the Ground, (m ² ×K)/W			
		Nominal, (m ² ×K)/W (ft ² ×°F×h/Btu)		Effective, (m ² ×K)/W	1.99	2.98	3.46	3.97
		Insulation in Framing Cavity	Continuous Materials	Entire Assembly	Minimum Nominal Thermal Resistance, ⁽¹⁾ in (m ² ×K)/W, to be Made up by Insulation, Sheathing ⁽²⁾ or Other Materials and Air Film Coefficients			
	38 × 140 mm, 610 mm o.c.	3.34 (R19) ⁽³⁾	None	2.78	—	0.20	0.68	1.19
		4.23 (R24)	None	3.26	—	—	0.20	0.71
	None	n/a	1.76 (R10)	1.84	0.15	1.14	1.62	2.13
			2.64 (R15)	2.72	—	0.26	0.74	1.25
			3.52 (R20) ⁽³⁾	3.60	—	—	—	0.37
	190 mm concrete block masonry: normal-weight, no insulation in corecells	38 × 89 mm, 610 mm o.c.	2.11 (R12)	None	1.92	0.07	1.06	1.54
1.41 (R8)				3.33	—	—	0.13	0.64
2.11 (R12)				4.03	—	—	—	—
38 × 140 mm, 610 mm o.c.		3.34 (R19) ⁽³⁾	None	2.91	—	0.07	0.55	1.06
			4.23 (R24)	None	3.39	—	—	0.07
None		n/a	1.76 (R10)	1.97	0.02	1.01	1.49	2.00
			2.64 (R15)	2.85	—	0.13	0.61	1.12
			3.52 (R20) ⁽³⁾	3.73	—	—	—	0.24

Description of Framing or Material	Size and Spacing of Wood Framing	Thermal Resistance of Insulated Assembly			Minimum Effective Thermal Resistance Required by Article 9.36.2.8. for Wall Assemblies Below-Grade or in Contact with the Ground, (m ² ×K)/W			
		Nominal, (m ² ×K)/W (ft ² ×°F×h/Btu)		Effective, (m ² ×K)/W	1.99	2.98	3.46	3.97
		Insulation in Framing Cavity	Continuous Materials	Entire Assembly	Minimum Nominal Thermal Resistance, ⁽¹⁾ in (m ² ×K)/W, to be Made up by Insulation, Sheathing ⁽²⁾ or Other Materials and Air Film Coefficients			
190 mm concrete block masonry: light-weight, no insulation in core cells	38 × 89 mm, 610 mm o.c.	2.11 (R12)	None	2.03	—	0.95	1.43	1.94
			1.41 (R8)	3.44	—	—	0.02	0.53
			2.11 (R12)	4.14	—	—	—	—
	38 × 140 mm, 610 mm o.c.	3.34 (R19) ⁽³⁾	None	3.02	—	—	0.44	0.95
		4.23 (R24)	None	3.50	—	—	—	0.47
	None	n/a	1.76 (R10)	2.08	—	0.90	1.38	1.89
			2.64 (R15)	2.96	—	0.02	0.50	1.01
			3.52 (R20)	3.84	—	—	—	0.13
	Insulating concrete form (ICF): ⁽⁴⁾ 150 mm concrete	n/a	n/a	3.52 (R20) ⁽³⁾	3.58	—	—	—
3.73 (R21.2)				3.79	—	—	—	0.18
Pressure-treated wood frame	38 × 140 mm, 203 mm o.c.	3.34 (R19) ⁽³⁾	None	2.33	—	0.65	1.13	1.64
		4.23 (R24)	None	2.62	—	0.36	0.84	1.35

Description of Framing or Material	Size and Spacing of Wood Framing	Thermal Resistance of Insulated Assembly			Minimum Effective Thermal Resistance Required by Article 9.36.2.8. for Wall Assemblies Below-Grade or in Contact with the Ground, (m ² ×K)/W			
		Nominal, (m ² ×K)/W (ft ² ×°F×h/Btu)		Effective, (m ² ×K)/W	1.99	2.98	3.46	3.97
		Insulation in Framing Cavity	Continuous Materials					
					Minimum Nominal Thermal Resistance, ⁽¹⁾ in (m ² ×K)/W, to be Made up by Insulation, Sheathing ⁽²⁾ or Other Materials and Air Film Coefficients			
	38 × 186 mm, 203 mm o.c.	4.93 (R28)	None	2.81	—	0.17	0.65	1.16
	38 × 235 mm, 203 mm o.c.	5.28 (R31)	None	3.86	—	—	—	0.11
	38 × 140 mm, 406 mm o.c.	3.34 (R19) ⁽³⁾	None	2.59	—	0.39	0.87	1.38

Description of Framing or Material	Size and Spacing of Wood Framing	Thermal Resistance of Insulated Assembly			Minimum Effective Thermal Resistance Required by Article 9.36.2.8. for Wall Assemblies Below-Grade or in Contact with the Ground, (m ² ×K)/W			
		Nominal, (m ² ×K)/W (ft ² ×°F×h/Btu)		Effective, (m ² ×K)/W	1.99	2.98	3.46	3.97
		Insulation in Framing Cavity	Continuous Materials	Entire Assembly	Minimum Nominal Thermal Resistance, ⁽¹⁾ in (m ² ×K)/W, to be Made up by Insulation, Sheathing ⁽²⁾ or Other Materials and Air Film Coefficients			
		4.23 (R24)	None	3.00	—	—	0.46	0.97
	38 × 186 mm, 406 mm o.c.	4.93 (R28)	None	3.85	—	—	—	0.12
	38 × 235 mm, 406 mm o.c.	5.28 (R31)	None	4.11	—	—	—	—

Notes to Table [\[A-9.36.2.8.\(1\)-A\]](#) A-9.36.2.8.(1)-A:

- (1) A dash (—) means that no additional materials are needed in order to meet the minimum required effective thermal resistance for the assembly in question; however, sheathing may be required for fastening of cladding or lateral bracing.
- (2) Wood-based sheathing ≥ 11 mm thick generally has a thermal resistance of 0.11 (m²×K)/W (R0.62). However, thicker sheathing may be required for structural stability or fastening of cladding. Note that thinner R0.62 wood-based sheathing products are also available (see Table A-9.36.2.4.(1)-D).

- (3) When RSI 3.52 (R20) insulation batts are installed in 140 mm wood framing, they undergo some compression, which reduces their original RSI value to 3.34 ($\text{m}^2 \times \text{K}/\text{W}$) (R19). However, when they are installed in 152 mm metal framing or in a wood frame that is offset from the back-up wall, R20 batts retain their original thermal resistance value.
- (4) There are many types of ICF designs with different form thicknesses and tie configurations. Where ICF systems incorporate metal ties, thermal bridging should be accounted for.

Tables A-9.36.2.8.(1)-B and A-9.36.2.8.(1)-C can be used to determine the total effective thermal resistance (RSI) value of the framing/cavity portion of a number of typical below-grade wall assemblies as well as some atypical ones not covered in Table A-9.36.2.8.(1)-A. Additional configurations and assembly types are listed in EnergyStar tables available online at www.nrcan.gc.ca/energy/efficiency/housing/new-homes/energy-starr-new-homes-standard/14286.

Select the applicable stud/joist size and spacing and the RSI/R-value of the insulation to obtain the resultant effective RSI value for that frame configuration. If the RSI/R-value of the insulation product to be installed falls between two RSI/R-values listed in the Table, the lower value must be used. Once the effective RSI value of the framing/cavity portion is known, add up the nominal RSI values of all other materials in the assembly (see Table A-9.36.2.4.(1)-D) to obtain the total effective RSI value of the entire assembly. See the calculation examples in Note A-9.36.2.4.(1) for further guidance.

Table [\[A-9.36.2.8.\(1\)-B\]](#) A-9.36.2.8.(1)-B
Effective Thermal Resistance (RSI) Values of the Framing/Cavity Portion of
Pressure-treated Foundation Wall Assemblies

Nominal Thermal Resistance of Cavity Insulation		Size, mm, and Spacing, mm o.c., of Pressure-treated Wood-frame Foundation Wall Assembly					
		38 × 185			38 × 235		
		203	304	406	203	304	406
RSI, ($\text{m}^2 \times \text{K}/\text{W}$)	R, $\text{ft}^2 \times \text{°F} \times \text{h}/\text{Btu}$	Effective Thermal Resistance of Framing/Cavity Portion, ⁽¹⁾ ($\text{m}^2 \times \text{K}/\text{W}$)					
2.11	12	1.95	1.98	2.00	2.08	2.09	2.09
2.29	13	2.06	2.10	2.13	2.21	2.23	2.24
2.47	14	2.17	2.23	2.26	2.34	2.36	2.38
2.64	15	2.27	2.33	2.38	2.45	2.49	2.51
2.82	16	2.36	2.45	2.50	2.57	2.62	2.65

Nominal Thermal Resistance of Cavity Insulation		Size, mm, and Spacing, mm o.c., of Pressure-treated Wood-frame Foundation Wall Assembly					
		38 × 185			38 × 235		
		203	304	406	203	304	406
RSI, (m ² ×K)/W	R, ft ² ×°F×h/Btu	Effective Thermal Resistance of Framing/Cavity Portion, ⁽¹⁾ (m ² ×K)/W					
2.99	17	2.45	2.55	2.61	2.67	2.73	2.77
3.17	18	2.54	2.65	2.72	2.78	2.85	2.90
3.34	19	2.62	2.75	2.83	2.88	2.96	3.02
3.52	20	2.71	2.84	2.93	2.98	3.07	3.14
3.70	21	2.79	2.94	3.04	3.07	3.18	3.26
3.87	22	2.86	3.02	3.13	3.16	3.28	3.37
4.05	23	2.93	3.11	3.23	3.25	3.39	3.48
4.23	24	3.00	3.20	3.32	3.34	3.49	3.59
4.40	25	3.07	3.27	3.41	3.41	3.58	3.69
4.58	26	3.13	3.35	3.50	3.50	3.68	3.79
4.76	27	3.19	3.43	3.59	3.57	3.77	3.90
4.93	28	3.25	3.50	3.67	3.65	3.85	3.99
5.11	29	3.31	3.57	3.75	3.72	3.94	4.09
5.28	30	3.36	3.64	3.83	3.79	4.02	4.18
5.46	31	3.42	3.71	3.90	3.86	4.11	4.27

Note to Table [\[A-9.36.2.8.\(1\)-B\]](#) A-9.36.2.8.(1)-B:

- (1) These RSI values are valid where the cavity is completely filled with insulation and they do not account for air space in the cavity.

Table [\[A-9.36.2.8.\(1\)-C\]](#) A-9.36.2.8.(1)-C
 Effective Thermal Resistance (RSI) Values of the Framing/Cavity Portion of Below-Grade Interior Non-loadbearing Wood-frame Wall Assemblies

Nominal Thermal Resistance of Cavity Insulation		Size, mm, and Spacing, mm o.c., of Below-Grade Interior Non-loadbearing Wood-frame Wall Assembly							
		38 × 89				38 × 140			
		203	304	406	610	203	304	406	610
RSI, (m ² ×K)/W	R, ft ² ×°F×h/Btu	Effective Thermal Resistance of Framing/Cavity Portion, ⁽¹⁾ (m ² ×K)/W							
0.00	0	0.22	0.21	0.20	0.20	—	—	—	—
1.41	8	1.17	1.21	1.24	1.27	—	—	—	—
1.94	11	1.41	1.50	1.55	1.61	—	—	—	—
2.11	12	1.48	1.57	1.64	1.71	—	—	—	—
2.29	13	1.54	1.65	1.73	1.81	—	—	—	—
2.47	14	1.60	1.73	1.81	1.91	—	—	—	—
2.64	15	1.65	1.79	1.89	1.99	—	—	—	—
2.82	16	1.70	1.86	1.96	2.08	2.12	2.24	2.31	2.39
2.99	17	1.75	1.92	2.03	2.16	2.19	2.32	2.41	2.50
3.17	18	1.80	1.97	2.10	2.24	2.27	2.41	2.50	2.61
3.34	19	1.84	2.03	2.16	2.31	2.33	2.49	2.59	2.70
3.52	20	1.88	2.08	2.22	2.39	2.39	2.57	2.68	2.81
3.70	21	1.91	2.13	2.28	2.46	2.46	2.64	2.77	2.90
3.87	22	1.95	2.17	2.33	2.52	2.51	2.71	2.84	2.99
4.05	23	1.98	2.22	2.39	2.59	2.57	2.78	2.93	3.09
4.23	24	2.01	2.26	2.44	2.65	2.62	2.85	3.00	3.18
4.40	25	—	—	—	—	2.67	2.91	3.07	3.26
4.58	26	—	—	—	—	2.72	2.97	3.15	3.34
4.76	27	—	—	—	—	2.77	3.03	3.22	3.42
4.93	28	—	—	—	—	2.81	3.09	3.28	3.50

Note to Table [\[A-9.36.2.8.\(1\)-C\]](#) A-9.36.2.8.(1)-C:

-
- (1) These RSI values are valid where the cavity is completely filled with insulation and they do not account for air space in the cavity. A dash (—) means that it is not feasible to install the cavity insulation listed within the frame configuration in question.
-

Impact analysis

This proposed change would harmonize the use of masonry terminology in the NBC with that in CSA material standards, thereby reducing confusion for Code users.

Enforcement implications

This proposed change could be enforced with the existing enforcement infrastructure.

Who is affected

Designers, engineers, architects, contractors, building officials, manufacturers and suppliers.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NBC20 Div.B 9.36.2.5.(5) (first printing)

[\[9.36.2.5.\]](#) 9.36.2.5. ([\[1\]](#) 5) [F92-OE1.1]

NBC20 Div.B 9.36.2.8.(1) (first printing)

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

[Submit a comment](#)

Proposed Change 1650

Code Reference(s): NECB20 Div.A 1.4.1.2. (first printing)
Subject: Interior Lighting Power
Title: Definition of "Installed Interior Lighting Power"
Description: This proposed change deletes the reference to units from the definition of the term "Installed Interior Lighting Power."
Related Code Change: CCR 1324
Request(s):

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input checked="" type="checkbox"/> Division A | <input type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The defined term "installed interior lighting power" is not harmonized with other defined terms because it specifies the unit (i.e., watts) whereas other defined terms do not.

Justification

Removing the unit (i.e., watts) from the definition of "installed interior lighting power" would provide more consistency with other definitions and better align this definition with that of "interior lighting power allowance."

PROPOSED CHANGE

[1.4.1.2.] 1.4.1.2. Defined Terms

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

Installed interior lighting power means the power, ~~in watts,~~ used by all the lighting systems that are part of the complete *interior lighting* design.

Impact analysis

This proposed change has no cost implications since it clarifies the requirements of the NECB.

Enforcement implications

This proposed change is just a clarification. It could be enforced without any additional resources and has no enforcement implications beyond the practices required to enforce existing provisions.

Who is affected

Designers, specification writers, manufacturers, builders, building owners, building officials and energy advisors.

[Submit a comment](#)

Proposed Change 1662

Code Reference(s): NECB20 Div.B 4.2.4.1. (first printing)
Subject: Exterior Lighting Controls
Title: Programming of Exterior Lighting Controls
Description: This proposed change introduces a requirement for programming that shuts off or reduces power to exterior lighting for buildings after normal daily building activity has ended or after 12 a.m.
Related Code Change Request(s): CCR 1406

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input checked="" type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Although Sentences 4.2.4.1.(1) and (2) address controls for the dusk-to-dawn operation of exterior lighting, no further time-of-use specifications are provided in Article 4.2.4.1. Sentences 4.2.4.1.(4) and (5) provide requirements for exterior lighting controls to reduce power to exterior lighting by 30% or to shut off exterior lighting, but do not specify when the controls should do so. As such, there is a risk that these controls will not be used properly to maximize energy savings.

Justification

This proposed new Sentence 4.2.4.1.(6) would ensure the intended energy savings by adding requirements that further specify when the exterior lighting must be reduced or shut off, beyond general dusk-to-dawn operation:

- The proposed addition of Clause (a) is based on the recommendations of the International Dark Sky Association (IDSA) and ANSI/ASHRAE/IES 90.1, "Energy Standard for Buildings Except Low-Rise Residential Buildings."
- The proposed addition of Clause (b) would require reduced lighting levels after 12 a.m. when activity is reduced in lighting zones 0 to 2, as described in NECB Table 4.2.3.1.-A.

PROPOSED CHANGE

[4.2.4.1.] 4.2.4.1. Requirements

- [1] 1) Except as provided in Sentences (2) and (3), *exterior lighting* shall be controlled by
- [a] a) astronomical time controls,
 - [b] b) photosensors,
 - [c] c) a combination of photosensors and timer shut-off switch, or
 - [d] d) other types of controls that perform the same function as those referred to in Clauses (a) to (c).
- [2] 2) Except as provided in Sentence (3), *exterior lighting* designated for dusk-to-dawn operation shall be controlled by
- [a] a) astronomical time controls, or
 - [b] b) photosensors.
- [3] 3) *Exterior lighting* for covered vehicle *exterior entrances* or *exterior exits* from *buildings* or *storage garages* need not comply with Sentences (1) and (2) where it is required for safety, security, or eye adaptation. (See also Article 4.2.2.2.)
- [4] 4) Except as provided in Sentence (5), all *exterior lighting*, including advertising signage and parking lot lighting, shall be equipped with a device that has the capability to automatically reduce the total connected lighting power by at least 30%.
- [5] 5) *Facade lighting* and *landscape lighting* shall have the capability to shut off automatically.
- [6] --) Controls required by Sentences (4) and (5) shall be programmed to reduce or shut off total connected lighting power no later than:
- [a] --) 1 h after the end of normal *building activity*, or

[b] --) 12 a.m. for buildings located in lighting zones 0 to 2, as described in Table 4.2.3.1.-A.

- [7] 6) All lighting schedule controllers shall be equipped with backup provisions to retain programming and the time setting for at least 10 h during a power outage.

Impact analysis

This proposed change is not expected to impose any additional costs as lighting controls are already required by the Code. The proposed addition provides a means of achieving the intended energy savings.

Enforcement implications

The proposed change can be enforced by the infrastructures currently in place to enforce the Code.

Who is affected

Designers, specification writers, manufacturers, builders, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

- [4.2.4.1.] 4.2.4.1. ([1] 1) [F94-OE1.1]
[4.2.4.1.] 4.2.4.1. ([2] 2) [F94-OE1.1]
[4.2.4.1.] 4.2.4.1. ([3] 3) no attributions
[4.2.4.1.] 4.2.4.1. ([4] 4) [F94-OE1.1]
[4.2.4.1.] 4.2.4.1. ([5] 5) [F94-OE1.1]
[4.2.4.1.] -- ([6] --) [F94-OE1.1]
[4.2.4.1.] 4.2.4.1. ([7] 6) [F94-OE1.1]

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Proposed Change 1671

Code Reference(s):	NECB20 Div.B 5.1.1.4. (first printing)
Subject:	Heating, Ventilating and Air-conditioning Systems - Other
Title:	Definition of "System"
Description:	This proposed change introduces a definition for the term "system" in Part 5 of the NECB.
Related Code Change Request(s):	CCR 1271

This change could potentially affect the following topic areas:

- | | |
|---|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input checked="" type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input checked="" type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The many occurrences of "system" in Part 5 of the NECB appear without any proper guidance on or limitation of the intended meaning of the term. Dictionaries define "system" in many ways, most of which focus on commonality of function. However, this term in Part 5 of the NECB refers to the physically grouped components and parts that have a common intent or function. The multitude of possible meanings leads to ambiguity and inconsistency in the interpretation of certain Code provisions. For example, the meaning of the term "system" in Part 5 of the NECB differs when referring to an "HVAC system" compared to an "energy recovery system."

Justification

Adding a definition for "system" in Part 5 of the NECB will remove ambiguity and promote a common interpretation of the requirements.

PROPOSED CHANGE

[5.1.1.4.] 5.1.1.4. Definitions

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

[2] --) For the purposes of this Part, the term "system" shall mean a combination of interconnected components that are prefabricated or assembled on site and have a common intent or function, such as transforming and distributing energy or controlling those functions, that serves another system, the *building* or part of the *building*. (See Note A-5.1.1.4.(2).)

Note A-5.1.1.4.(2) Definition of "System".

In Part 5, the term "system" can have a very specific, narrow scope or a broad all-encompassing one. For example, the term "mechanical ventilation system" refers to all components represented in the ventilation diagram for a building: outdoor air intakes, components to mix and condition air, fans and distribution system, exhaust air outlets, air-handling unit, space controls, etc. However, the scope of the term "perimeter heating system" could be limited to only the components providing heat to the perimeter zones of the building and controlling the supply of heat to the space, namely: the secondary distribution network and its zone pumps, the baseboards and their zone valves, as well as the room space thermostat and other associated controls. The term "perimeter heating system" refers to a subsystem of the building's main heating system, and the controls serving the main heating system and the perimeter heating system are, in turn, a subset of the building's control system, which also serves the building's other systems, such as the cooling system, air-handling units, etc.

Impact analysis

This proposed change has no additional cost implications as it simply provides clarification.

Enforcement implications

Adding a definition for "system" will result in the more consistent and equitable enforcement of the NECB.

Who is affected

Designers, specification writers, manufacturers, builders, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[5.1.1.4.\]](#) 5.1.1.4. ([\[1\]](#) 1) no attributions

[\[5.1.1.4.\]](#) -- ([\[2\]](#) --) no attributions

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Proposed Change 1723

Code Reference(s):	NECB20 Div.B 5.2.4.2. (first printing)
Subject:	Heating, Ventilating and Air-conditioning Systems - Other
Title:	Motorized Dampers
Description:	This proposed change introduces a requirement for motorized dampers to be insulated.
Related Code Change Request(s):	CCR 897

This change could potentially affect the following topic areas:

- | | |
|---|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input checked="" type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input checked="" type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

When building ventilation systems are in operation and motorized dampers are open to regulate airflow, heat transfer via the dampers is typically not a concern.

However, when the system's air handlers and exhaust fans are not in operation, the motorized dampers allow additional heat transfer, which contributes to energy loss, especially during the heating season.

Justification

To minimize heat transfer when air-handling systems are not in operation, motorized dampers should not only close but should be insulated as well.

PROPOSED CHANGE

NECB20 Div.B 5.2.4.2. (first printing)

[5.2.4.2.] 5.2.4.2. Type and Location of Dampers

- [1] 1) Except as provided in Sentences (34) and (45), dampers required by Article 5.2.4.1. shall be
- [a] a) located as near as possible to the plane of the *building envelope*, and
 - [b] b) designed to close automatically when the HVAC system is not in operation.
- [2] 2) Motorized dampers required in Sentence 5.2.4.1.(1) shall be designed so that, when the damper is in the closed position, airflow does not exceed 15 L/s per m² of cross-sectional area at a pressure differential of 250 Pa, when tested in accordance with
- [a] a) ANSI/AMCA 500-D, "Methods of Testing Dampers for Rating", and
 - [b] b) ANSI/AMCA 500-L, "Methods of Testing Louvers for Rating".
- [3] 2) Motorized dampers required in Sentence 5.2.4.1.(1) shall be thermally insulated to minimize heat transfer when they are in the closed position.
- [4] 3) Dampers required in Article 5.2.4.1. are permitted to be located inboard of the *building envelope*, provided the portion of the duct between the damper and the *building envelope* is insulated in conformance with Sentence 5.2.2.5.(6) for ducts located outdoors.
- [5] 4) Dampers in air intakes and outlets serving air-heating or -cooling equipment located outside of the *building envelope* are permitted to be located within the equipment.

Impact analysis

Insulated motorized dampers generally cost 30-50% more than uninsulated dampers. The price difference decreases for larger dampers.

The cost of insulated motorized dampers ranges from \$150 to \$820 and is not expected to significantly increase the overall cost of the building's HVAC system.

Enforcement implications

This proposed change can be enforced by the infrastructure currently in place to enforce the Code.

Who is affected

Designers, specification writers, manufacturers, builders, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NECB20 Div.B 5.2.4.2. (first printing)

[\[5.2.4.2.\]](#) 5.2.4.2. ([\[1\]](#) 1) [F90,F91,F95-OE1.1]

[\[5.2.4.2. 5.2.4.2.\]](#) 5.2.4.2. ([\[2 3\]](#) 2) [F90,F91,F95-OE1.1]

[\[5.2.4.2. 5.2.4.2.\] 5.2.4.2. \(\[2 3\] 2\)](#) [\[F92,F93-OE1.1\]](#)

[\[5.2.4.2.\]](#) 5.2.4.2. ([\[4\]](#) 3) [F92,F95-OE1.1]

[\[5.2.4.2.\]](#) 5.2.4.2. ([\[5\]](#) 4) no attributions

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Proposed Change 1733

Code Reference(s): NECB20 Div.B 5.2.10.1.(4) (first printing)
Subject: Heating, Ventilating and Air-conditioning Systems - Other
Title: Energy Recovery Systems
Description: This proposed change removes the redundant use of the 50% factor from Sentence 5.2.10.1.(4).
Related Code Change: CCR 1450
Request(s):

This change could potentially affect the following topic areas:

- | | |
|---|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input checked="" type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Sentence 5.2.10.1.(4) has a double "50%" indication and a redundant description of the calculations, which could cause confusion for Code users.

Justification

The proposed change clarifies the Code requirements to avoid misinterpretation.

PROPOSED CHANGE

NECB20 Div.B 5.2.10.1.(4) (first printing)

[5.2.10.1.] 5.2.10.1. Energy Recovery Systems

- [1] 4) Energy recovery systems required by Sentence (1) shall have ~~at least 50% an~~ energy recovery effectiveness, E, of at least 50% calculated using the following equation: ~~determined as a change in the enthalpy of the outdoor air supply equal to 50% of the difference between the outdoor air and return air enthalpies at design conditions:~~

$$E = \frac{h_{OA \text{ entering}} - h_{OA \text{ leaving}}}{h_{OA \text{ entering}} - h_{RA}} \geq 50\%$$

where

$h_{OA \text{ entering}}$ = enthalpy of the outdoor air entering the energy recovery system, kJ/kg dry air (Btu/lb. dry air),
 $h_{OA \text{ leaving}}$ = enthalpy of the outdoor air leaving the energy recovery system, kJ/kg dry air (Btu/lb. dry air), and
 h_{RA} = enthalpy of the return air entering the energy recovery system, kJ/kg dry air (Btu/lb. dry air).

(See Note A-5.2.10.1.(4).)

Impact analysis

This proposed change has no additional cost implications as it simply clarifies Code language.

Enforcement implications

This proposed change can be enforced by the infrastructure currently in place to enforce the Code.

Who is affected

Designers, specification writers, manufacturers, builders, building owners and building officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NECB20 Div.B 5.2.10.1.(4) (first printing)

[5.2.10.1.] 5.2.10.1. ([1] 4) [F95,F100-OE1.1]

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Proposed Change 1725

Code Reference(s):	NECB20 Div.B 8.4.5.2. (first printing) NECB20 Div.B 8.4.5.3. (first printing)
Subject:	Performance Compliance - Other
Title:	Part-Load Performance Characteristics
Description:	This proposed change updates the part-load performance curves for boilers and furnaces.
Related Code Change Request(s):	CCR 954

This change could potentially affect the following topic areas:

- | | |
|---|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input checked="" type="checkbox"/> Energy Efficiency |
| <input checked="" type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| <input type="checkbox"/> Construction and Demolition Sites | |

Problem

Currently, the part-load performance curve for condensing boilers in the NECB is strictly a function of the part-load condition, irrespective of the return-hot-water temperature. The default curve-fitting function of some modeling software has been found not to provide accurate results when converting raw data points into a curve coefficient, which can impact modeling.

Further, once the part-load for condensing boilers is expressed as a function of return-hot-water temperature, the coefficients for modulating boilers and furnaces should also be expressed in a consistent manner.

Justification

A well-documented parameter that influences condensing boiler efficiency is the return-hot-water temperature entering the boiler (or boiler outlet water temperature). This parameter influences the amount of condensation in the boiler stack and thus the boiler's thermal efficiency.

This proposed change would better represent the part-load performance of condensing boilers, while still representing a generic boiler.

Some modeling software programs use return-hot-water temperature, while others use boiler outlet temperature, for modeling the part-load performance curve. To better align the NECB with the current release of CAN-QUEST software (which uses return-hot-water temperature), the curve coefficients appearing in NECB Tables 8.4.5.2.-A and 8.4.5.3. would be those generated by CAN-QUEST's sister software, eQUEST, which models condensing boilers in the same way.

In order to promote uniformity and obtain better modeling for modulating boilers and furnaces, data points representing their part-load performance would be curve-fitted into the equations in Articles 8.4.5.2. and 8.4.5.3. to obtain the applicable curve coefficients.

PROPOSED CHANGE

NECB20 Div.B 8.4.5.2. (first printing)

[8.4.5.2.] 8.4.5.2. Boiler

- [1] 1) The fuel consumption at part-load conditions, $Fuel_{partload}$, in Btu/h, of the reference condensing, ~~or~~ non-condensing or modulating boiler shall be derived by applying an adjustment factor to the fuel consumption at design conditions:

$$Fuel_{partload} = Fuel_{design} \times FHeatPLC$$

where

$Fuel_{design}$ = fuel consumption at design conditions, in Btu/h, and
 $FHeatPLC$ = fuel heating part-load efficiency curve determined in accordance with Sentence (2).

- [2] 2) The fuel heating part-load efficiency curve, $FHeatPLC$, shall be calculated using the following equation:

$$FHeatPLC = a + b \times \frac{Q_{partload}}{Q_{design}} + c \times \left(\frac{Q_{partload}}{Q_{design}} \right)^2$$

$$FHeatPLC = a + b \times \frac{Q_{partload}}{Q_{design}} + c \times \left(\frac{Q_{partload}}{Q_{design}} \right)^2 + d \times T_{w,return} + e \times (T_{w,return})^2 + f \times \left(\frac{Q_{partload}}{Q_{design}} \right) \times T_{w,return}$$

where

$Q_{partload}$ = boiler capacity at part-load conditions, in Btu/h,
 Q_{design} = boiler capacity at design conditions, in Btu/h, ~~and~~
 $T_{w,return}$ = boiler return-hot-water temperature, in °F, and
 a, b, c, d, e, f = applicable coefficients from Table 8.4.5.2.-A.

Table [8.4.5.2.-A] 8.4.5.2.-A
 Coefficients Used in the Calculation of $FHeatPLC$ for Condensing, ~~and~~ Non-Condensing and Modulating Boilers
 Forming Part of Sentence [8.4.5.2.] 8.4.5.2.([2] 2)

Type of Boiler	Coefficients for Calculation of $FHeatPLC$					
	a	b	c	d	e	f
Non-condensing	0.082597	0.996764	-0.079361	0	0	0
Condensing	0.00533 <u>0.09438953</u>	0.904 <u>0.90322417</u>	0.09066 <u>0.01546033</u>	<u>0.00159778</u>	-0.00000645	<u>0.00111432</u>
<u>Modulating</u>	<u>0.01798667</u>	<u>0.96742420</u>	<u>0.01545455</u>	<u>0</u>	<u>0</u>	<u>0</u>

~~[3] 3) For modulating boilers, values for $Q_{partload}/Q_{design}$ and corresponding values for $FHeatPLC$ shall be those listed in Table 8.4.5.2.-B.~~

Table [8.4.5.2.-B] 8.4.5.2.-B
 Values for $Q_{partload}$, Q_{rated} and Q_{design} and $FHeatPLC$ for Modulating Boilers and Furnaces
 Forming Part of Sentences [8.4.5.2.] 8.4.5.2.([3] 3) and 8.4.5.3.(3)

$Q_{partload}$, Q_{rated} and Q_{design} (Part-Load Ratio)	$FHeatPLC$
0.1	0.118
0.2	0.209

Q_{partload}, Q_{rated} and Q_{design} (Part-Load Ratio)	FHeatPLC
0.3	0.308
0.4	0.407
0.5	0.506
0.6	0.605
0.7	0.704
0.8	0.802
0.9	0.901
1	1

NECB20 Div.B 8.4.5.3. (first printing)

[8.4.5.3.] 8.4.5.3. Furnace

- [1] 1) The fuel consumption at part-load conditions, Fuel_{partload}, in Btu/h, of the reference condensing, ~~or~~ atmospheric ~~or modulating~~ furnace shall be derived by applying an adjustment factor to the fuel consumption at rated conditions:

$$\text{Fuel}_{\text{partload}} = \text{Fuel}_{\text{rated}} \times \text{FHeatPLC}$$

where

Fuel_{rated} = fuel consumption at rated conditions, in Btu/h, and
 FHeatPLC = fuel heating part-load efficiency curve determined in accordance with Sentence (2).

- [2] 2) The fuel heating part-load efficiency curve, FHeatPLC, shall be calculated using the following equation:

$$\text{FHeatPLC} = a + b \times \frac{Q_{\text{partload}}}{Q_{\text{rated}}} + c \times \left(\frac{Q_{\text{partload}}}{Q_{\text{rated}}} \right)^2$$

where

Q_{partload} = furnace capacity at part-load conditions, in Btu/h,
 Q_{rated} = furnace capacity at rated conditions, in Btu/h, and
 a, b, c = applicable coefficients from Table 8.4.5.3.

Table **[8.4.5.3.]** 8.4.5.3.

Coefficients Used in the Calculation of FHeatPLC for Condensing, ~~and~~ Atmospheric ~~and Modulating~~ Furnaces Forming Part of Sentence **[8.4.5.3.]** 8.4.5.3.([2] 2)

Type of Furnace	Coefficients for Calculation of FHeatPLC		
	a	b	c
Atmospheric	0.0186100	1.0942090	-0.1128190
Condensing	0.00533	0.904	0.09066
Modulating	0.01798667	0.96742420	0.01545455

- ~~[3] 3) For modulating furnaces, values for Q_{partload}/Q_{rated} and corresponding values for FHeatPLC shall be those listed in Table 8.4.5.2.-B.~~

Impact analysis

The proposed change would improve the part-load performance modeling of condensing and modulating boilers and furnaces, which would minimize the under- or over-estimation of their energy consumption.

Energy modelers who use software that employs different part-load curve parameters would have to adapt these coefficients to their software.

Enforcement implications

This proposed change can be enforced by the existing infrastructure without additional resources and is expected to simplify Code enforcement.

Who is affected

Designers, specification writers, manufacturers, builders, building owners, building officials and energy modelers.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NECB20 Div.B 8.4.5.2. (first printing)

[\[8.4.5.2.\]](#) 8.4.5.2. ([\[1\]](#) 1) [F99-OE1.1]

[\[8.4.5.2.\]](#) 8.4.5.2. ([\[2\]](#) 2) [F99-OE1.1]

~~[\[8.4.5.2.\]](#) 8.4.5.2. ([\[3\]](#) 3) [F99-OE1.1]~~

NECB20 Div.B 8.4.5.3. (first printing)

[\[8.4.5.3.\]](#) 8.4.5.3. ([\[1\]](#) 1) [F99-OE1.1]

[\[8.4.5.3.\]](#) 8.4.5.3. ([\[2\]](#) 2) [F99-OE1.1]

~~[\[8.4.5.3.\]](#) 8.4.5.3. ([\[3\]](#) 3) [F99-OE1.1]~~

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Proposed Change 1660

Code Reference(s):	NFC20 Div.B 2.7.1.4. (first printing)
Subject:	Soft Conversion
Title:	Soft Conversion - Stroke Width Requirement for Signs
Description:	This proposed change addresses the soft conversion of the stroke width requirement for signs. The change is part of a larger package of changes to address the soft conversion of dimensions throughout the Code.
Related Proposed Change(s):	PCF 1240, PCF 1241, PCF 1242

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

There may currently be some confusion in interpreting dimensions in prescriptive requirements of the NFC where the metric values were soft-converted from imperial values. This confusion could potentially result in difficulty enforcing these requirements. Not considering the possibility that some of the prescriptive metric values in the Code were soft-converted and rounded from exact imperial values could create a situation where commonly available building products would not conform with a strict interpretation of the metric values.

Justification

The intent of this minor change is to clarify that signs are permitted to have lettering with a ½ inch stroke width, which is commonly used by industry. A strict interpretation of the existing provision would only allow a stroke width of exactly 12 mm, which is not the intent of the provision. The proposed change permits lettering with a stroke width not less than 12 mm, which would allow a stroke width of ½ inch (corresponding to an exact metric conversion of 12.7 mm).

EXISTING PROVISION

2.7.1.4. Signs

- 1) In *assembly occupancies* with *occupant loads* exceeding 60 persons, the *occupant load* shall be posted in conspicuous locations near the principal entrances to the room or *floor area*.
- 2) Signs required by the NBC to indicate the *occupant load* for a *floor area* shall be posted in conspicuous locations near the principal entrances to the *floor area*. (See Note A-2.7.1.4.(2).)
- 3) Signs required in Sentences (1) and (2) shall have lettering not less than 50 mm high with a 12 mm stroke.

Note A-2.7.1.4.(2)

Sentence 3.1.17.1.(2) of Division B of the NBC requires that the occupant load used in the design of a floor area be posted if it differs from that determined by Table 3.1.17.1. of Division B of the NBC.

PROPOSED CHANGE

[2.7.1.4.] 2.7.1.4. Signs

- [1] 1) In *assembly occupancies* with *occupant loads* exceeding 60 persons, the *occupant load* shall be posted in conspicuous locations near the principal entrances to the room or *floor area*.
- [2] 2) Signs required by the NBC to indicate the *occupant load* for a *floor area* shall be posted in conspicuous locations near the principal entrances to the *floor area*. (See Note A-2.7.1.4.(2).)
- [3] 3) Signs required in Sentences (1) and (2) shall have lettering not less than 50 mm high with a ~~12 mm~~ stroke not less than 12 mm wide.

Impact analysis

This proposed change would allow for more flexibility in stroke width dimensions, thus allowing commonly used sizes (e.g., 1/2 inch) to comply. No additional costs are expected.

Enforcement implications

This proposed change facilitates enforcement of the stroke width requirement and can be enforced by the infrastructure currently available to enforce this Code.

Who is affected

Architects, engineers, designers, regulators, building officials and fire services.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[2.7.1.4.\]](#) 2.7.1.4. ([1] 1) [F10-OS3.7]

[\[2.7.1.4.\]](#) 2.7.1.4. ([2] 2) [F10-OS3.7]

[\[2.7.1.4.\]](#) 2.7.1.4. ([3] 3) [F10-OS3.7]

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Proposed Change 1751

Code Reference(s):	NFC20 Div.B 2.7.1.5. (first printing)
Subject:	Other
Title:	Requirements for Non-fixed Seating in Assembly Occupancies
Description:	This proposed change updates the NFC requirements for non-fixed seating in assembly occupancies and introduces an explanatory Note regarding standing-only spaces in assembly occupancies.
Related Proposed Change(s):	PCF 1752

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input checked="" type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

In the 1965 edition of the NBC, prescriptive requirements relating to seating configurations in assembly occupancies (arenas, concert halls, stadium, etc.) were introduced in Subsection 3.3.2., but have not been updated to meet evolving needs over time. In most cases, designs are optimized to make a venue profitable. Designers develop optimized seating configurations that comply with more up-to-date American regulations (i.e., NFPA 101), which are based on Canadian research, as an alternative solution to the NBC requirements, and must therefore demonstrate that the seating configurations chosen offer the same level of safety as the NBC's acceptable solutions. In response to this observed trend, a transitory solution was developed for the 2010

edition of the NBC, which involved referencing a series of specific provisions from NFPA 101, "Life Safety Code," as an exception to the NBC requirements. This transitory solution was intended to be reviewed and refined in a future Code cycle.

Since the introduction of the transitory solution, authorities having jurisdiction have raised concerns about enforcement difficulties and the lack of technical detail in the NFPA 101 provisions. Differences have also been noted between the terminology used in the individually referenced NFPA 101 provisions and that used in the NBC provisions. As such, the provisions should be updated to address these concerns.

While these issues have an impact on both indoor and outdoor places of assembly, the focus of this proposed change is on indoor places of assembly; outdoor places of assembly are intended to be further reviewed separately.

PCF 1752 (NBC 2020) presents proposed changes to the requirements for assembly seating. For consistency, the current proposed change proposes updates to the requirements for non-fixed seating and introduces an explanatory note regarding the management of assembly areas where standing-only spaces are provided rather than fixed or non-fixed seating.

Justification

Some specific NFPA 101 provisions referenced in NBC Subsection 3.3.2. contain nested references to other elements of the standard that present underlying assumptions about the overall design of the building, making it difficult to correctly apply the NFPA 101 provisions outlined in the NBC and NFC. The proposed changes to the NBC 2020 (PCF 1752) and to the NFC 2020 (PCF 1751) clearly outline the seating configurations, aisle features and guard requirements required for assembly occupancies. This PCF updates the NFC requirements for consistency with the proposed changes in PCF 1752.

It is acknowledged that some assembly occupancies may present unusual design constraints that are not all intended to be addressed by the Code's acceptable solutions. As such, an explanatory note that points Code users to NFPA 101 as a useful resource for such circumstances is introduced in this PCF.

EXISTING PROVISION

NFC20 Div.B 2.7.1.5. (first printing)

2.7.1.5. Nonfixed Seating

- 1) When nonfixed seats are provided in *assembly occupancies*,
 - a) except as provided in Sentence (3), the seats shall be arranged in rows having an unobstructed passage of not less than 400 mm

- between rows measured horizontally between plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row behind in the unoccupied position,
- b) except as provided in Sentence (2), aisles shall be located so that there are not more than 7 seats between every seat and the nearest aisle,
 - c) except as provided in Sentence (2), the clear width of an aisle in millimetres shall be not less than the greater of 1 100 or the product of the number of seats served by that aisle and 6.1,
 - d) the width of an aisle is permitted to be reduced to not less than 750 mm when serving 60 seats or fewer,
 - e) dead-end aisles shall not be longer than 6 m, and
 - f) except as provided in Sentence (3), when the *occupant load* exceeds 200 persons,
 - i) the seats in a row shall be fastened together in units of no fewer than 8 seats, or
 - ii) where there are 7 seats or fewer in a row, all the seats in the row shall be fastened together.
- 2) When nonfixed seats are provided in outdoor *assembly occupancies*,
- a) aisles shall be located so that there are not more than 15 seats between every seat and the nearest aisle, and
 - b) the clear width of an aisle in millimetres shall be not less than the greater of 1 200 or the product of the number of seats served by that aisle and 1.8.
- 3) When nonfixed seats are provided at tables arranged in rows, the spacing between the nearest edges of tables in 2 successive rows shall be not less than
- a) 1 400 mm where seating is arranged on both sides of tables (back to back), or
 - b) 1 000 mm where seating is on one side only.

PROPOSED CHANGE

NFC20 Div.B 2.7.1.5. (first printing)

[\[2.7.1.5.\]](#) 2.7.1.5. Non-fixed Seating

[\(See Note A-2.7.1.5.\)](#)

- [\[1\]](#) 1) When non-fixed seats are provided in *assembly occupancies*,
- [a] a) except as provided in Sentence (3), the seats shall be arranged in rows having a [clear width](#) ~~n-unobstructed passage of not less than 400 mm between rows~~ measured horizontally between [vertical](#)

- ~~planes~~plumb lines from the backs of the seats in one row and the edges of the furthest forward projection of the seats in the next row behind in the unoccupied position ~~of,~~
- [i] --) not less than 400 mm for rows with 26 seats or fewer, or
[ii] --) 400 mm plus 6.1 mm for each additional seat in excess of 26 seats, but needs not exceed 560 mm
- [b] --) the number of seats in rows served by an aisle at each end shall not exceed 100 seats,
- [c] b) where a row of seats is served by an aisle at one end only, the distance between any seat in a row and the aisle shall not exceed 9000 mm,~~except as provided in Sentence (2), aisles shall be located so that there are not more than 7 seats between every seat and the nearest aisle,~~
- [d] c) ~~except as provided in Sentence (2),~~ the minimum clear width of an aisle ~~in millimetres~~ shall be sufficient to provide egress capacity in accordance with Subsection 3.4.3. of Division B of the NBC 2020, ~~but shall be not less than~~not less than the greater of 1 100 or the product of the number of seats served by that aisle and 6.1,
- [i] --) 1 100 mm,
[ii] --) 750 mm if serving not more than 60 seats, or
[iii] --) 900 mm if serving seats on one side only.
- ~~[e] d) the width of an aisle is permitted to be reduced to not less than 750 mm when serving 60 seats or fewer,~~
- [f] e) dead-end aisles shall not be longer than 6 m, unless there are not more than 24 seats between any seat in the row served by the dead-end aisle and another aisle measured along a row of seats (see Note A-3.3.2.5.(5)-2025 of Division B of the NBC), and
- [g] f) except as provided in Sentence (3), when the *occupant load* exceeds 200 ~~persons,~~
- [i] i) the seats in a row shall be fastened together in units of no fewer than 8 seats, or
- [ii] ii) where there are 7 seats or fewer in a row, all the seats in the row shall be fastened together.
- [2] 2) When non-fixed seats are provided in outdoor *assembly occupancies,*
~~[a] a) aisles shall be located so that there are not more than 15 seats between every seat and the nearest aisle, and~~
- [b] b) the clear width of an aisle in millimetres shall be not less than the greater of 1 200 or the product of the number of seats served by that aisle and 1.8.
- [3] 3) When non-fixed seats are provided at tables arranged in rows, the spacing between the nearest edges of tables in 2 successive rows shall be not less than

- [a] a) 1 400 mm where seating is arranged on both sides of tables (back to back), or
- [b] b) 1 000 mm where seating is on one side only.

Note A-2.7.1.5.

Local authorities having jurisdictions may need to be consulted where assembly occupancies contain standing-only spaces rather than fixed or non-fixed seating, such as in front of some concert stages. The emergency planning measures required by Section 2.8. should consider standing-only spaces. Additional guidance on relevant safety considerations can be found in NFPA 101, "Life Safety Code."

Impact analysis

This proposed change updates the requirements for non-fixed seating to match the proposed changes to the requirements for fixed seating in the NBC (see PCF 1752).

Clarification of the acceptable solutions and removal of the references to specific NFPA 101 provisions in the NBC (and similar requirements for non-fixed seating in the NFC) make it easier for:

- designers to comply with acceptable solutions of the Codes and develop alternative solutions, where applicable;
- owners to better understand the limitations and to address safety objectives that may influence the design and impact potential profit; and
- authorities having jurisdiction to enforce a clearer list of requirements for assembly occupancy designs and to review and evaluate proposed alternative solutions.

These benefits could result in cost and time savings during the construction and design process.

For some longer rows of fixed seats (more than 26 seats), additional space between rows may be needed in accordance with NBC Article 3.3.2.4.: 400 mm as the base spacing, plus 6.1 mm per additional seat up to a maximum of 560 mm. This could reduce the total available space for seats in the assembly occupancy, depending on the intended seating plan. Although these requirements may widen required row spacing, such designs would also reduce the number of required aisles, compensating for this increase in row spacing.

Some of the proposed changes serve only to clarify the existing requirements and the Code's intent with a view to improving consistency in the application and enforcement of the provisions. Other ones update the requirements for consistency with other similar requirements in the Codes.

The change in the maximum length of rows served by only one aisle and the change in the maximum length of dead-end aisles may be perceived as relaxations of the safety levels achieved by existing NBC requirements. However, these updated requirements were already allowed by reference to NFPA 101 in the NBC.

The proposed explanatory Note highlights the potential regulatory and safety considerations associated with a common design choice: an open area where people can stand while watching a stage show in assembly occupancies such as concert halls.

Enforcement implications

This proposed change will facilitate enforcement by clarifying the requirements. This change can be enforced by building officials using visual inspection and basic measurement tools (i.e., the infrastructure currently available to enforce this Code).

Who is affected

Designers, architects and builders, whose designs and construction projects will be able to meet clearer requirements while following current industry practice.

Building owners, who will have clearer building design requirements related to safety that may impact some of their other objectives, such as optimization of space for profit.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NFC20 Div.B 2.7.1.5. (first printing)

[\[2.7.1.5.\]](#) 2.7.1.5. ([\[1\]](#) 1) [F10-OS3.7]

[\[2.7.1.5.\]](#) 2.7.1.5. ([\[2\]](#) 2) [F10-OS3.7]

[\[2.7.1.5.\]](#) 2.7.1.5. ([\[3\]](#) 3) [F10-OS3.7]

[Submit a comment](#)

Proposed Change 1683

Code Reference(s):	NFC20 Div.B 4.3.5.2. (first printing)
Subject:	Storage Tanks
Title:	Termination of the Emergency Vents of Secondary Containments in Double-walled Storage Tanks
Description:	This proposed change introduces an exception in Sentence 4.3.5.2.(3) for emergency vents connected to the secondary containment of a double-walled storage tank.
Related Code Change Request(s):	CCR 1538

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input checked="" type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

The City of Calgary Fire Department raised the following issue: The NFC does not distinguish between the termination of the emergency vent on tank compartments that contain flammable or combustible liquids and the termination of the emergency vent on the secondary containment of double-walled storage tanks located indoors that do not contain such liquids.

The Code requirement needs to be clarified by differentiating between an emergency vent that must terminate outside the building and one that, if activated indoors, will have no harmful consequences.

Justification

The clarification afforded by this proposed change would harmonize the NFC with Clause 10.5.2.2 of CSA B139 Series:19, "Installation code for oil-burning equipment," which states: "For tanks provided with secondary containment, where the secondary enclosure is provided with an emergency vent, the secondary containment emergency vent is not required to terminate to the outdoors."

Double-walled or contained tanks have one or more compartments that contain flammable and/or combustible liquids (primary containment) as well as a chamber that does not normally contain liquid (secondary containment) to capture liquid that may escape the primary containment. Failure of the primary containment, which is usually caused by corrosion, is extremely rare and would be noticed quickly by inventory control operations or gauge notification.

The primary containment has normal vents to manage pressures related to the normal operation of the tank. In addition, the primary containment and the secondary containment both have emergency vents that activate only when the tank is subjected to intense heat, e.g., when a fire is in close proximity to the tank. The emergency vents on the primary containment are designed to relieve excessive pressure that might result in an explosion and add fuel to the fire. The emergency vent of the secondary containment would also open under excessive pressure, but in that case only air or inert brine vapours would be released into the building without affecting the intensity or spread of the fire. In fact, extending the emergency vent of the secondary containment to the exterior of the building may risk increasing the fire's intensity and spread. Weather conditions and interference from wildlife (e.g., birds) may partially or completely block the vent outlet of vents that terminate outdoors. Terminating the secondary containment emergency vent indoors eliminates the risk of vent outlet blockage and ensures excessive air pressure can be released.

PROPOSED CHANGE

[4.3.5.2.] 4.3.5.2. Location of Vent Pipe Outlets

- [1] 1) Normal vent pipe outlets for *storage tanks* of Class I liquids
 - [a] a) shall be located outside *buildings* not less than
 - [i] i) 3.5 m above the adjacent ground level, and
 - [ii] ii) 1.5 m from any *building* opening, and
 - [b] b) shall discharge so that flammable vapours will not enter the *building* or be trapped near any part of the *building*.
- [2] 2) Normal vent pipe outlets for *storage tanks* of Class II or IIIA liquids shall discharge outside *buildings* not less than
 - [a] a) 2 m above the adjacent ground level, and

[b] b) 1.5 m from any *building* opening.

- [3] 3) Except for emergency vent outlets connected to a secondary containment of a double-walled storage tank, emergency vent outlets for *storage tanks* shall discharge outside *buildings* not less than 1.5 m from any *building* opening and from any combustible component of any *building's* exterior wall.

Impact analysis

No additional costs would be incurred by users of the NFC with this proposed change. For the fire personnel that interpret the Code without differentiating between an emergency vent for a compartment containing flammable and/or combustible liquids or not, this proposed change would prevent unnecessary installation costs resulting from extending the emergency vent of the secondary containment to the exterior of the building.

Enforcement implications

This proposed change would clarify the provision to facilitate interpretation by fire officials, design engineers and contractors regarding the intended termination point for secondary containment emergency vents.

Who is affected

Regulators, designers, contractors and building owners.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[4.3.5.2.] 4.3.5.2. ([1] 1) [F01-OS1.1]

[4.3.5.2.] 4.3.5.2. ([2] 2) [F01-OS1.1]

[4.3.5.2.] 4.3.5.2. ([3] 3) [F01-OS1.1]

[Submit a comment](#)

Proposed Change 1691

Code Reference(s):	NFC20 Div.B 4.3.11.3.(2) (first printing)
Subject:	Storage Tanks
Title:	Vent Pipe Outlets for Underground Storage Tanks
Description:	This proposed change introduces an additional requirement for vent pipe outlets for underground storage tanks of combustible liquids for consistency with the requirements for aboveground storage tanks.
Related Proposed Change(s):	PCF 1776

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input type="checkbox"/> Building operations | <input type="checkbox"/> Housing |
| <input type="checkbox"/> Small Buildings | <input type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Vent pipe outlets for outdoor aboveground storage tanks of combustible liquids are required to discharge 1.5 m from any building openings in accordance with Clause 4.3.5.2.(2)(b). In contrast, vent pipe outlets for underground storage tanks of combustible liquids, which are addressed in Sentence 4.3.11.3.(2), are not required to do so. The inconsistent requirements for vent pipe outlets could lead to aboveground and underground storage tanks presenting different levels of risk.

Sentence 4.3.11.3.(2) currently permits a vent pipe outlet for an underground storage tank to be located within 1.5 m of a building opening as long as the outlet is outside the building, above the fill pipe opening, and 2 m above finished ground. However, the vent pipe outlet being within 1.5 m of a building opening could lead to re-entry of the

released vapour into the building through the opening. The Code should address this potential hazard to ensure that consistent requirements are provided for aboveground and underground storage tanks.

Justification

A Working Group (WG) was formed by the Standing Committee on Hazardous Materials and Activities to review the inconsistent requirements and to address the issue identified in the Problem section.

To limit the probability that vapours released from a vent pipe outlet for an underground storage tank will re-enter the building through an adjacent building opening, the same discharge location requirement stated in Clause 4.3.5.2.(2)(b) should be introduced in Sentence 4.3.11.3.(2) to provide the same level of safety for both aboveground and underground storage tanks. The proposed separation distance of at least 1.5 m is considered an appropriate minimum distance at which the released vapours are unlikely to re-enter the building.

PROPOSED CHANGE

[4.3.11.3.] 4.3.11.3. Installation

[1] 2) Vent pipe outlets for underground *storage tanks* of Class II or IIIA liquids shall be located outside *buildings* ~~at a height that is above the fill pipe opening but not less than 2 m above finished ground level.~~

[a] --) above the fill pipe opening.

[b] --) not less than 2 m above finished ground level, and

[c] --) not less than 1.5 m from any *building* opening.

Impact analysis

The WG did not anticipate that the proposed change would have a significant impact on costs or compliance. At the design stage, the building owner and consultant would need to comply with the requirement by selecting an appropriate location for the vent pipe outlet. This proposed change should not be applied retroactively to existing underground storage tanks.

Enforcement implications

The proposed change could be enforced using existing enforcement infrastructure.

Who is affected

Designers, manufacturers, contractors, building owners, building officials and fire officials.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[\[4.3.11.3.\]](#) 4.3.11.3. ([1] 2) [F01-OS1.1]

[\[4.3.11.3.\]](#) 4.3.11.3. ([1] 2) [F43-OS1.1]

[\[4.3.11.3.\]](#) 4.3.11.3. ([1] 2) [F01-OS1.1]

[\[4.3.11.3.\]](#) 4.3.11.3. ([1] 2) [F43-OH5]

[Submit a comment](#)

Proposed Change 1716

Code Reference(s):	NPC20 Div.B 2.2.6.10. (first printing) NPC20 Div.B 2.2.6.11. (first printing) NPC20 Div.B 2.2.6.12. (first printing) NPC20 Div.B 2.2.6.13. (first printing) NPC20 Div.B 2.2.6.14. (first printing) NPC20 Div.B 2.2.7.1. (first printing) NPC20 Div.B 2.2.7.2. (first printing) NPC20 Div.B 2.2.7.3. (first printing) NPC20 Div.B 2.2.7.4. (first printing) NPC20 Div.B 2.2.7.6. (first printing) NPC20 Div.B 2.2.7.7. (first printing) NPC20 Div.B 2.2.9. (first printing) NPC20 Div.B 2.2.10. (first printing)
Subject:	Materials and Equipment
Title:	Protection of Potable Water from Chemical Contamination
Description:	This proposed change adds references to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects," for the protection of potable water from chemical contamination.
Related Code Change Request(s):	CCR 1577

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input checked="" type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input checked="" type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

Currently, the National Plumbing Code (NPC) does not cover the protection of health from products used in a potable water system by direct reference to a standard. Some product standards that are referenced in the NPC indirectly address this protection of health by reference to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects." However, many other product standards referenced in the NPC do not. NSF/ANSI/CAN 61-2020 should be directly referenced in the NPC to address the risk of consumption of potable water contaminated by chemicals from products used in a potable water system.

Justification

This proposed change would mitigate the risk of consumption of potable water that is chemically contaminated through direct reference to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects," for each product whose product standard does not directly address the protection of health.

NSF/ANSI/CAN 61 is the Canadian National Standard that establishes the minimum requirements for the protection of health from the chemical contaminants and impurities that are imparted indirectly to potable water from the products, components and materials used in a potable water system.

In the U.S., NSF/ANSI/CAN 61 is referenced by all model plumbing codes and most State regulations for water works. In Canada, 11 Provinces and Territories have regulations or policies that require NSF/ANSI/CAN 61 relating to municipal systems or the construction of wells.

PROPOSED CHANGE

NPC20 Div.B 2.2.6.10. (first printing)

[2.2.6.10.] 2.2.6.10. Stainless Steel Pipe

- [1] 1) Stainless steel pipe shall conform to
- [a] a) ASME B36.19M, "Stainless Steel Pipe", and
 - [b] b) ASTM A312/A312M, "Standard Specification for Seamless, Welded, and Heavily Cold Worked Austenitic Stainless Steel Pipes".

[2] --) *Stainless steel pipe used in a potable water system shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."*

- [3] 2) Only grade 304/304L or 316/316L stainless steel pipe shall be used.

NPC20 Div.B 2.2.6.11. (first printing)

[2.2.6.11.] 2.2.6.11. Stainless Steel Butt Weld Pipe Fittings

- [1] 1) Stainless steel butt weld pipe fittings shall conform to
- [a] a) ASME B16.9, "Factory-Made Wrought Buttwelding Fittings", and
 - [b] b) ASTM A403/A403M, "Standard Specification for Wrought Austenitic Stainless Steel Piping Fittings".

[2] --) Stainless steel butt weld pipe fittings used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

- [3] 2) Stainless steel butt weld pipe fittings shall be made of a material that matches the grade of the pipe material used.
-

NPC20 Div.B 2.2.6.12. (first printing)

[2.2.6.12.] 2.2.6.12. Stainless Steel Pipe Flanges

- [1] 1) Stainless steel pipe flanges shall conform to ASME B16.5, "Pipe Flanges and Flanged Fittings: NPS ½ through NPS 24 Metric/Inch Standard", and
- [a] a) ASTM A182/A182M, "Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service", or
 - [b] b) ANSI/AWWA C228, "Stainless-Steel Pipe Flanges for Water Service – Sizes 2 in. through 72 in. (50 mm through 1,800 mm)".

[2] --) Stainless steel pipe flanges used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

- [3] 2) Stainless steel pipe flanges shall be made of a material that matches the grade of the pipe material used.
-

NPC20 Div.B 2.2.6.13. (first printing)

[2.2.6.13.] 2.2.6.13. Stainless Steel Threaded Fittings

- [1] 1) Stainless steel threaded fittings shall be schedule 40s or greater conforming to
- [a] a) ASTM A182/A182M, "Standard Specification for Forged or Rolled Alloy and Stainless Steel Pipe Flanges, Forged Fittings, and Valves and Parts for High-Temperature Service", or
 - [b] b) ASTM A351/A351M, "Standard Specification for Castings, Austenitic, for Pressure-Containing Parts".

[2] --) Stainless steel threaded fittings used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

- [3] 2) Stainless steel threaded fittings shall be made of a material that matches the grade of the pipe material used.

NPC20 Div.B 2.2.6.14. (first printing)

[2.2.6.14.] 2.2.6.14. Stainless Steel Tube

- [1] 1) Stainless steel tube shall conform to
- [a] a) ASME B16.9, "Factory-Made Wrought Buttwelding Fittings", and
 - [b] b) ASTM A269/A269M, "Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service".

~~[2] --) Stainless steel tube used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."~~

- [3] 2) Only grade 304/304L or 316/316L stainless steel tube shall be used.
-

NPC20 Div.B 2.2.7.1. (first printing)

[2.2.7.1.] 2.2.7.1. Copper and Brass Pipe

- [1] 1) Copper pipe shall conform to
- [a] a) ASTM B42, "Standard Specification for Seamless Copper Pipe, Standard Sizes", and
 - [b] b) Table 2.2.7.4.

- [2] 2) Brass pipe shall conform to ASTM B43, "Standard Specification for Seamless Red Brass Pipe, Standard Sizes".

~~[3] --) Copper and brass pipe used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."~~

NPC20 Div.B 2.2.7.2. (first printing)

[2.2.7.2.] 2.2.7.2. Brass or Bronze Pipe Flanges and Flanged Fittings

- [1] 1) Brass or bronze pipe flanges and flanged fittings shall conform to ASME B16.24, "Cast Copper Alloy Pipe Flanges, Flanged Fittings, and Valves: Classes 150, 300, 600, 900, 1500, and 2500".

~~[2] --) Brass or bronze pipe flanges and flanged fittings used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."~~

NPC20 Div.B 2.2.7.3. (first printing)

[2.2.7.3.] 2.2.7.3. Brass or Bronze Threaded Water Fittings

- [1] 1) Brass or bronze threaded water fittings shall conform to ASME B16.15, "Cast Copper Alloy Threaded Fittings: Classes 125 and 250".

~~[2] --) Brass or bronze threaded water fittings used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."~~

- [3] 2) Brass or bronze threaded water fittings shall not be used in a *drainage system*.

NPC20 Div.B 2.2.7.4. (first printing)

[2.2.7.4.] 2.2.7.4. Copper Tube

- [1] 1) Copper tube shall conform to
- [a] a) ASTM B88, "Standard Specification for Seamless Copper Water Tube", or
 - [b] b) ASTM B306, "Standard Specification for Copper Drainage Tube (DWV)".

[2] --) Where copper tube permitted by Table 2.2.7.4. is used in a *potable water system*, the copper tube shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

- [3] 2) Except as provided in Sentence (4~~3~~), the use of copper tube shall conform to Table 2.2.7.4.
- [4] 3) Copper tube shall not be used for the *fixture drain* or the portion of the *vent pipe* below the *flood level rim* of a urinal.

Table [2.2.7.4.] 2.2.7.4.
Permitted Use of Copper Tube and Pipe
Forming Part of Sentences 2.2.7.1.(1) and [2.2.7.4.] 2.2.7.4.([3] 2)

Type of Copper Tube or Pipe	Plumbing Purposes ⁽¹⁾							
	Water Service Pipe	Water Distribution System		Building Sewer	Drainage System		Venting System	
		Under-ground	Above-ground		Under-ground	Above-ground	Under-ground	Above-ground
K & L hard temper	N	N	P	P	P	P	P	P
K & L soft temper	P	P	P	N	N	N	N	N
M hard temper	N	N	P	N	N	P	N	P
M soft temper	N	N	N	N	N	N	N	N
DWV	N	N	N	N	N	P	N	P

Note to Table [2.2.7.4.] 2.2.7.4.:

- (1) P = permitted and N = not permitted.

NPC20 Div.B 2.2.7.6. (first printing)

[2.2.7.6.] 2.2.7.6. Solder-Joint Water Fittings

- [1] 1) Except as provided in Sentence (2), solder-joint fittings used in a *water system* shall conform to
 - [a] a) ASME B16.18, "Cast Copper Alloy Solder-Joint Pressure Fittings", or
 - [b] b) ASME B16.22, "Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings".
- [2] 2) Solder-joint fittings used in a *water system* not made by casting or the wrought process shall conform to the applicable requirements of ASME B16.18, "Cast Copper Alloy Solder-Joint Pressure Fittings".

[3] --) Solder-joint fittings used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

NPC20 Div.B 2.2.7.7. (first printing)

[2.2.7.7.] 2.2.7.7. Flared-Joint Fittings used in a Copper Water System

- [1] 1) Flared-joint fittings used in a copper tube *water system* shall conform to ASME B16.26, "Cast Copper Alloy Fittings for Flared Copper Tubes".
- [2] 2) Flared-joint fittings used in a copper tube *water system* not made by casting shall conform to the applicable requirements of ASME B16.26, "Cast Copper Alloy Fittings for Flared Copper Tubes".

[3] --) Flared-joint fittings used in a copper tube *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

NPC20 Div.B 2.2.9. (first printing)

[2.2.9.] 2.2.9. Jointing Materials

[2.2.9.1.] 2.2.9.1. Cement Mortar

[2.2.9.2.] 2.2.9.2. Solders and Fluxes

- [1] 1) Solders for solder joint fittings shall conform to ASTM B32, "Standard Specification for Solder Metal".
- [2] 2) Solders and fluxes having a lead content in excess of 0.2% shall not be used in a *potable water system*.

[3] --) Solders and fluxes used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

- [4] 3) Fluxes for soldered joints shall conform to ASTM B813, "Standard Specification for Liquid and Paste Fluxes for Soldering of Copper and Copper Alloy Tube".

- [5] 4) Brazing alloys shall conform to ANSI/AWS A5.8M/A5.8, "Specification for Filler Metals for Brazing and Braze Welding", BCuP range.

[2.2.9.3.] --- Filler Metals

- [1] --) Filler metals for stainless steel welded joints used in a *potable water system* shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

NPC20 Div.B 2.2.10. (first printing)

[2.2.10.] 2.2.10. Miscellaneous Materials

[2.2.10.1.] 2.2.10.1. Brass Floor Flanges

[2.2.10.2.] 2.2.10.2. Screws, Bolts, Nuts and Washers

[2.2.10.3.] 2.2.10.3. Cleanout Fittings

[2.2.10.4.] 2.2.10.4. Mechanical Couplings

[2.2.10.5.] 2.2.10.5. Saddle Hubs

[2.2.10.6.] 2.2.10.6. Valves, and Supply and Waste Fittings

[2.2.10.7.] 2.2.10.7. Water Temperature Control

[2.2.10.8.] 2.2.10.8. Direct Flush Valves

[2.2.10.9.] 2.2.10.9. Drinking Fountain Bubblers

[2.2.10.10.] 2.2.10.10. Back-Siphonage Preventers and Backflow Preventers

[2.2.10.11.] 2.2.10.11. Relief Valves

[2.2.10.12.] 2.2.10.12. Reducing Valves

[2.2.10.13.] 2.2.10.13. Solar Domestic Hot Water

[2.2.10.14.] 2.2.10.14. Vent Pipe Flashing

[2.2.10.15.] 2.2.10.15. Water Hammer Arresters

[2.2.10.16.] 2.2.10.16. Air Admittance Valves

[2.2.10.17.] 2.2.10.17. Water Treatment Systems

[2.2.10.18.] --- **Storage Tanks**

[1] --) Except for tank-type water closets and storage-type service water heaters, where storage tanks are used in a potable water system, they shall conform to NSF/ANSI/CAN 61-2020, "Drinking Water System Components - Health Effects."

[\[2.2.10.19.\]](#) 2.2.10.18. Flexible Water Connectors

Impact analysis

Since products conforming to NSF/ANSI/CAN 61 are available on the market, no cost increase would be incurred by the end user as a result of this proposed change. However, costs associated with compliance, including certification, may be expected for some manufacturers.

Enforcement implications

This proposed change can be enforced by the infrastructure currently in place to enforce the Code. This proposed change may require further training of inspectors regarding component marking and required documentation to show conformance.

Who is affected

Manufacturers, who may be affected by costs related to conformance.

Authorities having jurisdiction, designers, engineers and builders, who may have to be trained.

Building occupants, who are expected to receive health benefits.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

NPC20 Div.B 2.2.6.10. (first printing)

[\[2.2.6.10.\]](#) 2.2.6.10. ([1] 1) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.10.\]](#) 2.2.6.10. ([1] 1) [F80-OP5]

[\[2.2.6.10.\]](#) -- ([2] --) [\[F46-OH2.2\]](#)

[\[2.2.6.10.\]](#) 2.2.6.10. ([3] 2) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.10.\]](#) 2.2.6.10. ([3] 2) [F80-OP5]

NPC20 Div.B 2.2.6.11. (first printing)

[\[2.2.6.11.\]](#) 2.2.6.11. ([1] 1) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.11.\]](#) 2.2.6.11. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.6.11.\]](#) -- ([\[2\]](#) --) [\[F46-OH2.2\]](#)

[\[2.2.6.11.\]](#) 2.2.6.11. ([\[3\]](#) 2) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.11.\]](#) 2.2.6.11. ([\[3\]](#) 2) [F80-OP5]

NPC20 Div.B 2.2.6.12. (first printing)

[\[2.2.6.12.\]](#) 2.2.6.12. ([\[1\]](#) 1) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.12.\]](#) 2.2.6.12. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.6.12.\]](#) -- ([\[2\]](#) --) [\[F46-OH2.2\]](#)

[\[2.2.6.12.\]](#) 2.2.6.12. ([\[3\]](#) 2) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.12.\]](#) 2.2.6.12. ([\[3\]](#) 2) [F80-OP5]

NPC20 Div.B 2.2.6.13. (first printing)

[\[2.2.6.13.\]](#) 2.2.6.13. ([\[1\]](#) 1) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.13.\]](#) 2.2.6.13. ([\[1\]](#) 1) [F20-OP5]

[\[2.2.6.13.\]](#) -- ([\[2\]](#) --) [\[F46-OH2.2\]](#)

[\[2.2.6.13.\]](#) 2.2.6.13. ([\[3\]](#) 2) [F80-OH2.1] [F46,F80-OH2.2]

[\[2.2.6.13.\]](#) 2.2.6.13. ([\[3\]](#) 2) [F20-OP5]

NPC20 Div.B 2.2.6.14. (first printing)

[\[2.2.6.14.\]](#) 2.2.6.14. ([\[1\]](#) 1) [F46-OH2.2]

[\[2.2.6.14.\]](#) 2.2.6.14. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.6.14.\]](#) -- ([\[2\]](#) --) [\[F46-OH2.2\]](#)

[\[2.2.6.14.\]](#) 2.2.6.14. ([\[3\]](#) 2) [F46-OH2.2]

[\[2.2.6.14.\]](#) 2.2.6.14. ([\[3\]](#) 2) [F80-OP5]

NPC20 Div.B 2.2.7.1. (first printing)

[\[2.2.7.1.\]](#) 2.2.7.1. ([\[1\]](#) 1) [F80-OH2.1,OH2.3] [F46-OH2.2]

[\[2.2.7.1.\]](#) 2.2.7.1. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.7.1.\]](#) 2.2.7.1. ([\[2\]](#) 2) [F80-OH2.1,OH2.3] [F46-OH2.2]

[\[2.2.7.1.\]](#) 2.2.7.1. ([\[2\]](#) 2) [F80-OP5]

[\[2.2.7.1.\]](#) -- ([\[3\]](#) --) [\[F46-OH2.2\]](#)

NPC20 Div.B 2.2.7.2. (first printing)

[\[2.2.7.2.\]](#) 2.2.7.2. ([\[1\]](#) 1) [F80-OH2.1,OH2.3] [F46-OH2.2]

[\[2.2.7.2.\]](#) 2.2.7.2. ([\[1\]](#) 1) [F80-OP5]

[-- \(--\)](#) [\[F46-OH2.2\]](#)

NPC20 Div.B 2.2.7.3. (first printing)

[\[2.2.7.3.\]](#) 2.2.7.3. ([\[1\]](#) 1) [F80-OP5]

[-- \(--\)](#) [\[F46-OH2.2\]](#)

[\[2.2.7.3.\]](#) 2.2.7.3. ([\[3\]](#) 2) [F80-OH2.1,OH2.3]

NPC20 Div.B 2.2.7.4. (first printing)

[\[2.2.7.4.\]](#) 2.2.7.4. ([\[1\]](#) 1) [F80-OH2.1,OH2.3] [F46-OH2.2]

[\[2.2.7.4.\]](#) 2.2.7.4. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.7.4.\]](#) [-- \(\[2\] --\)](#) [\[F46-OH2.2\]](#)

[\[2.2.7.4.\]](#) 2.2.7.4. ([\[3\]](#) 2) [F80-OH2.1,OH2.2,OH2.3]

[\[2.2.7.4.\]](#) 2.2.7.4. ([\[4\]](#) 3) [F80-OH2.1,OH2.3,OH2.4]

NPC20 Div.B 2.2.7.6. (first printing)

[\[2.2.7.6.\]](#) 2.2.7.6. ([\[1\]](#) 1) [F20-OP5]

[\[2.2.7.6.\]](#) 2.2.7.6. ([\[2\]](#) 2) [F20-OP5]

[\[2.2.7.6.\]](#) [-- \(\[3\] --\)](#) [\[F46-OH2.2\]](#)

NPC20 Div.B 2.2.7.7. (first printing)

[\[2.2.7.7.\]](#) 2.2.7.7. ([\[1\]](#) 1) [F20-OP5]

[\[2.2.7.7.\]](#) 2.2.7.7. ([\[2\]](#) 2) [F20-OP5]

[\[2.2.7.7.\]](#) [-- \(\[3\] --\)](#) [\[F46-OH2.2\]](#)

NPC20 Div.B 2.2.9. (first printing)

[\[2.2.9.1.\]](#) 2.2.9.1. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.9.1.\]](#) 2.2.9.1. ([\[1\]](#) 1) [F80-OH2.1,OH2.3]

[\[2.2.9.2.\]](#) 2.2.9.2. ([\[1\]](#) 1) [F80-OP5]

[\[2.2.9.2.\]](#) 2.2.9.2. ([\[1\]](#) 1) [F80-OH2.1,OH2.3]

[\[2.2.9.2.\]](#) 2.2.9.2. ([\[2\]](#) 2) [F46-OH2.2]

[2.2.9.2.] -- ([3] --) [F45-OH2.2]

[2.2.9.2.] 2.2.9.2. ([4] 3) [F80-OH2.1,OH2.3]

[2.2.9.2.] 2.2.9.2. ([5] 4) [F20,F80,F81-OH2.1,OH2.3]

[2.2.9.3.] -- ([1] --) [F45-OH2.2]

NPC20 Div.B 2.2.10. (first printing)

[2.2.10.1.] 2.2.10.1. ([1] 1) [F80-OH2.1]

[2.2.10.2.] 2.2.10.2. ([1] 1) [F80-OH2.1,OH2.3]

[2.2.10.3.] 2.2.10.3. ([1] 1) [F80-OH2.1,OH2.3] [F46-OH2.2]

[2.2.10.3.] 2.2.10.3. ([2] 2) [F80-OH2.1]

[2.2.10.4.] 2.2.10.4. ([1] 1) [F80-OP5]

[2.2.10.4.] 2.2.10.4. ([2] 2) [F80-OH2.1,OH2.3]

[2.2.10.5.] 2.2.10.5. ([1] 1) [F81-OH2.1,OH2.3]

[2.2.10.5.] 2.2.10.5. ([1] 1) [F81-OP5]

[2.2.10.6.] 2.2.10.6. ([1] 1) [F80-OP5]

[2.2.10.6.] 2.2.10.6. ([2] 2) [F131-OE1.2]

[2.2.10.6.] 2.2.10.6. ([3] 3) [F30-OS3.1]

[2.2.10.6.] 2.2.10.6. ([3] 3) [F31-OS3.2]

[2.2.10.6.] 2.2.10.6. ([4] 4) [F131-OE1.2]

[2.2.10.6.] 2.2.10.6. ([5] 5) [F131-OE1.2]

[2.2.10.6.] 2.2.10.6. ([6] 6) [F80-OH2.1,OH2.3]

[2.2.10.6.] 2.2.10.6. ([7] 7) [F81-OP5]

[2.2.10.6.] 2.2.10.6. ([7] 7) [F46-OH2.2]

[2.2.10.7.] 2.2.10.7. ([1] 1) [F31-OS3.2]

[2.2.10.7.] 2.2.10.7. ([2] 2) no attributions

[2.2.10.7.] 2.2.10.7. ([3] 3) no attributions

[2.2.10.7.] 2.2.10.7. ([4] 4) [F31-OS3.2]

[2.2.10.7.] 2.2.10.7. ([5] 5) [F31-OS3.2]

[2.2.10.8.] 2.2.10.8. ([1] 1) [F81-OH2.1]

[2.2.10.8.] 2.2.10.8. ([1] 1) ([a] a),(b] b),(e] e) [F81-OP5]

- [\[2.2.10.9.\]](#) 2.2.10.9. ([1] 1) [F40,F46-OH2.4]
- [\[2.2.10.9.\]](#) 2.2.10.9. ([2] 2) [F41,F46-OH2.2]
- [\[2.2.10.9.\]](#) 2.2.10.9. ([3] 3) [F41,F46-OH2.2]
- [\[2.2.10.10.\]](#) 2.2.10.10. ([1] 1) [F46-OH2.2]
- [\[2.2.10.10.\]](#) 2.2.10.10. ([2] 2) [F46-OH2.2]
- [\[2.2.10.11.\]](#) 2.2.10.11. ([1] 1) [F31-OS3.2]
- [\[2.2.10.11.\]](#) 2.2.10.11. ([1] 1) [F31-OP5]
- [\[2.2.10.12.\]](#) 2.2.10.12. ([1] 1) [F81-OP5]
- [\[2.2.10.13.\]](#) 2.2.10.13. ([1] 1) [F81-OS3.2]
- [\[2.2.10.13.\]](#) 2.2.10.13. ([1] 1) [F46-OH2.2]
- [\[2.2.10.13.\]](#) 2.2.10.13. ([1] 1) [F80,F81-OP5]
- [\[2.2.10.14.\]](#) 2.2.10.14. ([1] 1) [F80,F81-OP5]
- [\[2.2.10.14.\]](#) 2.2.10.14. ([2] 2) [F80,F81-OP5]
- [\[2.2.10.15.\]](#) 2.2.10.15. ([1] 1) [F20,F80-OP5]
- [\[2.2.10.16.\]](#) 2.2.10.16. ([1] 1) [F81-OH1.1]
- [\[2.2.10.17.\]](#) 2.2.10.17. ([1] 1) [F46-OH2.2]
- [\[2.2.10.17.\]](#) 2.2.10.17. ([1] 1) [F30-OS3.1] [F46,F70-OS3.4]
- [\[2.2.10.17.\]](#) 2.2.10.17. ([1] 1) [F20,F30-OS2.1]
- [\[2.2.10.18.\]](#) -- ([1] --) ~~[F46-OH2.2]~~
- [\[2.2.10.19.\]](#) 2.2.10.18. ([1] 1) [F81-OP5]
- [\[2.2.10.19.\]](#) 2.2.10.18. ([1] 1) [F46-OH2.2]

[Submit a comment](#)

Proposed Change 1371

Code Reference(s):	NPC20 Div.B 2.6.1.7. (first printing)
Subject:	Service Water Heating - Other
Title:	Relief Valves
Description:	This proposed change adds the requirement for discharge pipes to be connected to relief valves on hot water tanks.
Related Code Change Request(s):	CCR 1117

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input checked="" type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input checked="" type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

NPC Sentence 2.6.1.7.(5) of Division B contains specifications for discharge pipes that convey water from pressure-relief, temperature-relief or combined temperature- and pressure-relief valves; however, the NPC currently has no requirements for discharge pipes for these types of relief valves on hot water tanks.

The lack of such requirements could result in serious injury (e.g., burns) to persons in close proximity to the hot water tank at the time of the release of steam or hot water.

Justification

Pressure-relief, temperature-relief and combined temperature- and pressure-relief valves are safety devices that are installed on water-heating appliances. These devices are designed to automatically release steam or hot water in the event that the pressure or temperature of the hot water tank exceeds safe levels.

To limit the risk of serious injury (e.g., burns) from the release of steam or hot water, the proposed change requires that a pressure-relief, temperature-relief or combined temperature- and pressure-relief valve be connected to a discharge pipe that runs down the length of the hot water tank. This discharge pipe would divert the steam and hot water to a proper discharge location, as indicated in NPC Clause 2.6.1.7.(5)(b).

PROPOSED CHANGE

[2.6.1.7.] 2.6.1.7. Relief Valves

- [1] 1) In addition to the requirements in Sentence (2), the hot water tank of a *storage-type service water heater* shall be equipped with a pressure-relief valve that is
- [a] a) designed to open when the water pressure in the tank reaches the rated working pressure of the tank, ~~and~~
 - [b] b) so located that the pressure in the tank shall not exceed the pressure at the relief valve by more than 35 kPa under any condition of flow within the distribution system, ~~and~~
 - [c] --) connected to a discharge pipe conforming to the requirements of Sentence (5).
- [2] 2) The hot water tank of a *storage-type service water heater* shall be equipped with a temperature-relief valve with a temperature-sensing element that is
- [a] a) located within the top 150 mm of the tank, ~~and~~
 - [b] b) designed to open and discharge sufficient water from the tank to keep the temperature of the water in the tank from exceeding 99°C under all operating conditions, ~~and-~~
 - [c] --) connected to a discharge pipe conforming to the requirements of the Sentence (5).
- [3] 3) A pressure-relief valve and temperature-relief valve may be combined where Sentences (1) and (2) are complied with.
- [4] 4) *Indirect service water heaters* shall be equipped with
- [a] a) a pressure-relief valve, and

- [b] b) a temperature-relief valve on every storage tank that forms part of the system.
- [5] 5) ~~Pipes that convey water from~~ Discharge pipes connected to a temperature-relief valve, pressure-relief valve or combined temperature- and pressure-relief valve, as required by Sentences (1) to (3), shall
- [a] a) be of a *nominal pipe size* at least equal to the *NPS* of the outlet of the valve,
- [b] b) be rigid, slope downward from the valve, and terminate with an indirect connection above a floor drain, sump, or other safe location, with an *air break* of not more than 300 mm,
- [c] c) have no thread at their outlet, and
- [d] d) be capable of operating at a temperature of not less than 99°C.
(See Note A-2.6.1.7.(5).)
- [6] 6) The temperature-relief valve required in Clause (4)(b) shall
- [a] a) have a temperature-sensing element located within the top 150 mm of the tank, and
- [b] b) be designed to open and discharge sufficient water to keep the temperature of the water in the tank from exceeding 99°C under all operating conditions.
- [7] 7) No shut-off valve shall be installed on the pipe between any tank and the relief valves or on the discharge pipes from such relief valves.
- [8] 8) A vacuum-relief valve shall be installed when any tank may be subject to *back-siphonage*.
- [9] 9) *Storage-type service water heaters* that are located in a ceiling or roof space, or over a floor of wood construction, shall be installed within a corrosion-resistant watertight drain pan, as described in Sentence (10).
- [10] 10) The drain pan referred to in Sentence (9) shall
- [a] a) be not less than 50 mm larger than the tank and have side walls not less than 25 mm high,
- [b] b) be drained by a pipe two *NPS* larger than the relief valve discharge pipe, and
- [c] c) have a drain that is located directly under the relief valve discharge pipe and that discharges directly to a floor drain or other acceptable location.

Impact analysis

Discharge pipes can be purchased at a minimal cost. These pipes may prevent hospitalizations due to serious injury (e.g., burns) caused discharge from a pressure-relief valve that was not connected to a discharge pipe.

Enforcement implications

This proposed change can be enforced by the infrastructure currently in place to enforce the Code. This proposed change would facilitate enforcement by the authorities having jurisdiction.

Who is affected

Engineers, plumbers, designers, building owners, contractors and regulators.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[2.6.1.7.] 2.6.1.7. ([1] 1) [F31,F81-OS3.2]

[2.6.1.7.] 2.6.1.7. ([2] 2) [F81-OS3.1,OS3.2]

[2.6.1.7.] 2.6.1.7. ([3] 3) no attributions

[2.6.1.7.] 2.6.1.7. ([4] 4) ([a] a) [F31-OS3.2] [F81-OS1.1] ([b] b) [F81-OS3.1,OS3.2]

[2.6.1.7.] 2.6.1.7. ([5] 5) [F31-OS3.2]

[2.6.1.7.] 2.6.1.7. ([5] 5) ([b] b) [F81-OH2.2]

[2.6.1.7.] 2.6.1.7. ([6] 6) [F31-OS3.2]

[2.6.1.7.] 2.6.1.7. ([7] 7) [F31-OS3.2]

[2.6.1.7.] 2.6.1.7. ([8] 8) [F81-OS3.2]

[2.6.1.7.] 2.6.1.7. ([9] 9) [F81-OP5]

[2.6.1.7.] 2.6.1.7. ([10] 10) [F81-OP5]

Accessibility

Problem

The NBC accessibility requirements have progressed little between 1985 and 2015. Meanwhile, the provinces and territories are facing pressures to advance in areas of equality and non-discrimination of people with disabilities.

The different approaches on accessibility are starting to cause significant disharmony amongst the provinces and territories. This is largely because several provinces and territories have started to develop their own requirements to improve upon the status quo. Often the terminology and criteria for establishing better-than-code requirements varies by jurisdiction, making it difficult to compare one criterion to the next. This patchwork of programs and lack of consistency across Canada is causing confusion amongst industry, regulators and the general public.

Based on recent study conducted in US and in Europe, the manoeuvring assumptions behind the NBC provisions allow only 60% of users of manual wheelchairs to access buildings designed accordingly to the code required minimum dimensions.

In the current code, access to buildings is more limiting to those that are more vulnerable. Where able-bodied occupants can use all entrances, those with limited mobility many have to travel longer distance to reach an entrance as currently only 50% of entrances are required to be accessible. In contrast with many provinces that already require that some floor areas other than the entrance level be accessible, the current NBC only suggests this as an option for the building owner.

In addition, although the NBC recognizes that universal washroom are convenient for accessibility because they may be used regardless of the gender of the person with the disability or if an attendant is present, these facilities are not mandatory and so the provisions for universal washrooms are currently not fully developed with no requirement for the number of water closets to be provided.

Signs of buildings is an important part of safety and wayfinding; however, people with low vision may not be able to utilize the building signage whether for their own safety or their right and ability to navigate through the building and use the building's facilities autonomously.

Justification - Explanation

Canadian reality

Since 2001, the disability rate of the Canadian population has increased by 22.7% while the total population increase was only 6.5% over the same time period.

As of 2006, 4.4 million Canadians or 14.3% of the total population reported having a disability. Severe and very severe disability was reported by nearly 2 million Canadians. This represents at least a 42% increase between 2001 and 2006. Disability rates tend to increase with age to approximately 43.5 % for the 65 years old and over age group. One in three Canadians, 1.3 million persons, aged 65 and over experience mobility limitations representing a 18.6 % increase between 2001 and 2006.

The Code requirements directly affect the accessibility and safety of Canadians who use our buildings and the Code requirements related to accessibility need to be updated to reflect the current state of the Canadian population with regards to age related disability.

Anthropometric reality

The current dimensions stated in the NBC limit the building access to many wheelchair users. The dimensions of accessible path of travel are proposed to be increase so that approximately 90% of manual wheelchairs available on the market would be accommodated. For instance, an increase of 80 mm in the clear width of a path of travel would allow access to an additional 40% of wheelchair users. Many provincial and international Codes have been updated to be more accommodating to wheelchair users.

More accommodating washroom facilities

Many people using buildings need facilities where they can receive assistance regardless of their gender or the gender of their attendant. Many provincial Codes have moved toward requiring universal washroom facilities.

In addition, the requirements for the number of accessible water closets currently required in the NBC is not based on current demographic data. As proposed, the washrooms available will provide the same level of performance (waiting time) for all occupants.

This will result in more accessible fixtures in washrooms where many fixtures are provided. In addition, a single universal washroom will be required to be located where regular washrooms are provided. Small washrooms with a few fixtures will be exempted from the accessibility requirements.

In addition, Consistent with many provincial codes, an adult changing space is proposed in large buildings.

Inclusive signage

The NBC requires various signs for safety and information purposes. The design of these signs is inconsistent and they are not accessible to all occupants of a building. Where it is intended or required that a sign be used by the public, it is proposed that those signs should be readable by all, including those with vision loss. Many signs are proposed to be tactile so that all occupants in a building will be able to receive safety or wayfinding information contained on the sign.

Increased access to buildings

The current requirements in the NBC provide options to building owners and designers when it comes to making buildings accessible. As a result it may be decided to limit the number of accessible building entrances meaning that people with a disability will have to travel longer

distances to reach an accessible entrance. Similarly, a building owner has the choice to limit accessibility to the entrance storey of a building only. Other international codes and some provincial regulations, require access to other levels in larger buildings. The cost of requiring access to upper levels is felt to be somewhat offset by the recent change to allow smaller and more affordable elevators to be used.

Safer environment for people with vision loss

In addition to the concerns related to inclusive building signage, described above, protruding building elements, drop off edges and stairways in open floor areas represent a safety hazard for people with vision loss. Changes are proposed to address these safety concerns and to offer an acceptable level of safety to all building occupants.

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Impact Analysis

At first glance it may seem that additional floor area is required to implement the proposed changes, which are already in place in many provinces and other Countries, however the impact of some of the proposed changes can be mitigated by adjusting building design and reconsidering typical building layouts.

Conversely, other changes such as those related to washrooms, and seating accommodations in assembly occupancies, will require less floor area in small buildings with lower occupant load than what is currently required.

Enforcement implications

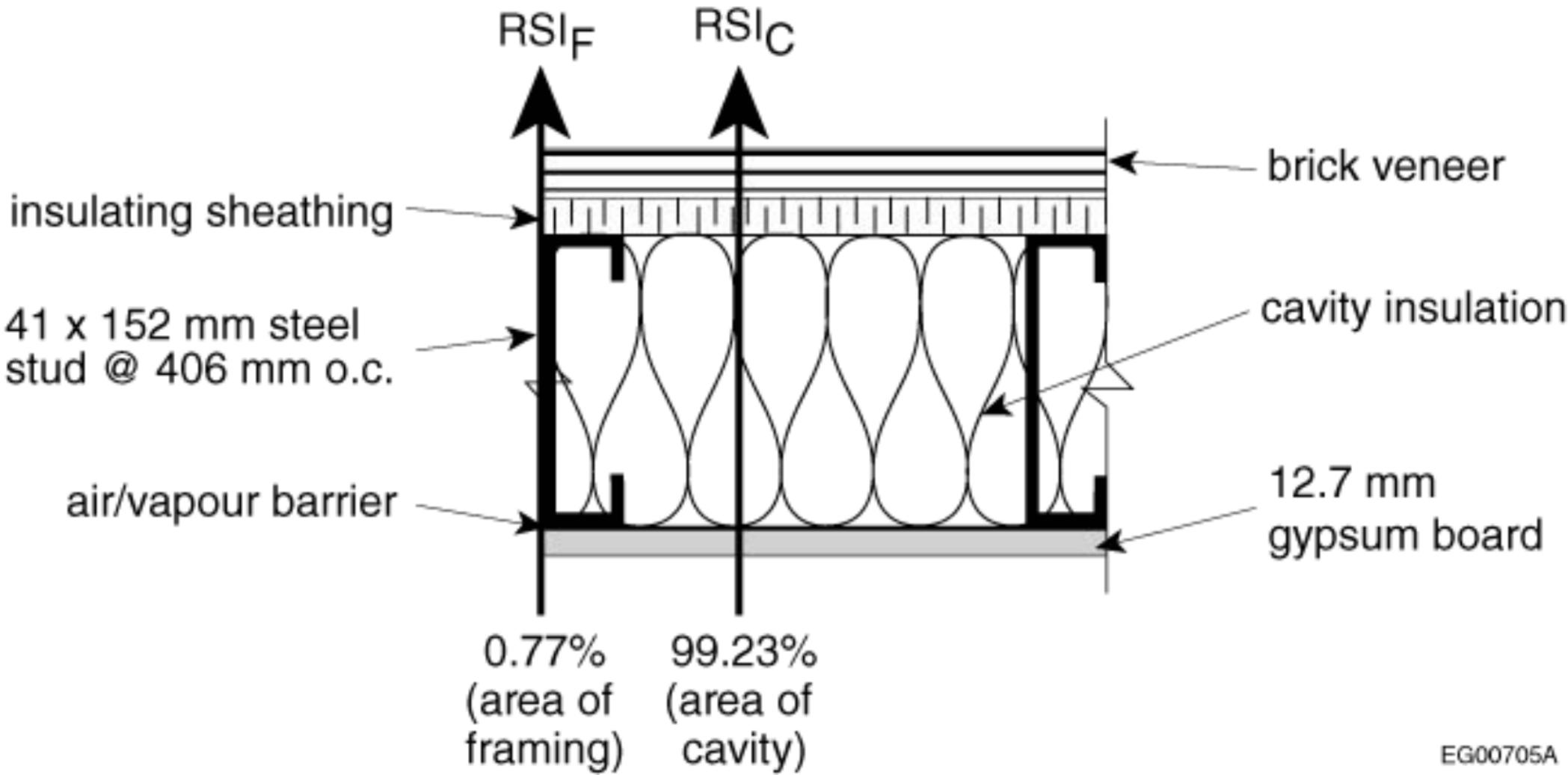
This group of proposed changes can be enforced by the current enforcement structure in place. Furthermore, the clarification provided to many of the existing requirements will facilitate enforcement.

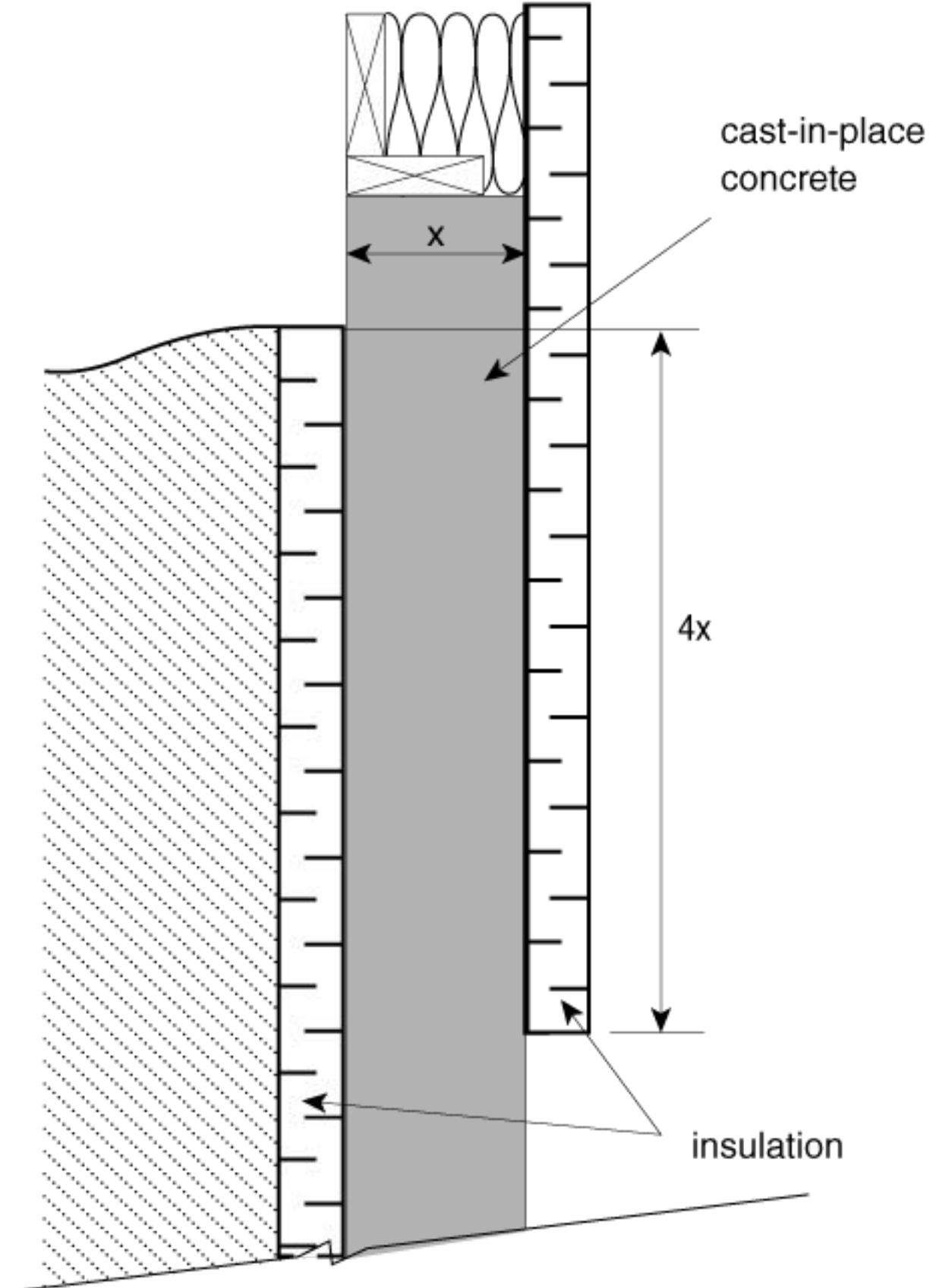
Who is affected

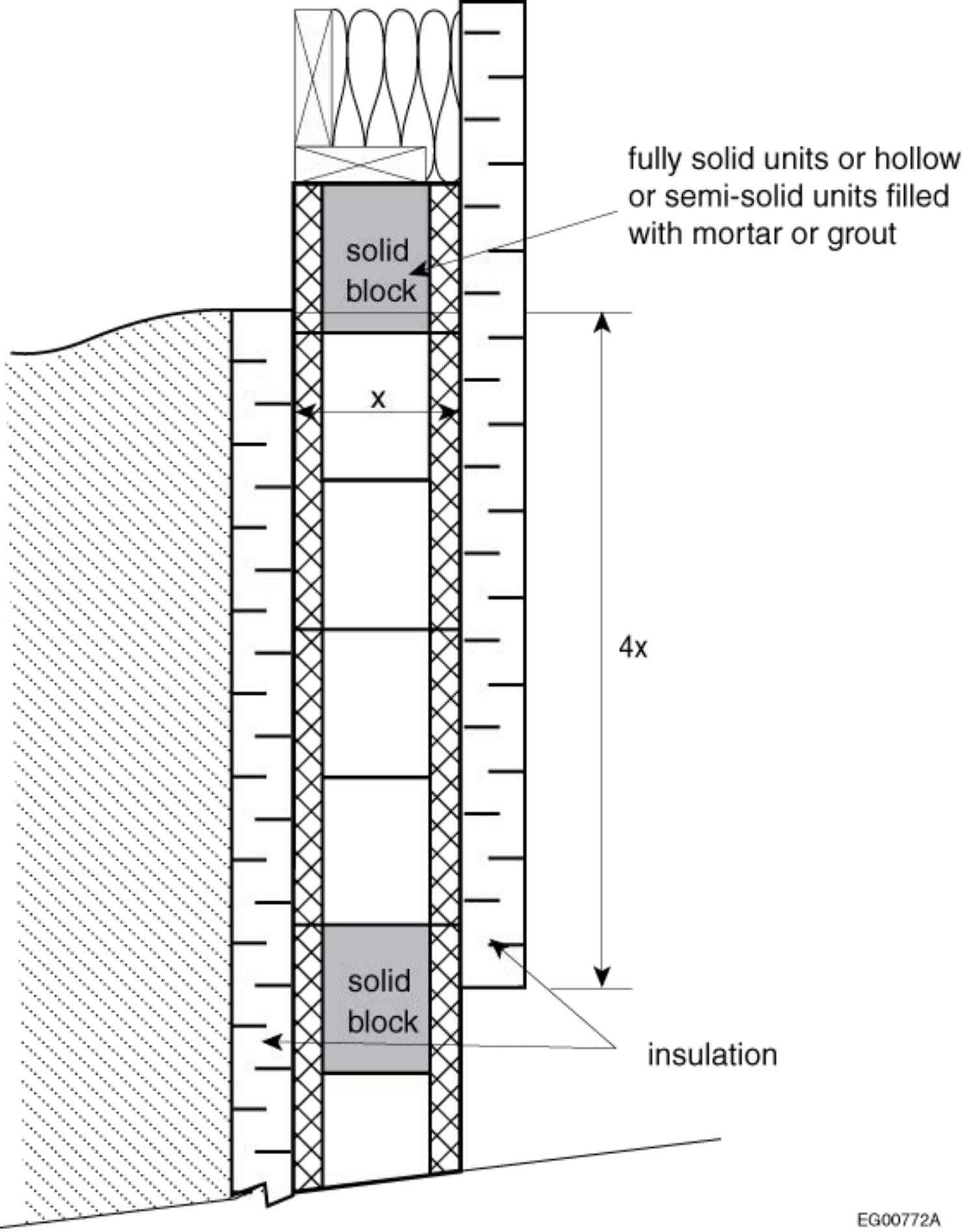
Occupants, designers, builders, building officials.

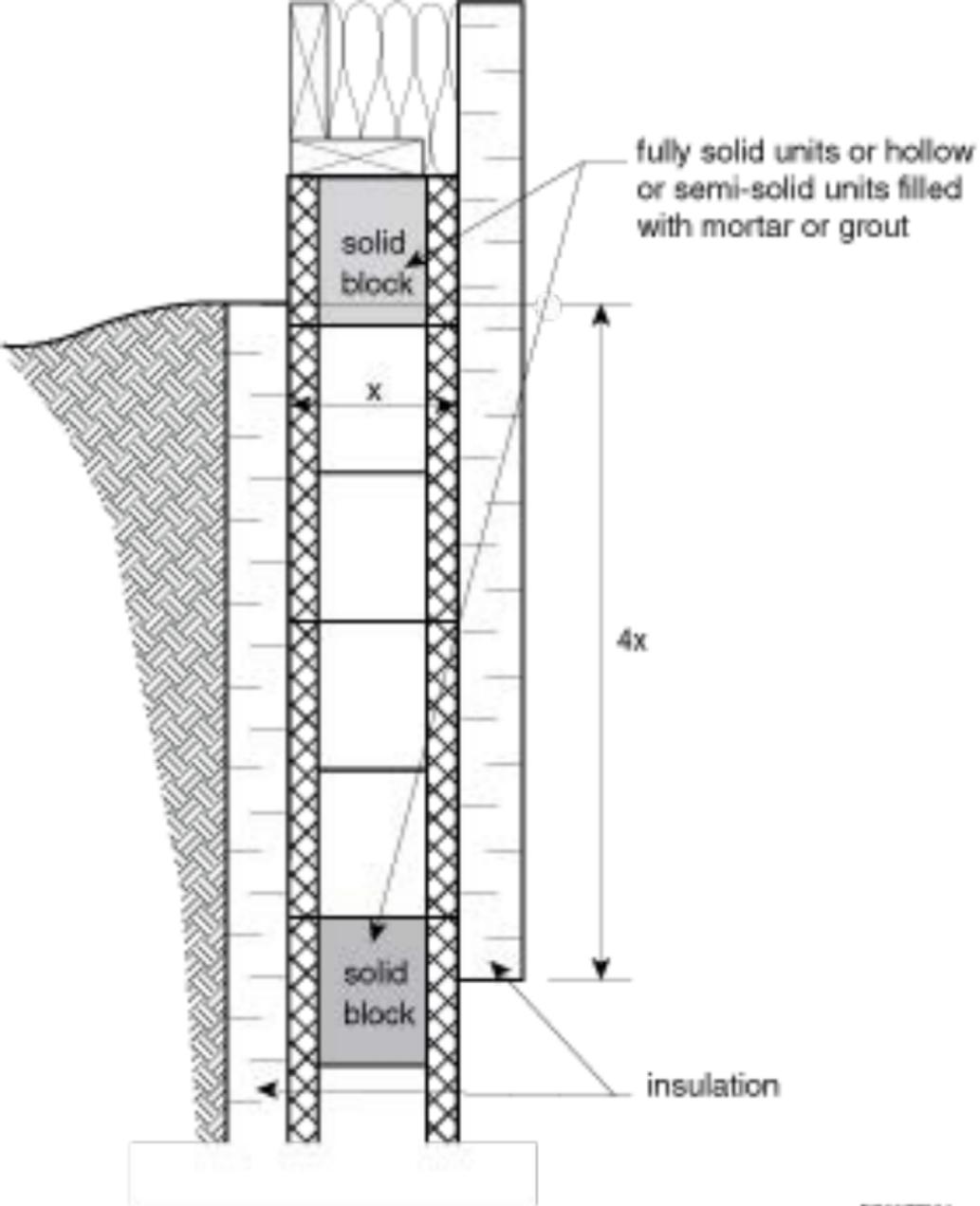
Attached Supporting Material

none

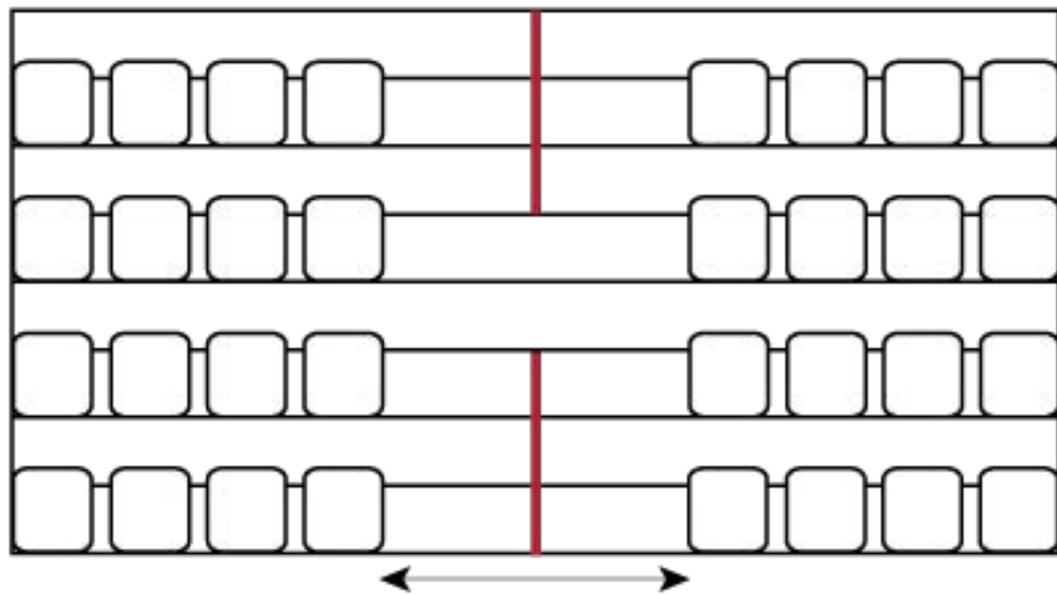






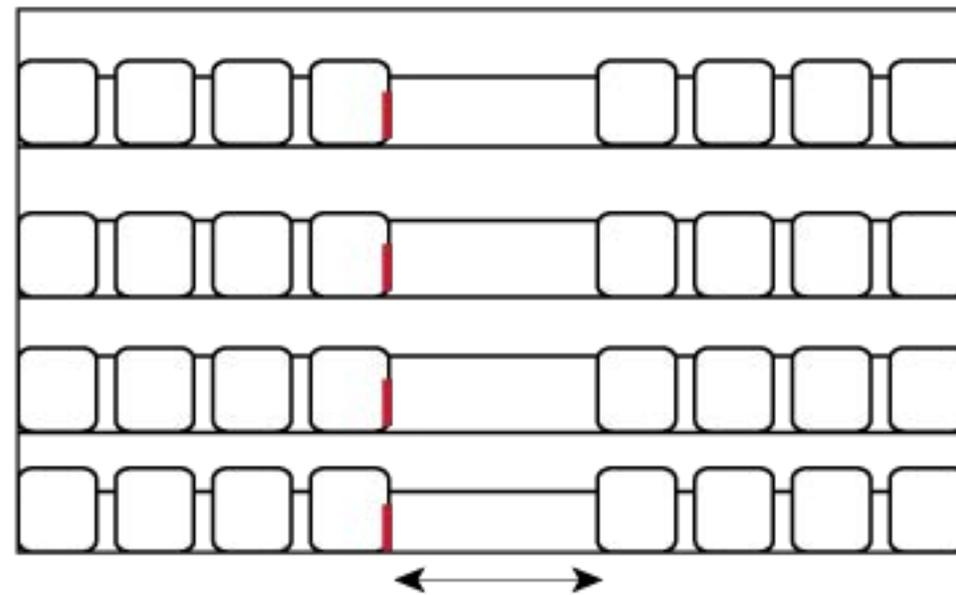


Centreline handrails



Aisle width of 1 100 mm or more

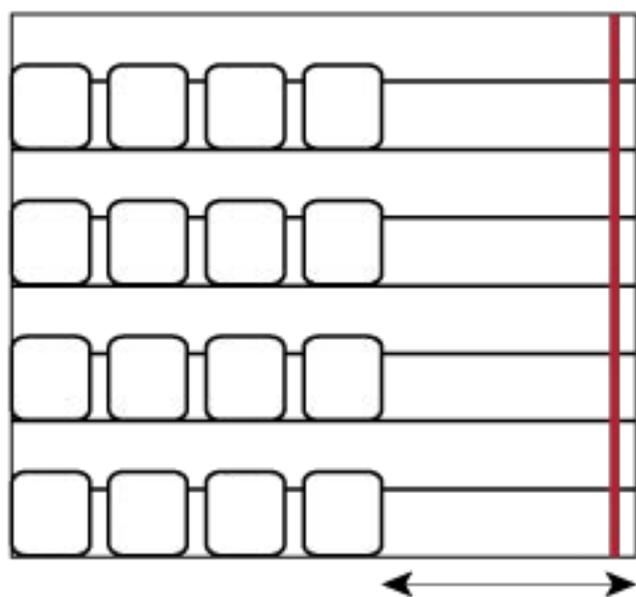
Handrail at each row of seats



Aisle width of less than 1 100 mm

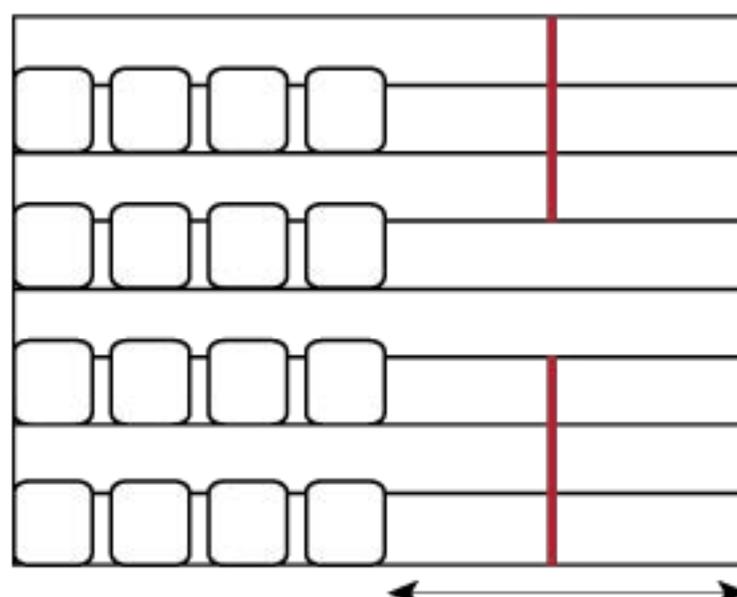
Aisles Serving Seating on Both Sides

Continuous side handrail



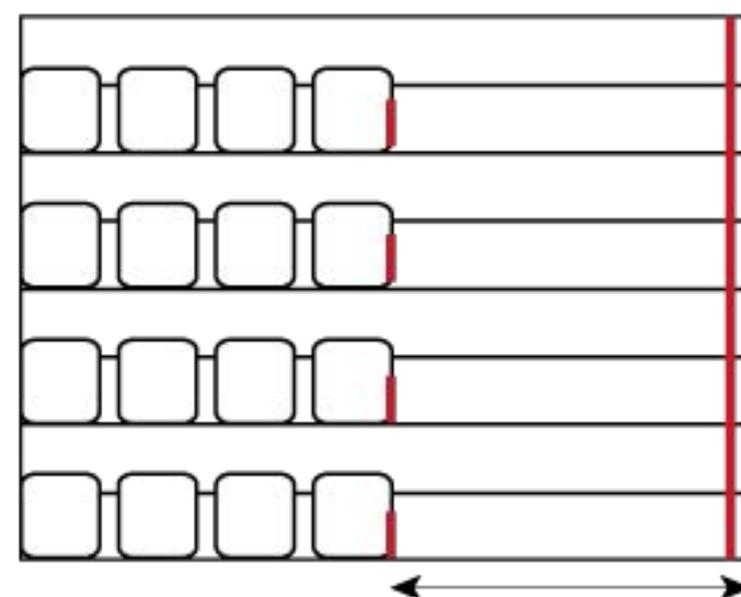
Aisle width of less than 1 100 mm

Centreline handrails



Aisle width of 1 100 mm or more

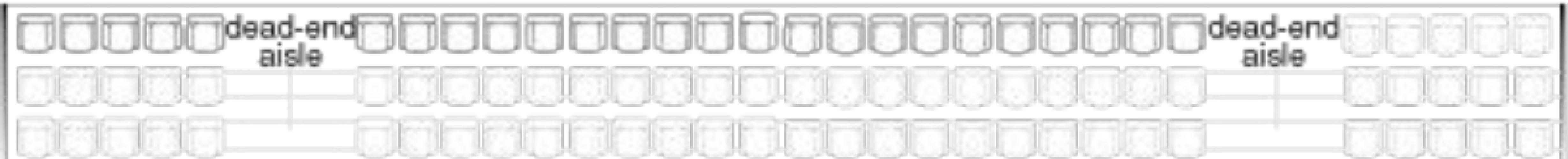
Handrail at each row of seats and a continuous side handrail



Aisle width of 1 100 mm or more

Aisles Serving Seating on One Side

not more than 24 seats to the next aisle



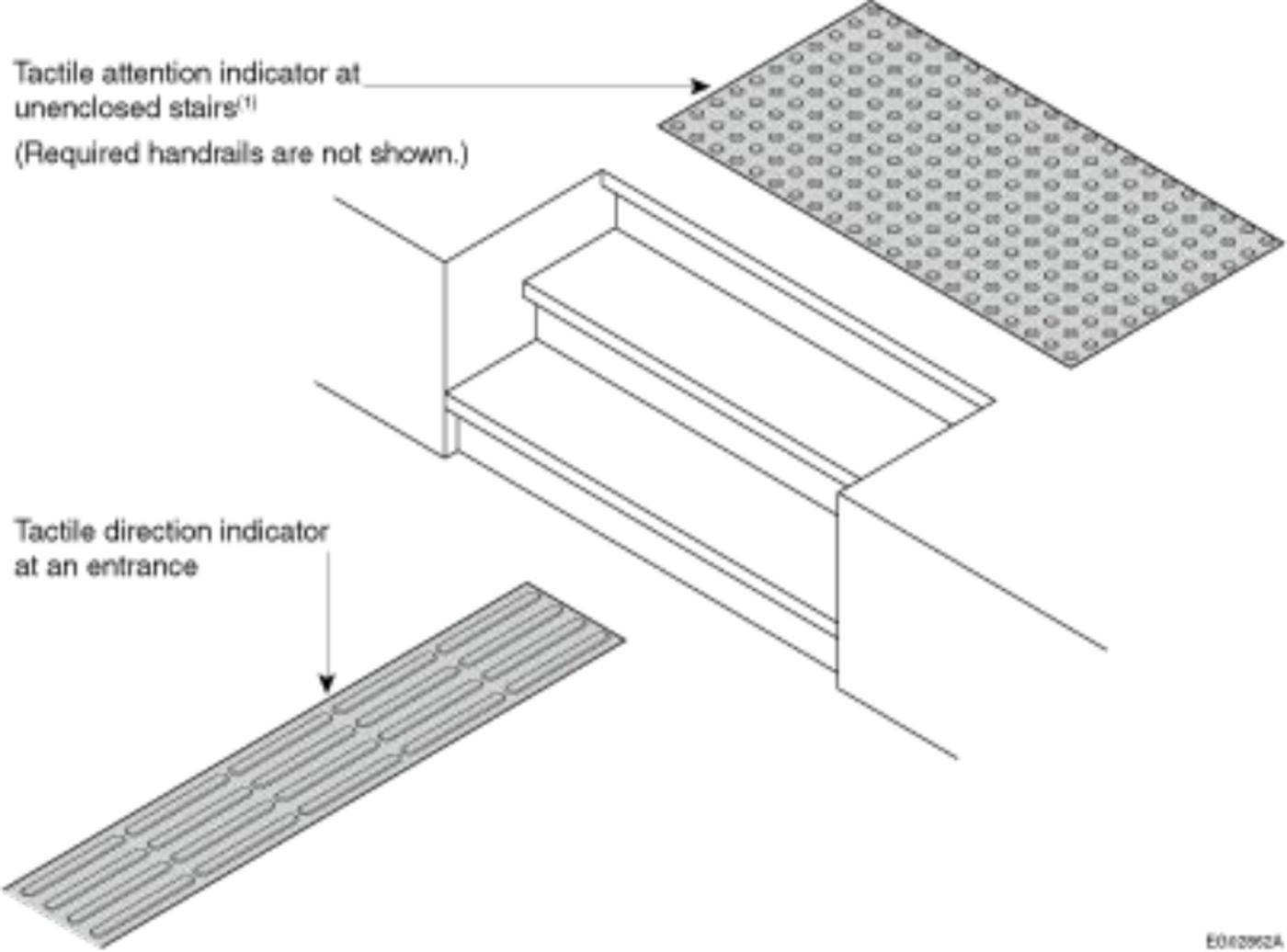
dead-end
aisle

dead-end
aisle

(towards front of assembly occupancy)

Tactile attention indicator at unenclosed stairs⁽¹⁾
(Required handrails are not shown.)

Tactile direction indicator at an entrance



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Proposed Change 1371

Code Reference(s):	NPC20 Div.B 2.6.1.7. (first printing)
Subject:	Service Water Heating - Other
Title:	Relief Valves
Description:	This proposed change adds the requirement for discharge pipes to be connected to relief valves on hot water tanks.
Related Code Change Request(s):	CCR 1117

This change could potentially affect the following topic areas:

- | | |
|--|---|
| <input type="checkbox"/> Division A | <input checked="" type="checkbox"/> Division B |
| <input type="checkbox"/> Division C | <input checked="" type="checkbox"/> Design and Construction |
| <input checked="" type="checkbox"/> Building operations | <input checked="" type="checkbox"/> Housing |
| <input checked="" type="checkbox"/> Small Buildings | <input checked="" type="checkbox"/> Large Buildings |
| <input type="checkbox"/> Fire Protection | <input type="checkbox"/> Occupant safety in use |
| <input type="checkbox"/> Accessibility | <input type="checkbox"/> Structural Requirements |
| <input type="checkbox"/> Building Envelope | <input type="checkbox"/> Energy Efficiency |
| <input type="checkbox"/> Heating, Ventilating and Air Conditioning | <input checked="" type="checkbox"/> Plumbing |
| | <input type="checkbox"/> Construction and Demolition Sites |

Problem

NPC Sentence 2.6.1.7.(5) of Division B contains specifications for discharge pipes that convey water from pressure-relief, temperature-relief or combined temperature- and pressure-relief valves; however, the NPC currently has no requirements for discharge pipes for these types of relief valves on hot water tanks.

The lack of such requirements could result in serious injury (e.g., burns) to persons in close proximity to the hot water tank at the time of the release of steam or hot water.

Justification

Pressure-relief, temperature-relief and combined temperature- and pressure-relief valves are safety devices that are installed on water-heating appliances. These devices are designed to automatically release steam or hot water in the event that the pressure or temperature of the hot water tank exceeds safe levels.

To limit the risk of serious injury (e.g., burns) from the release of steam or hot water, the proposed change requires that a pressure-relief, temperature-relief or combined temperature- and pressure-relief valve be connected to a discharge pipe that runs down the length of the hot water tank. This discharge pipe would divert the steam and hot water to a proper discharge location, as indicated in NPC Clause 2.6.1.7.(5)(b).

PROPOSED CHANGE

[2.6.1.7.] 2.6.1.7. Relief Valves

- [1] 1) In addition to the requirements in Sentence (2), the hot water tank of a *storage-type service water heater* shall be equipped with a pressure-relief valve that is
- [a] a) designed to open when the water pressure in the tank reaches the rated working pressure of the tank, ~~and~~
 - [b] b) so located that the pressure in the tank shall not exceed the pressure at the relief valve by more than 35 kPa under any condition of flow within the distribution system, ~~and~~
 - [c] --) connected to a discharge pipe conforming to the requirements of Sentence (5).
- [2] 2) The hot water tank of a *storage-type service water heater* shall be equipped with a temperature-relief valve with a temperature-sensing element that is
- [a] a) located within the top 150 mm of the tank, ~~and~~
 - [b] b) designed to open and discharge sufficient water from the tank to keep the temperature of the water in the tank from exceeding 99°C under all operating conditions, ~~and-~~
 - [c] --) connected to a discharge pipe conforming to the requirements of the Sentence (5).
- [3] 3) A pressure-relief valve and temperature-relief valve may be combined where Sentences (1) and (2) are complied with.
- [4] 4) *Indirect service water heaters* shall be equipped with
- [a] a) a pressure-relief valve, and

- [b] b) a temperature-relief valve on every storage tank that forms part of the system.
- [5] 5) ~~Pipes that convey water from~~ Discharge pipes connected to a temperature-relief valve, pressure-relief valve or combined temperature- and pressure-relief valve, as required by Sentences (1) to (3), shall
- [a] a) be of a *nominal pipe size* at least equal to the *NPS* of the outlet of the valve,
- [b] b) be rigid, slope downward from the valve, and terminate with an indirect connection above a floor drain, sump, or other safe location, with an *air break* of not more than 300 mm,
- [c] c) have no thread at their outlet, and
- [d] d) be capable of operating at a temperature of not less than 99°C.
(See Note A-2.6.1.7.(5).)
- [6] 6) The temperature-relief valve required in Clause (4)(b) shall
- [a] a) have a temperature-sensing element located within the top 150 mm of the tank, and
- [b] b) be designed to open and discharge sufficient water to keep the temperature of the water in the tank from exceeding 99°C under all operating conditions.
- [7] 7) No shut-off valve shall be installed on the pipe between any tank and the relief valves or on the discharge pipes from such relief valves.
- [8] 8) A vacuum-relief valve shall be installed when any tank may be subject to *back-siphonage*.
- [9] 9) *Storage-type service water heaters* that are located in a ceiling or roof space, or over a floor of wood construction, shall be installed within a corrosion-resistant watertight drain pan, as described in Sentence (10).
- [10] 10) The drain pan referred to in Sentence (9) shall
- [a] a) be not less than 50 mm larger than the tank and have side walls not less than 25 mm high,
- [b] b) be drained by a pipe two *NPS* larger than the relief valve discharge pipe, and
- [c] c) have a drain that is located directly under the relief valve discharge pipe and that discharges directly to a floor drain or other acceptable location.

Impact analysis

Discharge pipes can be purchased at a minimal cost. These pipes may prevent hospitalizations due to serious injury (e.g., burns) caused discharge from a pressure-relief valve that was not connected to a discharge pipe.

Enforcement implications

This proposed change can be enforced by the infrastructure currently in place to enforce the Code. This proposed change would facilitate enforcement by the authorities having jurisdiction.

Who is affected

Engineers, plumbers, designers, building owners, contractors and regulators.

OBJECTIVE-BASED ANALYSIS OF NEW OR CHANGED PROVISIONS

[2.6.1.7.] 2.6.1.7. ([1] 1) [F31,F81-OS3.2]

[2.6.1.7.] 2.6.1.7. ([2] 2) [F81-OS3.1,OS3.2]

[2.6.1.7.] 2.6.1.7. ([3] 3) no attributions

[2.6.1.7.] 2.6.1.7. ([4] 4) ([a] a) [F31-OS3.2] [F81-OS1.1] ([b] b) [F81-OS3.1,OS3.2]

[2.6.1.7.] 2.6.1.7. ([5] 5) [F31-OS3.2]

[2.6.1.7.] 2.6.1.7. ([5] 5) ([b] b) [F81-OH2.2]

[2.6.1.7.] 2.6.1.7. ([6] 6) [F31-OS3.2]

[2.6.1.7.] 2.6.1.7. ([7] 7) [F31-OS3.2]

[2.6.1.7.] 2.6.1.7. ([8] 8) [F81-OS3.2]

[2.6.1.7.] 2.6.1.7. ([9] 9) [F81-OP5]

[2.6.1.7.] 2.6.1.7. ([10] 10) [F81-OP5]