Canadian Housing Code 1990

Second Revisions and Errata

Issued by the
Canadian Commission on Building and Fire Codes
National Research Council of Canada
Ottawa

January 1992

The attached pages identify revisions and errata to the Canadian Housing Code 1990. The revisions have been approved by the Canadian Commission on Building and Fire Codes for immediate implementation.

In accordance with the CCBFC Policies and Procedures, the list of referenced documents in Table 2.7.3.A. of the 1990 CHC is updated annually. The revisions contained herein include updates to 30 June 1991. Where changes to the title have been made, the relevant requirements have also been updated.

The errata are corrections which have been identified and are included to facilitate the use of the Code. Revisions are identified by an ***r*** in the margin nearest the change; ***r2*** designates a revision issued in January 1992. Errata are identified by an ***e***.

1992 second revisions and errata

2.7.3.1.
Table 2.7.3.A

3.1.7.1.

Table A-9

A-9.3.2.1.
Lumber Grade Marks

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Anchorage
to foundations

(d) the source of information for *fire-resistance ratings* of elements of construction (to be indicated on large-scale sections),
(e) the location of *exits*, and
(f) fire detection, suppression and alarm systems.

Section 2.4 Materials, Appliances, Systems and Equipment

2.4.1. General

2.4.1.1. Characteristics of Materials, Appliances, Systems and Equipment. All materials, *appliances*, systems and equipment installed to meet the requirements of this Code shall possess the necessary characteristics to perform their intended functions when installed in a *building*.

2.4.1.2. Storage on the Building Site. All *building* materials, *appliances* and equipment on the *building* site shall be stored in such a way as to prevent deterioration or impairment of their essential properties.

2.4.1.3. Used Materials, Appliances and Equipment. Unless otherwise specified, used materials, *appliances* and equipment may be reused when they meet the requirements of this Code for new materials and are satisfactory for the intended use.

Section 2.5 Equivalents

2.5.1. General

2.5.1.1. Alternate Materials, Appliances, Systems and Equipment Permitted. The provisions of this Code are not intended to limit the appropriate use of materials, *appliances*, systems, equipment, methods of design or construction procedures not specifically described herein.

2.5.1.2. Evidence of Equivalent Performance. Any person desirous of providing an equivalent to satisfy one or more of the requirements of this Code shall submit sufficient evidence to demonstrate that the proposed equivalent will provide the level of performance required by this Code.

2.5.1.3. Equivalence Demonstrated by Past Performance, Test or Evaluation. Materials, *appliances*, systems, equipment, methods of design and construction procedures not specifically described herein, or which vary from the specific requirements in this Code, may be used if it can be shown that these alternatives are suitable on the basis of past performance, tests or evaluations.

2.5.3. Equivalent Test Standards

2.5.3.1. The results of tests based on test standards other than as described in this Code may be used provided such alternate test standards will provide comparable results.

Section 2.6 Review

2.6.5. Off-Site Review

2.6.5.1. Where a *building* or component of a *building* is assembled off the *building* site in such a manner that it cannot be reviewed on site, off-site reviews shall be provided to determine compliance with this Code.

Section 2.7 Referenced Documents

2.7.1. Application

2.7.1.1. The provisions of referenced documents in this Code apply only to the extent that they relate to *buildings*.

2.7.2. Conflicting Requirements

2.7.2.1. In the case of conflict between the provisions of this Code and those of a referenced document, the provisions of this Code shall govern.

2.7.3. Effective Date

2.7.3.1. Unless otherwise specified herein, the documents referenced in this Code shall include all amendments, revisions and supplements effective to
r2 30 June 1991.

2.7.3.2. Where documents are referenced in this Code, they shall be the editions designated in Column 2 of Table 2.7.3.A.

Table 2.7.3.A.

Forming Part of Article 2.7.3.2.

	Documents Referenced in the National Building Code of Canada 1990			
	Issuing Agency	**Document Number**	**Title of Document**	**Code Reference**
r	ASTM	A123-89A	Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products	Table 9.20.16.A.
	ASTM	A-153-82 (1987)	Zinc Coating (Hot-Dip) on Iron and Steel Hardware	Table 9.20.16.A.
r2	ASTM	A525-91B	Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process	9.3.3.2.
r2	ASTM	C4-62 (1991)	Clay Drain Tile	9.14.3.1.(1)
	ASTM	C5-79(88)	Quicklime for Structural Purposes	9.20.3.1.(1)
	ASTM	C27-84(88)	Classification of Fireclay and High-Alumina Refractory Brick	9.21.3.4.
	ASTM	C126-86	Ceramic Glazed Structural Clay Facing Tile, Facing Brick, and Solid Masonry Units	9.20.2.1.(1)
r2	ASTM	C207-91	Hydrated Lime for Masonry Purposes	9.20.3.1.(1)
	ASTM	C212-60 (1986)	Structural Clay Facing Tile	9.20.2.1.(1)
r2	ASTM	C315-91	Clay Flue Linings	9.21.3.3.(1)
	ASTM	C411-82 (1987)	Hot-Surface Performance of High-Temperature Thermal Insulation	6.2.3.6.(3) 6.2.9.2.(2)
r	ASTM	C412M-90	Concrete Drain Tile	9.14.3.1.(1)
r2	ASTM	C444M-91	Perforated Concrete Pipe (Metric)	9.14.3.1.(1)
r2	ASTM	C700-91	Vitrified Clay Pipe, Extra Strength, Standard Strength and Perforated	9.14.3.1.(1)
	ASTM	C1002-88	Steel Drill Screws for the Application of Gypsum Board or Metal Plaster Bases	9.24.1.4. 9.29.5.7.
r	ASTM	E90-90	Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions	9.11.1.1.
r	ASTM	E336-90	Measurement of Airborne Sound Insulation in Buildings	9.11.1.1.
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	Issuing Agency	Document Number	Title of Document	Code Reference
	ASTM	E413-87	Classification for Rating Sound Insulation	9.11.1.1.
r2	ASTM	F476-84 (1991)	Test Methods for Security of Swinging Door Assemblies	9.6.6.10.
r2	CGA	CAN/CGA-B149.1-M91	Natural Gas Installation Code	6.2.1.4.(1)
r2	CGA	CAN/CGA-B149.2-M91	Propane Installation Code	6.2.1.4.(1)
	CGSB	CAN/CGSB-7.1-M86	Cold Formed Steel Framing Components	9.24.1.2.
r	CGSB	CAN/CGSB-7.2-M88	Adjustable Metal Columns	9.17.3.4.
	CGSB	10-GP-3Ma-1981	Refractory Mortar, Air Setting	9.21.3.4. 9.21.3.9.(1) 9.22.2.2.(1)
	CGSB	CAN/CGSB-11.3-M87	Hardboard	9.27.10.1.(2) 9.29.7.1. 9.30.2.2.(1)
	CGSB	CAN/CGSB-11.5-M87	Hardboard, Precoated, Factory Finished, for Exterior Cladding	9.27.10.1.(1)
r2	CGSB	CAN/CGSB-12.1-M90	Tempered or Laminated Safety Glass	9.6.5.2.(2) 9.7.3.1.(1)
r2	CGSB	CAN/CGSB-12.2-M91	Flat, Clear Sheet Glass	9.7.3.1.(1)
r2	CGSB	CAN/CGSB-12.3-M91	Flat, Clear Float Glass	9.7.3.1.(1)
r2	CGSB	CAN/CGSB-12.4-M91	Heat Absorbing Glass	9.7.3.1.(1)
r2	CGSB	CAN/CGSB-12.8-M90	Insulating Glass Units	9.7.3.1.(1)
	CGSB	CAN2-12.10-M76	Glass, Light and Heat Reflecting	9.7.3.1.(1)
r2	CGSB	CAN/CGSB-12.11-M90	Wired Safety Glass	9.6.5.2.(2) 9.7.3.1.(1)
	CGSB	CAN/CGSB-12.20-M89	Structural Design of Glass for Buildings	9.7.3.2.
	CGSB	19-GP-5M-1976	Sealing Compound, One-Component, Acrylic Base, Solvent Curing	9.27.4.2.(2)
	GCSB	CAN/CGSB-19.13-M87	Sealing Compound, One-Component, Elastomeric, Chemical Curing	9.27.4.2.(2)
	CGSB	19-GP-14M-1976	Sealing Compound, One-Component, Butyl-Polyisobutylene Polymer Base, Solvent Curing	9.27.4.2.(2)
r	CGSB	CAN/CGSB-19.22-M89	Mildew-Resistant Sealing Compound, for Tubs and Tile	9.29.10.5.
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	Issuing Agency	Document Number	Title of Document	Code Reference
r	CGSB	CAN/CGSB-19.24-M90	Multi-Component, Chemical-Curing Sealing Compound	9.27.4.2.(2)
	CGSB	CAN/CGSB-34.4-M89	Siding, Asbestos-Cement, Shingles and Clapboards	9.27.8.1.(1)
	CGSB	CAN/CGSB-34.5-M89	Sheets, Asbestos-Cement, Corrugated	9.27.8.1.(1)
r2	CGSB	CAN/CGSB-34.14-M89	Sheets, Asbestos-Cement, Decorative	9.27.8.1.(1)
	CGSB	CAN/CGSB-34.16-M89	Sheets, Asbestos-Cement, Flat, Fully Compressed	9.27.8.1.(1)
	CGSB	CAN/CGSB-34.17-M89	Sheets, Asbestos-Cement, Flat, Semicompressed	9.27.8.1.(1)
	CGSB	CAN/CGSB-34.21-M89	Panels, Sandwich, Asbestos-Cement with Insulating Cores	9.27.8.1.(1)
	CGSB	CAN/CGSB-34.22-M87	Pipe, Asbestos-Cement, Drain	9.14.3.1.(1)
	CGSB	CAN/CGSB-37.2-M88	Emulsified Asphalt, Mineral Colloid Type, Unfilled, for Dampproofing and Waterproofing and for Roof Coatings	9.13.2.1.(1)
r	CGSB	CAN/CGSB-37.3-M89	Application of Emulsified Asphalts for Dampproofing or Waterproofing	9.13.1.3.(1)
	CGSB	CAN/CGSB-37.4-M89	Fibrated, Cutback, Lap Cement for Asphalt Roofing	9.26.2.1.(1)
	CGSB	CAN/CGSB-37.5-M89	Cutback Asphalt Plastic Cement	9.26.2.1.(1)
	CGSB	37-GP-6Ma-1983	Asphalt, Cutback, Unfilled, for Dampproofing	9.13.2.1.(1)
	CGSB	CAN/CGSB-37.8-M88	Asphalt, Cutback, Filled, for Roof Coating	9.26.2.1.(1)
	CGSB	37-GP-9Ma-1983	Primer, Asphalt, Unfilled, for Asphalt Roofing, Dampproofing and Waterproofing	9.26.2.1.(1)
	CGSB	37-GP-12Ma-1984	Application of Unfilled Cutback Asphalt for Dampproofing	9.13.1.3.(1)
r	CGSB	CAN/CGSB-37.16-M89	Filled Cutback Asphalt, for Dampproofing and Waterproofing	9.13.2.1.(1)
	CGSB	37-GP-18Ma-1985	Tar, Cutback, Unfilled, for Dampproofing	9.13.2.1.(1)
	CGSB	37-GP-21M-1976	Tar, Cutback, Fibrated, for Roof Coating	9.26.2.1.(1)
r	CGSB	CAN/CGSB-37.22-M89	Application of Unfilled Cutback Tar Foundation Coating for Dampproofing	9.13.1.3.(1)
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	Issuing Agency	Document Number	Title of Document	Code Reference
r	CGSB	CAN/CGSB-37.50-M89	Hot Applied Rubberized Asphalt for Roofing and Waterproofing	9.26.2.1.(1)
r2	CGSB	CAN/CGSB-37.51-M90	Application of Hot-Applied Rubberized Asphalt for Roofing and Waterproofing	9.26.15.1.
	CGSB	37-GP-52M-84	Roofing and Waterproofing Membrane, Sheet Applied, Elastomeric	9.26.2.1.(1)
	CGSB	37-GP-54M-79	Roofing and Waterproofing Membrane, Sheet-Applied, Flexible, Polyvinyl Chloride	9.26.2.1.(1)
	CGSB	37-GP-55M-79	Application of Sheet Applied Flexible Polyvinyl Chloride Roofing Membrane	9.26.16.1.
	GGSB	37-GP-56M-80	Membrane, Modified,Bituminous, Prefabricated, and Reinforced for Roofing	9.26.2.1.(1)
	CGSB	41-GP-6M-1976	Sheets, Thermosetting Polyester Plastics, Glass Fiber Reinforced	9.26.2.1.(1)
	CGSB	41-GP-24Ma-1983	Siding, Soffits and Fascia, Rigid Vinyl	9.27.13.1.
	CGSB	41-GP-29Ma-1983	Tubing, Plastic, Corrugated, Drainage	9.14.3.1.(1)
	CGSB	CAN/CGSB 51.20-M87	Thermal Insulation, Polystyrene, Boards and Pipe Covering	Table 9.23.16.A. 9.25.3.1.(1) 9.25.3.3.
	CGSB	51-GP-21M-1978	Thermal Insulation, Urethane and Isocyanurate, Unfaced	Table 9.23.16.A. 9.25.3.1.(1)
	CGSB	CAN/CGSB-51.25-M87	Thermal Insulation, Phenolic, Faced	Table 9.23.16.A. 9.25.3.1.(1)
	CGSB	CAN/CGSB-51.26-M86	Thermal Insulation, Urethane and Isocyanurate, Boards, Faced	Table 9.23.16.A. 9.25.3.1.(1)
	CGSB	51-GP-27M-1979	Thermal Insulation, Polystyrene, Loose Fill	9.25.3.1.(1)
	CGSB	CAN2-51.32-M77	Sheathing, Membrane, Breather Type	9.20.13.10.(1) 9.23.17.1. 9.26.2.1.(1)
r	CGSB	CAN/CGSB-51.33-M89	Vapour Barrier, Sheet Excluding Polyethylene, for Use in Building Construction	9.25.3.5.(1)
	CGSB	CAN/CGSB-51.34-M86	Vapour Barrier, Polyethylene Sheet for use in Building Construction	9.13.2.1.(1) 9.18.6.1.(3) 9.25.3.4.(2) 9.25.3.5.(1)
r	CGSB	CAN/CGSB-51.60-M90	Cellulose Fibre Loose Fill Thermal Insulation	9.25.3.1.(1)
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	Issuing Agency	Document Number	Title of Document	Code Reference
	CGSB	CAN/CGSB-63.14-M89	Plastic Skylights	9.7.7.1. 9.7.7.2.
	CGSB	CAN/CGSB-82.1-M89	Sliding Doors	9.6.4.2.
	CGSB	CAN/CGSB-82.5-M88	Insulated Steel Doors	9.6.4.3.
	CGSB	CAN/CGSB-82.6-M86	Doors, Mirrored Glass, Siding or Folding Wardrobe	9.6.5.3.
	CGSB	CAN/CGSB-93.1-M85	Sheet, Aluminum Alloy, Prefinished, Residential	9.27.12.1.(4)
r2	CGSB	CAN/CGSB-93.2-M91	Prefinished Aluminum Siding, Soffits and Fascia for Residential Use	9.27.12.1.(3)
r2	CGSB	CAN/CGSB-93.3-M91	Prefinished Galvanized and Aluminum-Zinc Alloy Steel Sheet for Residential Use	9.27.12.1.(2)
	CGSB	93-GP-4M-1978	Siding, Soffits and Fascia, Steel, Galvanized, Prefinished, Residential	9.27.12.1.(1)
e	CSA	CAN/CSA-A5-M88	Portland Cement	9.3.1.2. 9.20.3.1.(1) 9.28.2.1.
e	CSA	CAN/CSA-A8-M88	Masonry Cement	9.20.3.1.(1)
r	CSA	CAN/CSA-A23.1-M90	Concrete Materials and Methods of Concrete Construction	9.3.1.3.(1) 9.3.1.4.
r	CSA	CAN/CSA-A23.2-M90	Methods of Test for Concrete	9.3.1.8.(1)
	CSA	CAN/CSA-A82.1-M87	Burned Clay Brick (Solid Masonry Units Made from Clay or Shale)	9.20.2.1.(1)
	CSA	A82.3-M1978	Calcium Silicate (Sand-Lime) Building Brick	9.20.2.1.(1)
	CSA	A82.4-M1978	Structural Clay Load-Bearing Wall Tile	9.20.2.1.(1)
	CSA	A82.5-M1978	Structural Clay Non-Load-Bearing Tile	9.20.2.1.(1)
	CSA	A82.22-M1977	Gypsum Plasters	9.20.3.1.(1)
	CSA	A82.27-M1977	Gypsum Board Products	Table 9.23.16.A. 9.29.5.2.
	CSA	A82.30-M1980	Interior Furring, Lathing and Gypsum Plastering	9.29.4.1.
	CSA	A82.31-M1980	Gypsum Board Application	9.29.5.1.(2)
	CSA	A82.56-M1976	Aggregate for Masonry Mortar	9.20.3.1.(1)
	CSA	CAN3-A93-M82	Natural Airflow Ventilators for Buildings	9.19.1.1.(4)
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Issuing Agency	Document Number	Title of Document	Code Reference
CSA	A101-M1983	Thermal Insulation, Mineral Fibre, for Buildings	9.25.3.1.(1) Table 9.23.16.A.
CSA	A123.1-M1979	Asphalt Shingles Surfaced with Mineral Granules	9.26.2.1.(1)
CSA	A123.2-M1979	Asphalt Coated Roofing Sheets	9.26.2.1.(1)
CSA	A123.3-M1979	Asphalt or Tar Saturated Roofing Felt	9.26.2.1.(1)
CSA	A123.4-M1979	Bitumen for Use in Construction of Built-Up Roof Coverings and Dampproofing and Waterproofing Systems	9.13.2.1.(1) 9.26.2.1.(1)
CSA	A123.17-1963	Asphalt-Saturated Felted Glass-Fibre Mat for Use in Construction of Built-Up Roofs	9.26.2.1.(1)
CSA	CAN3-A123.51-M85	Asphalt Shingle Application on Roof Slopes 1:3 and Steeper	9.26.1.2.
CSA	CAN3-A123.52-M85	Asphalt Shingle Application on Roof Slopes 1:6 to less than 1:3	9.26.1.2.
CSA	CAN3-A165.1-M85	Concrete Masonry Units	9.15.2.2. 9.20.2.1.(1) 9.20.2.6.(1)
CSA	CAN3-A165.2-M85	Concrete Brick Masonry Units	9.20.2.1.(1)
CSA	CAN3-A165.3-M85	Prefaced Concrete Masonry Units	9.20.2.1.(1)
CSA	CAN3-A165.4-M85	Autoclaved Cellular Units	9.20.2.1.(1)
CSA	CAN/CSA-A247-M86	Insulating Fibreboard	9.23.15.6.(3) Table 9.23.16.A. 9.25.3.1.(1) 9.29.8.1.
CSA	CAN3-A266.1-M78	Air-Entraining Admixtures for Concrete	9.3.1.9.
CSA	CAN3-A266.2-M78	Chemical Admixtures for Concrete	9.3.1.9.
CSA	CAN3-A371-M84	Masonry Construction for Buildings	9.20.15.2.
CSA	CAN/CSA-A405-M87	Design and Construction of Masonry Chimneys and Fireplaces	9.21.3.5. 9.22.5.2.(2)
CSA	CAN3-A438-M84	Concrete Construction for Housing and Small Buildings	9.3.1.1.
r CSA	CAN/CSA-A440-M90	Windows	9.7.2.1. 9.7.6.1.
r2 CSA	B51-M1991	Boiler, Pressure Vessel and Pressure Piping Code	6.2.1.4.(1)
r2 CSA	B52-M1991	Mechanical Refrigeration Code	6.2.1.4.(1)
CSA	B111-1974	Wire Nails, Spikes and Staples	9.23.3.1. 9.26.2.2.(1) 9.29.5.6.
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	Issuing Agency	Document Number	Title of Document	Code Reference
r	CSA	CAN/CSA-B139-M91	Installation Code for Oil Burning Equipment	6.2.1.4.(1)
	CSA	CAN/CSA-B182.1-87	Plastic Drain and Sewer Pipe and Pipe Fittings	9.14.3.1.(1)
	CSA	B228.1-1968	Pipes, Ducts, and Fittings for Residential Type Air Conditioning Systems	6.2.4.2.(2)
r2	CSA	CAN/CSA-B365-M91	Installation Code for Solid-Fuel Burning Appliances and Equipment	6.2.1.4.(1) 9.21.1.3.(2) 9.22.10.1. 9.33.1.2.
r	CSA	C22.1-1990	Canadian Electrical Code, Part 1	6.2.1.4.(1) 9.34.1.1.
	CSA	C22.2 No. 0.3-M1985	Test Methods for Electrical Wires and Cables	3.1.4.3.(1)
	CSA	C22.2 No.113-M1984	Fans and Ventilators	9.32.3.3.(2)
	CSA	CAN/CSA-C444-M87	Installation Requirements for Heat Recovery Ventilators	6.2.1.7.
r	CSA	CAN/CSA-F280-M90	Determining the Required Capacity of Residential Space Heating and Cooling Appliances	6.2.1.2.
r2	CSA	CAN/CSA-G40.21-M91	Structural Quality Steels	9.23.4.2.(2)
	CSA	CAN3-G401-M81	Corrugated Steel Pipe Products	9.14.3.1.(1)
	CSA	CAN/CSA-O80.1-M89	Preservative Treatment of All Timber Products by Pressure Processes	9.3.2.9.(1)
	CSA	CAN/CSA-O80.2-M89	Preservative Treatment of Lumber, Timber, Bridge Ties, and Mine Ties by Pressure Processes	4.2.3.2. 9.3.2.9.(1)
	CSA	CAN/CSA-O80.9-M1989	Preservative Treatment of Plywood by Pressure Processes	9.3.2.9.(1)
	CSA	CAN/CSA-O80.15-M89	Preservative Treatment of Wood for Building Foundation Systems, Basements, and Crawl Spaces by Pressure Processes	9.3.2.9.(1)
	CSA	CAN3-O86-M84	Engineering Design in Wood (Working Stress Design)	4.3.1.1.
	CSA	CAN/CSA-O86.1-M89	Engineering Design in Wood (Limit States Design)	4.3.1.1.
	CSA	O115-M1982	Hardwood and Decorative Plywood	9.27.9.1. 9.30.2.2.(1)
	CSA	O118.1-M88	Western Red Cedar Shingles and Shakes	9.26.2.1.(1) 9.27.7.1.(1)
	CSA	O121-M1978	Douglas Fir Plywood	9.23.14.2.(1) 9.23.15.1.(1)
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	Issuing Agency	Document Number	Title of Document	Code Reference
				Table 9.23.16.A. 9.27.9.1. 9.30.2.2.(1)
r	CSA	CAN/CSA-O122-M89	Structural Glued-Laminated Timber	9.23.4.3.(2)
r	CSA	CAN/CSA-O132.2-M90	Wood Flush Doors	9.6.4.1.(1)
r2	CSA	CAN/CSA-O141-91	Softwood Lumber	9.3.2.6.
	CSA	O151- M1978	Canadian Softwood Plywood	9.23.14.2.(1) 9.23.15.1.(1) Table 9.23.16.A. 9.27.9.1. 9.30.2.2.(1)
	CSA	O153-M1980	Poplar Plywood	9.23.14.2.(1) 9.23.15.1.(1) Table 9.23.16.A. 9.27.9.1. 9.30.2.2.(1)
	CSA	CAN/CSA-O177-M89	Qualification Code for Manufacturers of Structural Glued-Laminated Timber	4.3.1.2.
	CSA	CAN3-O188.1-M78	Interior Mat-Formed Wood Particleboard	9.23.14.2.(3) 9.29.9.1.(1) 9.30.2.2.(1)
	CSA	CAN/CSA-O325.0-88	Construction Sheathing	9.23.14.2.(1) 9.23.15.1.(1) Table 9.23.16.B.
	CSA	CAN3-O437.0-M85	Waferboard and Strandboard	9.23.14.2.(1) 9.23.15.1.(1) Table 9.23.16.A. 9.27.11.1. 9.29.9.1.(2) 9.30.2.2.(1)
	CSA	CAN3-S304-M84	Masonry Design for Buildings	4.3.2.1.
	CSA	S307-M1980	Load Test Procedure for Wood Roof Trusses for Houses and Small Buildings	9.23.13.11.(9)
	CSA	CAN3-S406-M83	Construction of Preserved Wood Foundations	9.15.1.3.(3)
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	Issuing Agency	Document Number	Title of Document	Code Reference
r2	NLGA	1991	Standard Grading Rules for Canadian Lumber	9.3.2.1. Table 9.3.2.A.
r	ULC	CAN/ULC-S101-M89	Standard Methods of Fire Endurance Tests of Building Construction and Materials	3.1.7.1.(1)
	ULC	CAN/ULC-S102-M88	Standard Method of Test for Surface Burning Characteristics of Building Materials and Assemblies	3.1.12.1.(1)
	ULC	CAN/ULC-S102.2-M88	Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies	3.1.12.1.(2)
	ULC	CAN/ULC-S109-M87	Standard for Flame Tests of Flame-Resistant Fabrics and Films	6.2.3.4.(1) 6.2.3.5.
	ULC	CAN/ULC S110-M86	Standard Methods of Fire Test for Air Ducts	6.2.3.2.(2) 6.2.3.2.(4)
	ULC	CAN4-S111-M80	Standard Method of Fire Tests for Air Filter Units	6.2.3.14.(1)
	ULC	CAN4-S114-M80	Standard Method of Test for Determination of Non-Combustibility in Building Materials	1.1.3.2.
	ULC	CAN4-S124-M85	Standard Method of Test for the Evaluation of Protective Coverings for Foamed Plastic	3.1.5.11.(2)
	ULC	CAN/ULC-S610-M87	Standard for Factory-Built Fireplaces	9.22.8.1.
	ULC	CAN/ULC-S629-M87	Standard for 650°C Factory-Built Chimneys	9.21.1.2.
	ULC	CAN/ULC-S639-M87	Standard for Steel Liner Assemblies for Solid-Fuel Burning Masonry Fireplace	9.22.2.3.
	Column 1	2	3	4

(b) an *exit* doorway not more than 1.5 m above adjacent ground level.

* **(2)** The travel limit from a floor level in a *dwelling unit* to an *exit* door may exceed 1 *storey* where that floor level is served by an openable window providing an unobstructed opening of not less than 1 m in height and 0.55 m in width, located so that the sill is not more than 1 m above the floor and not more than 7 m above adjacent ground level.

* **(3)** The travel limit from a floor level in a *dwelling unit* to an *exit* door may exceed 1 *storey* where that floor level has direct access to a balcony.

Section 9.10 Fire Protection

9.10.1. General

9.10.1.2. Sloped Roofs. For the purposes of this Section, roofs with slopes of 60° or more to the horizontal and which are adjacent to a room or space intended for *occupancy* shall be considered as a wall.

9.10.3. Ratings

9.10.3.1. Fire-Resistance and Fire-Protection Ratings. Where a *fire-resistance rating* or a *fire-protection rating* is required in this Section for an element of a *building*, such rating shall be determined in conformance with Chapter 2 of the Supplement to the NBC 1990, with the test methods described in Part 3 or with A-9.10.3.1. in Appendix A.

* **3.1.7.1. Determination of Ratings**

(1) Where a material, assembly of materials or a structural member is required to have a *fire-resistance rating*, the rating shall be determined on the basis of the results of tests conducted in conformance with CAN/ULC-S101-M, "Standard Methods of Fire Endurance Tests of Building Construction and Materials." r2

9.10.3.2. Flame-Spread Ratings

(1) Where a *flame-spread rating* is required in this Section for an element of a *building*, such rating shall be determined in accordance with the test methods described in Part 3, or in accordance with Chapter 2 of the Supplement to the NBC 1990.

* **3.1.12.1. Determination of Ratings**

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

(2) The *flame-spread rating* and smoke developed classification of a material or assembly of materials shall be determined on the basis of not less than 3 tests conducted in conformance with CAN/ULC-S102.2-M, "Standard Method of Test for Surface Burning Characteristics of Flooring, Floor Covering, and Miscellaneous Materials and Assemblies," where the material or assembly of materials

(a) is designed for use in a relatively horizontal position with only its top surface exposed to air,

(b) cannot be tested in conformance with Sentence (1) without the use of supporting material that is not representative of the intended installation, or

(c) is thermoplastic.

(2) Unless the *flame-spread rating* is referred to herein as a "surface *flame-spread rating*," it shall apply to any surface of the element being considered that would be exposed by cutting through it as well as to the exposed surface of the element.

9.10.3.3. Fire Exposure

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

(3) *Firewalls* and interior vertical *fire separations* required to have *fire-resistance ratings* shall be rated for exposure to fire on each side.

9.10.4. Building Size Determination

9.10.4.1. Mezzanines not Considered as Storeys

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(1) *Mezzanines* shall not be considered as *storeys* for the purpose of determining *building height* where the aggregate area of *mezzanine* floors does not exceed 10 per cent of the *floor area* of the *storey* in which they are located.

(2) *Mezzanines* shall not be considered as *storeys* for the purpose of determining *building height* where they occupy an aggregate area of less than 40 per cent of the *floor area* of the *storey* in which they are located provided the space above the *mezzanine* floors and the floor below them have no visual obstructions more than 1 070 mm above such floors. (See A-3.2.1.1.(3) in Appendix A.)

* **A-3.2.1.1.(3) Building Height.** Where mezzanines are located at the same level but in different portions of a building, it is the intent of this Sentence that the aggregate area of all such mezzanines be used in relation to the area of the storey in which they are located. For example, mezzanines in *dwelling units* are visually obstructed by interior partitions or fire separations between *dwelling units*, thus, the requirement in Sentence 9.10.4.1.(2) does not apply.

Where the aggregate area of a mezzanine, consisting of a number of mezzanines in separate *dwelling units*, exceeds 10 per cent of the area of the storey in which it is located, that mezzanine is considered as an additional storey in the determination of building height.

e * 9.10.5. Permitted Openings in Wall Membranes

9.10.5.1. Permitted Openings in Wall Membranes

* **(1)** Except as permitted in Sentence (2), a membrane forming part of an assembly required to have a *fire-resistance rating* shall not be pierced by openings into the assembly unless the assembly has been tested and rated for such openings.

(2) A wall membrane forming part of an assembly required to have a *fire-resistance rating* may be pierced by openings for electrical and similar service outlet boxes provided such outlet boxes are tightly fitted. *

(3) Where boxes referred to in Sentence (2) are located on both sides of walls required to provide a *fire-resistance rating*, they shall be offset where necessary to maintain the integrity of the *fire separation*.

9.10.7. Protection of Steel Members

9.10.7.1. Except as permitted in Article 3.2.2.3., structural steel members used in construction required to have a *fire-resistance rating* shall be protected to provide the required *fire-resistance rating*.

3.2.2.3. Exceptions to Structural Fire Protection *

(1) Fire protection is not required for

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

(b) steel lintels over openings greater than those in Clause (a) provided such lintels are supported at intervals of not more than 2 m by structural members with the required *fire-resistance rating*,

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

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

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

(g) *loadbearing* steel or concrete members wholly or partially outside of a *building* face in *buildings*, provided such members are not less than 1 m away from any *unprotected opening* in an exterior wall, or shielded from heat radiation in the event of a fire within a *building* by construction that will provide the same

Table A–9

Forming Part of Sentence 9.23.4.1.(1)

Maximum Spans (m) for Built-up Floor Beams Supporting not more than Two Floors in Houses[1]

Commercial Designation	Grade	Supported Length, m	Size of Built-Up Beam, mm					
			3 – 38 x 184	4 – 38 x 184	3 – 38 x 235	4 – 38 x 235	3 – 38 x 286	4 – 38 x 286
Douglas Fir – Larch (includes Douglas Fir and Western Larch)	Select Structural	2.4	2.91	3.36	3.56	4.11	3.98	4.77
		3.0	2.46	3.01	2.88	3.68	3.19	4.25
		3.6	2.05	2.73	2.40	3.20	2.66	3.54
		4.2	1.76	2.34	2.06	2.74	2.28	3.04
		4.8	1.54	2.05	1.80	2.40	1.99	2.66
	No. 1 and No. 2	2.4	2.27	2.62	2.77	3.20	3.22	3.72
		3.0	2.03	2.34	2.48	2.86	2.88	3.32
		3.6	1.85	2.14	2.26	2.62	2.63	3.03
		4.2	1.71	1.98	2.06	2.42	2.28	2.81
		4.8	1.54	1.85	1.80	2.26	1.99	2.63
Hemlock – Fir (includes Western Hemlock and Amabilis Fir)	Select Structural	2.4	2.52	3.31	2.95	3.93	3.26	4.35
		3.0	2.01	2.68	2.36	3.14	2.61	3.48
		3.6	1.68	2.24	1.96	2.62	2.17	2.90
		4.2	1.44	1.92	1.68	2.25	1.86	2.48
		4.8	1.26	1.68	1.47	1.96	1.63	2.17
	No. 1 and No. 2	2.4	2.38	2.75	2.91	3.36	3.26	3.90
		3.0	2.01	2.46	2.36	3.00	2.61	3.48
		3.6	1.68	2.24	1.96	2.62	2.17	2.90
		4.2	1.44	1.92	1.68	2.25	1.86	2.48
		4.8	1.26	1.68	1.47	1.96	1.63	2.17
Spruce – Pine – Fir (includes Spruce (all species except Coast Sitka Spruce), Jack Pine, Lodgepole Pine, Balsam Fir and Alpine Fir)	Select Structural	2.4	2.80	3.36	3.27	4.11	3.62	4.77
		3.0	2.24	2.98	2.62	3.49	2.90	3.86
		3.6	1.86	2.49	2.18	2.91	2.42	3.22
		4.2	1.60	2.13	1.87	2.49	2.07	2.76
		4.8	1.40	1.86	1.64	2.18	1.81	2.42
	No. 1 and No. 2	2.4	2.46	2.85	3.01	3.48	3.50	4.04
		3.0	2.20	2.55	2.62	3.11	2.90	3.61
		3.6	1.86	2.32	2.18	2.84	2.42	3.22
		4.2	1.60	2.13	1.87	2.49	2.07	2.76
		4.8	1.40	1.86	1.64	2.18	1.81	2.42
Northern Species (includes any Canadian softwood covered by the NLGA Standard Grading Rules)	Select Structural	2.4	2.34	2.70	2.86	3.30	3.26	3.83
		3.0	2.01	2.41	2.36	2.95	2.61	3.42
		3.6	1.68	2.20	1.96	2.62	2.17	2.90
		4.2	1.44	1.92	1.68	2.25	1.86	2.48
		4.8	1.26	1.68	1.47	1.96	1.63	2.17
	No. 1 and No. 2	2.4	1.98	2.28	2.42	2.79	2.81	3.24
		3.0	1.77	2.04	2.16	2.50	2.51	2.90
		3.6	1.61	1.86	1.96	2.28	2.17	2.65
		4.2	1.44	1.73	1.68	2.11	1.86	2.45
		4.8	1.26	1.61	1.47	1.96	1.63	2.17

Note to Table A-9

(1) See A-9.23.4.1.(1) in Appendix A

Table A–10

Forming Part of Article 9.23.13.11.

Maximum Clear Spans (m) between End Supports for Fink Trusses										
Top Member Size, mm	Bottom Member Size, mm	Roof Slope	No. 1 Grade Lumber				No. 2 Grade Lumber			
			Design Roof Snow Load, kPa				Design Roof Snow Load, kPa			
			1.0	1.5	2.0	2.5	1.0	1.5	2.0	2.5
38 × 89	38 × 89	1 in 4.8	6.75	4.87	–	–	5.84	4.01	–	–
		1 in 4	9.57	8.12	6.01	4.54	8.02	7.13	5.18	3.78
		1 in 3	9.60	8.83	7.62	6.75	8.91	7.69	6.60	5.84
		1 in 2.4	9.80	9.04	7.79	6.93	9.11	7.87	6.78	6.01
	38 × 114	1 in 4.8	7.74	5.74	3.78	–	6.75	4.85	–	–
		1 in 4	9.27	8.53	7.06	5.48	8.58	7.36	6.14	4.67
		1 in 3	9.60	8.83	7.62	6.75	8.91	7.69	6.60	5.84
		1 in 2.4	9.80	9.04	7.79	6.93	9.11	7.87	6.78	6.01
	38 × 140	1 in 4.8	8.50	6.35	4.39	–	7.44	5.46	3.47	–
		1 in 4	9.27	8.53	7.28	5.89	8.58	7.36	6.29	5.08
		1 in 3	9.60	8.83	7.62	6.75	8.91	7.69	6.60	5.84
		1 in 2.4	9.80	9.04	7.79	6.93	9.11	7.87	6.78	6.01
38 × 114	38 × 89	1 in 4.8	7.97	5.91	3.96	–	6.95	5.02	–	–
		1 in 4	9.57	8.66	7.18	5.56	8.02	7.16	6.24	4.77
		1 in 3	10.54	9.75	8.81	7.97	8.96	8.20	7.31	6.57
		1 in 2.4	11.20	9.90	9.65	8.89	9.57	8.91	8.10	7.41
	38 × 114	1 in 4.8	9.27	6.98	4.95	3.30	8.12	6.04	4.08	–
		1 in 4	11.91	10.23	8.48	6.68	10.31	9.24	7.44	5.79
		1 in 3	12.19	10.64	9.14	8.66	10.74	9.24	8.48	7.49
		1 in 2.4	12.19	10.89	9.39	8.91	10.99	9.49	8.71	7.74
	38 × 140	1 in 4.8	10.23	7.79	5.63	4.08	9.01	6.78	4.77	–
		1 in 4	11.91	10.23	9.11	7.23	10.31	9.47	8.05	6.29
		1 in 3	12.19	10.64	9.14	8.66	10.74	9.47	8.48	7.49
		1 in 2.4	12.19	10.89	9.39	8.91	10.99	9.49	8.71	7.74
38 × 140	38 × 89	1 in 4.8	8.89	6.73	4.72	–	7.39	5.81	3.86	–
		1 in 4	9.57	8.66	7.62	6.35	8.02	7.16	6.24	5.48
		1 in 3	10.54	9.75	8.81	7.97	8.96	8.20	7.31	6.57
		1 in 2.4	11.20	10.49	9.65	8.89	9.57	8.91	8.10	7.41
	38 × 114	1 in 4.8	10.46	7.97	5.79	4.24	9.22	6.95	4.92	3.27
		1 in 4	12.19	11.12	9.62	7.64	10.33	9.24	8.02	6.68
		1 in 3	12.19	12.19	11.17	9.90	11.50	10.54	9.42	8.45
		1 in 2.4	12.19	12.19	11.48	10.18	12.19	11.45	9.98	9.44
	38 × 140	1 in 4.8	11.68	8.96	6.60	5.00	10.33	7.84	5.68	4.14
		1 in 4	12.19	12.19	10.43	8.33	12.19	10.82	9.22	7.31
		1 in 3	12.19	12.19	11.17	9.90	12.19	11.30	9.67	9.16
		1 in 2.4	12.19	12.19	11.48	10.18	12.19	11.60	9.98	9.44

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NWT 10 CONST S-P-F S-GRN	Northwest Territories Forest Industries Association 6301 Silverthorne Road P.O. Box 346 Sardis, British Columbia V2R 2N1

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[1] Items contained in the Index are referenced to the numbering system used in this Code instead of to page numbers. For more information on the numbering system, refer to "A Guide to the Use of the Code" at the front of the document.

[2] Part 6 requirement reproduced in Section 9.33.

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