

Notice

This presentation is intended for general information purposes only. It only identifies certain highlights of the Building Code. Code users are strongly advised to consult the official records for specific legislative and regulatory requirements, including:

- The *Building Code Act, 1992*, as amended; and
- The Building Code, including amendments not yet in force

Copies of these documents are available from Publications Ontario at 1-800-668-9938 or eLaws at www.e-laws.gov.on.ca

v. Aug 12, 2008

Part 6, 7, 8, 11, & 12

This slide deck is part of a series of slide decks prepared to accompany the Ministry of Municipal and Affairs and Housing's information sessions on the 2006 Building Code. Other slide decks and locations for the Ministry's information sessions are available from the Building Code website at www.obc.mah.gov.on.ca.

The complete series of slides is intended to:

- Provide an overview of the 2006 Building Code's new objective-based format and
- Introduce certain technical highlights of Ontario's 2006 Building Code

Overview: Agenda

- The morning session:

- Purpose
- Introduction
- Format and Structure
- Highlights of changes to Part 3
- Highlights of changes to Part 9

- The afternoon session:

- Highlights of changes to Parts 4, 5, 6, 7, 8 and 11
- Part 12: Resource Conservation (Energy and Water)

**2006 Building Code:
Technical Changes**

Division B – Part 6

HVAC

Outline

-
- Combined Systems
 - Natural ventilation
 - Garage ventilation
 - Commercial Cooking Equipment
 - Ductwork and fittings
 - Interconnection of Systems
 - Air Washer and Evaporative Cooling Towers
 - Clearances

Outline

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Combined Systems

•**Article 6.2.1.1.**

•Reference to **Guideline for Integrated Heating Systems** has been removed since it is contained in the HRAI Digest

•**Article 6.2.1.4.**

•Reference to **CSA B214 Standard for the design** and installation of hydronic heating system is added

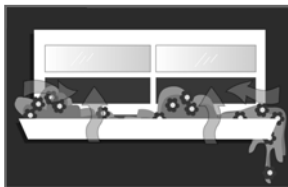
Outline

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6.2.2.2. Natural Ventilation

New sentence added for non-residential use

“(2) Where climatic conditions permit, ... may be ventilated by natural ventilation methods ... where engineering data demonstrates ...”



6.2.2.2. Natural Ventilation

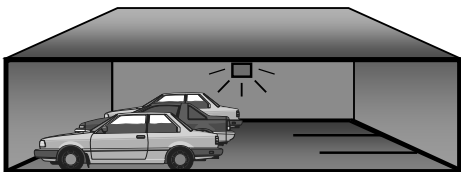
- **Alternative** to mechanical ventilation
- **Must provide** required ventilation
- Permitted only in certain **climatic regions**
- Residential suites **still require** mechanical ventilation

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6.2.2.3. Ventilation of Enclosed Storage Garages

- Requirement added to address where the majority of vehicles are **diesel-fueled**
- Controlled by **nitrogen dioxide or other acceptable** monitoring device



6.2.2.3. Ventilation of Enclosed Storage Garages



- Requirement for the rate of continuous supply of outdoor air **retained** to address **other fuels**

Outline



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6.2.2.6. Commercial Cooking Equipment



Sentence (2)


Fire protection systems for high efficiency and high temperature cooking equipment using vegetable oil or animal fat must conform to the acceptable fire extinguishing system

- (a) UL 300 Standard, or
- (b) ULC/ORD-C1254.6 Standard



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Combined Systems
Natural ventilation
Garage ventilation
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6.2.3.2. Ductwork and fittings

(6) All ductwork and fittings shall be constructed and installed in conformance with SMACNA Manuals and ASHRAE Handbooks.

(7) All duct materials and fittings shall be

(a) suitable for exposure to the temperature and humidity of the air , and

(b) resistant to corrosion due to contaminants in the air



Outline

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Natural ventilation
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6.2.3.9. Interconnection of Systems

Exhaust ducts serving a room may exhaust through the enclosed storage garage provided

- (a) the room only accessible from the garage,
- (b) exhaust air contains no contamination,
- (c) garage exhaust runs continuously,
- (d) garage exhaust air volume is equal to or exceeds those exhaust air volume entering the garage, and
- (e) a leakage rate of 1 smoke/fire damper rated in accordance with CAN/ULC-S112.1-M Standard.

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- Combined Systems
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Air Washer and Evaporative Cooling Towers

All air washer and evaporative cooling towers must now be in **compliance** with NFPA 214, "Water-Cooling Towers" 2005 Edition



Outline

Combined Systems
Natural ventilation
Garage ventilation
Commercial Cooking Equipment
Ductwork and fittings
Interconnection of Systems
Air Washer and Evaporative Cooling Towers
Clearances

Clearances – Table 6.2.9.3.

Clearance Between Steam or Hot Water Pipes
and Combustible Material

Steam or Water Temperature, °C	Minimum Clearance, mm
Not above 95	No clearance
Above 95 to 120	15
Above 120	25

Clearances – Unit Heaters

- **OBC 2006:** “6.2.7.1.(1) Every *unit heater* ... shall be installed such that the clearances ... conform to Table 6.2.9.3.”
- Requirement **edited** for consistency with other similar requirements
- Requirement for “... a clearance of not less than 25 mm ...” **removed**

Clearances – Steam or Hot Water Radiator and Convectors 

- **OBC 2006:** “6.2.8.1.(2) ... shall be installed to conform to the clearance requirements of Table 6.2.9.3.”
- Reference to the table added to **clarify** the requirement
- Requirement **edited** for consistency with other similar requirements

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**2006 Building Code:
Technical Changes**

Division B – Part 7

Plumbing

Outline

-
- 7.4. Drainage Pipe Sizing
 - 7.5. Venting Harmonization
 - 7.6.2. Backflow Prevention Devices
 - 7.6.3. Water Pipe Sizing
 - O.Reg. 349/06:
 - Green Technology Design
 - Other Changes

Outline

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- 7.4. Drainage Pipe Sizing
 - 7.5. Venting Harmonization
 - 7.6.2. Backflow Prevention Devices
 - 7.6.3. Water Pipe Sizing
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7.4. Drainage Pipe Sizing

- OBC 1997
 - Sanitary drainage pipe sizing based on imperial gallons per minutes
 - Maximum allowable flow capacity within vertical sanitary drainage pipe to be 33%
 - No storm drainage pipe sizing requirement
- OBC 2006
 - Sanitary drainage pipe sizing based on fixture units
 - Maximum allowable flow capacity within vertical sanitary drainage pipe to be 29%
 - Storm drainage pipe sizing requirement is addressed which included "Flow Control Roof Drain"

Outline

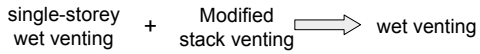
- 7.4. Drainage Pipe Sizing
- 7.5. Venting Harmonization
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- 7.6.3. Water Pipe Sizing
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7.5. Venting

- Revised completely
 - former venting requirements of British Columbia, Ontario and Model NPC harmonized
 - task group of experts reviewed information
 - basis for uniformity of venting across Canada

7.5. Venting

- Changes resulting from harmonization
 - single-storey wet venting and modified stack venting are now combined



- circuit venting requirements have been revised.
-
- Major step toward uniformity of venting requirements across Canada

1.4.1.2. Definitions in Division A

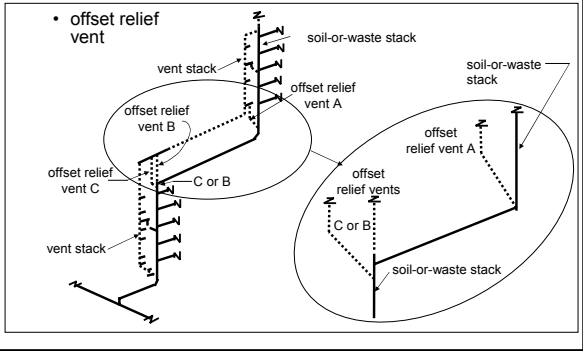
- New
 - additional circuit vent
 - air admittance valve
 - offset relief vent
 - trap arm
- Revised for editorial consistency
 - circuit vent
 - continuous vent
 - relief vent
 - sanitary building drain

Air-Admittance valves

- Operating characteristics
 - seals at zero pressure difference and above
 - opens at 0.01 psi below atmospheric pressure

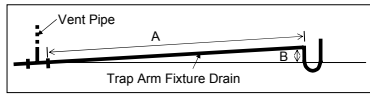


1.4.1.2. Definitions in Division A



7.5. Venting

- Length of Trap Arm - Table 7.5.6.3.
 - trap sizes
 - minimum slopes



Size of Trap Served, inches	Maximum Length of Trap Arm, metres	Minimum Slope
1 ¼	1.5	1/50
1 ½	1.5	1/50
2	1.5	1/50
3	1.8	1/50
4	3	1/50
6	5	1/50

Outline

- 7.4. Drainage Pipe Sizing
- 7.5. Venting Harmonization
- 7.6.2. Backflow Prevention Devices
- 7.6.3. Water Pipe Sizing
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7.6.2.4. Backflow Prevention

- Results of Harmonization
 - definitions added for various fire sprinkler/standpipe systems
 - backflow prevention for various fire sprinkler/standpipe systems covered comprehensively
 - residential full flow through fire sprinkler system is exempted
 - changes to CSA B64.10, "Backflow Prevention Devices Standard"
 - standard split into two divisions

Outline

- 7.4. Drainage Pipe Sizing
- 7.5. Venting Harmonization
- 7.6.2. Backflow Prevention Devices
- 7.6.3. Water Pipe Sizing
- O.Reg. 349/06:
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7.6.3. Water Pipe Sizing

- OBC 1997
 - Water service piping only required to be a minimum size of 3/4".
 - Water distribution piping only required to conform to the applicable minimum size.
- OBC 2006
 - Water service pipe must be sized according to the peak demand flow with a minimum size of 3/4".
 - Water distribution piping must be sized in accordance with the applicable water flow pressure and its minimum size (except single dwelling unit building).

Outline

- 7.4. Drainage pipe sizing
- 7.5. Venting Harmonization
- 7.6.2. Backflow Prevention Devices
- 7.6.3. Water pipe sizing
- O.Reg. 349/06:
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Green Technology Design

Storm sewage or greywater may be reused

Wastewater Recovery System

A pre-engineered wastewater heat recovery system is permitted to have

- a lesser centre-line radius in 90 degree elbow
- connection to piping of a lesser size
- only Type K or L potable water copper tube to be used

Green Technology Design

- Solar Domestic Hot Water System

- Packaged system for solar heating of potable water in residential occupancies must be installed according to CAN/CSA F383, and the equipment must conform to the CAN/CSA F379.1 Standard

- Non-package solar heating potable water system must be installed according to good engineering practice

Outline

- 7.4. Drainage pipe sizing
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- 7.6.3. Water pipe sizing
- O.Reg. 349/06:
 - Green Technology Design
 - Other Changes

7.2.2.2. Fixture Standards

- Fixtures are now required to conform to their applicable CAN/CSA Standards

Outdated Products

- Deletion of Outdated Products
- OBC 1997 References
 - 7.2.5.8. Polybutylene products
 - 7.2.7.9. Aluminum products
 - 7.3.2.6. Burned lead joints
 - 7.3.2.8. Cold caulked joints

Macerating Toilets

- Operation
- Installation



Macerating Toilets

- Covered in 7.2.2.2.(8) and 7.4.3.5.(1)
 - alternative method of providing water closets
 - pumps waste via a small drain line
 - must conform to CSA B45.9
 - install only where connection to drain is not available

7.2.5.6. Polyethylene Pipe

- New Product
 - recognized for use in trenchless technology
 - rehabilitation of damaged drain lines
 - must conform to ASTM F714

7.2.10.15. Water Hammer Arresters

- Factory built water hammer arresters must now conform to ASSE 1010

7.5.9. Air Admittance Valves


- 7.2.10.16. – AAV must now conform to ASSE 1051
- Vent terminal
 - limitations on installations
 - permitted for single fixtures only
 - rated for size of vent pipe
 - accessible
 - located so that air can enter the valve

7.3.2.4. Soldered Joints

- Revised provisions
 - generic method replaced by reference to the ASTM B 828 standard

**7.4.2.1. Connections to Sanitary  Ontario
Drainage Systems**

- Suds Zone Requirements
 - to avoid disruption of venting systems
 - drainage and venting systems serving more than one clothes washer
 - regulate connection of additional soil-or-waste pipes

7.4.4.3. Interceptors  Ontario

- Grease Interceptor
 - Except for suites of residential occupancy, where a fixture discharges sewage that includes fats, oils or grease and is located in an area that food is cooked, processed or prepared, it must discharge through a grease interceptor

**7.4.5.1.  Ontario
Traps for Sanitary Drainage Systems**

- Dishwasher connections
 - discharge pipe must rise as high as possible
 - connect to the trap by means of a Y fitting
 - prevents depletion of trap seal

7.4.6.4. Protection from Backflow

- Backwater valves are permitted to be installed on the building drains and building sewers,
 - normally open full port type valve
 - gate valves are not permitted
 - conforming to CSA B70, B181.1, B181.2, B182.1 and B182.2
 - serving only one dwelling unit

7.4.7.4. Location of Cleanouts

- Cleanouts in health care facilities
 - to avoid contamination by body fluids
 - located 150 mm above the flood level rim of fixture
 - to limit the spread of disease

Slope and Length of Drainage Pipe - 7.4.8.

- Minimum Slope – 7.4.8.1.
 - Lesser slope is permitted if it will produce a gravity flow of not less than 0.6 m/s.
- Fixture Outlet Pipe – 7.4.8.2.
 - Increased from 900 mm to 1200 mm.

7.6.1.1. Hot Water System

- Water Distribution System
- Hot water supply piping having a developed length of more than 30 metres or serving more than 4 storeys must be maintained by
 - recirculation, or
 - a self-regulating heat tracing system

7.6.5.2. Showers

- Shower Valves
 - All valves supplying fixed location shower heads must be individually controlled by pressure-balanced, thermostatic-mixing valves, or controlled by a master thermostatic-mixing valve
 - Deck-mounted, hand-held, flexible-hose spray attachments are exempt from the thermal shock requirement as required by CSA B125 testing

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**2006 Building Code:
Technical Changes**

**Division B – Part 8
Sewage Systems**

8.2.1.3. Service Stations

Note 4 to Table 8.2.1.3.B. – Other Occupancies

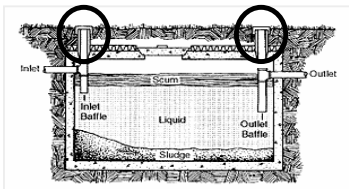
- Service stations (no car washing)
 - daily design sanitary sewage flow “per fuel outlet”
 - based on maximum number of gas nozzles that can be used at the same time



**8.2.2.3.
Septic Tank Access Opening**

8.2.2.3.(9)

- Access openings for septic tanks
 - must be located not more than 300 mm below the ground surface



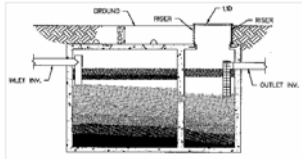
8.2.2.3.



Septic Tank Access Opening

8.2.2.3.(10)

- Access openings for septic tanks
 - where the top of the septic tank is located more than 300 mm below the ground surface
 - risers extending to within 300 mm of the ground surface are required



8.2.2.3. Risers



8.2.2.3.(11)

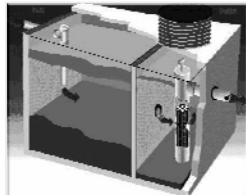
- Risers
 - must conform to the requirements of CSA B66
 - have adequate access openings to allow for regular maintenance

8.6.2.1. Effluent Filters



8.6.2.1.

- Effluent filters required in the outlet flow path of every septic tank
 - must conform to the requirements of NSF/ANSI 46
 - sized and installed in accordance with the manufacturer's recommendations
 - secured access opening required at the ground surface
 - to allow for regular maintenance



8.7.3.1. Shallow Buried Trench

8.7.3.1. (4)

- For a shallow buried trench
 - total length of distribution pipe
 - not less than the value determined by Table 8.7.3.1.



Table 8.7.3.1.

Column 1	Column 2
Percolation Time (T) of Soil, min/cm	Loading Rates, (L/m ²)/day
1 < T < 20	Q/75
20 < T < 50	Q/50
50 < T < 125	Q/30

8.7.3.1. Shallow Buried Trench

8.7.3.1. (4) Example:

Percolation time 1<T<20
Trench length = Q/75

T = design percolation time of the soil (min/cm)
Q = the total daily sanitary sewage flow in litres

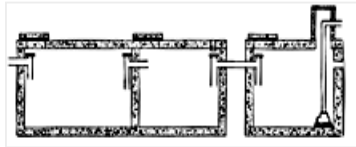
Column 1	Column 2
Percolation Time (T) of Soil, min/cm	Loading Rates, (L/m ²)/day
1 < T < 20	Q/75

8.7.6.2. Shallow Buried Trench



8.7.6.2.(3)

- Pump chamber must be sized to have sufficient storage volume
 - to permit the effluent to be evenly dosed on an hourly basis over a 24 h period



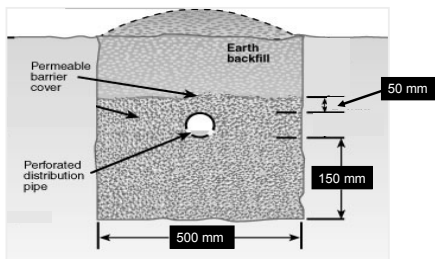
8.7.3.3 Septic Stone



8.7.3.3.(5)

- Distribution pipe must be installed in a layer of stone
 - washed, free of fine material with gradation conforming to Table 8.7.3.3.A.
 - not less than 500 mm in width
 - extend not less than 150 mm below the distribution piping
 - extend not less than 50 mm above the distribution piping

8.7.3.3 Septic Stone

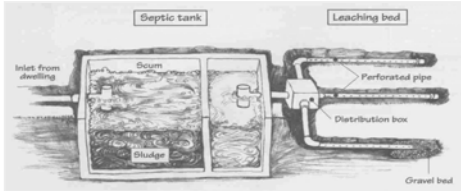


DRAWING NOT TO SCALE

11.3.5.1 Existing Septic Tanks

11.3.5.1.(1)

- Septic tanks subjected to material alteration, repair or replacement
 - construction of septic tank must conform to Part 8



DRAWING NOT TO SCALE

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2006 Building Code: Technical Changes

DIVISION B - Part 11 Renovation

11.3.3.2. Extensive Renovation

- 11.3.3.2.(2)

- Section 3.8. applies to proposed construction
- in existing suites with an area greater than 300 m²
- where
 - Existing interior walls or floor assemblies are substantially removed and new walls or floors assemblies are installed, and
 - If located on a floor area where the existing difference in elevation between the adjacent ground level and the floor level is not more than 200 mm

11.3.3.2 Extensive Renovation

- 11.3.3.2.(2)

- Section 3.8. applies to proposed construction in suites with an area greater than 300 m²
 - Located on a normally occupied accessible floor area where the difference in elevation between the adjacent ground level and the floor level of the entrance storey is not more than 200 mm

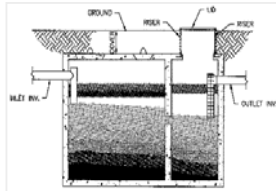
11.4.3.4. Change in Major Occupancy

- 11.4.3.4.(2)

- Requirements applicable to a change of major occupancy to one of a greater hazard index
 - Now applicable to any change of major occupancy

11.3.5.1 Existing Septic Tanks

- 11.3.5.1.(1)
- Septic tanks subjected to material alteration, repair or replacement
 - construction of septic tank must conform to Part 8




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2006 Building Code: Technical Changes


- Part 12 of Division B
Resource Conservation



Overview


- Part 12 - Resource Conservation
 - New Part
 - Contains requirements for
 - Energy Efficiency of Buildings
 - Water Conservation
 - Energy efficiency requirements will come into force in three stages
 - At the end of 2006, 2008, 2011



Overview

- 12.1. General**
 - Scope and Application
- 12.2. Energy Efficiency**
 - General Rules
- 12.3. Energy Efficiency of Part 9 Buildings**
 - Simplified Requirements for Non_residential Buildings
 - Thermal Insulation for Residential Buildings
 - Thermal Design for Residential Buildings
- 12.4. Water Efficiency**
 - Refers to Subsection 7.6.4 of Division B



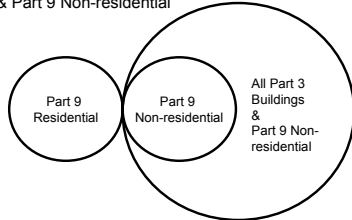
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- 12.4. Water Efficiency**
 - Refers to Subsection 7.6.4 of Division B

Overview:
12.2. Energy Efficiency



- Acceptable solutions are set out for three groups of buildings:
 - Part 9 Residential Buildings
 - Part 9 Non-residential Buildings
 - Part 3 All Buildings & Part 9 Non-residential Buildings



12.2. Energy Efficiency
Buildings other than Part 9 Residential buildings



- **12.2.1. General**
- Part 3 Buildings and Part 9 Non-Residential Buildings

1997 OBC	2006 OBC	
On or Before December 31, 2006 Article 2.1.1.11.	After December 31, 2006 Article 12.2.1.1.	After December 31, 2011 Article 12.2.1.2.
ASHRAE 90.1-1989 modified by SG-1	ASHRAE 90.1-2004 modified by SB-10	Energy efficiency is 25 % higher than mNECB – 1997
mNECB – 1997	mNECB-1997 modified by SB-10	

ANSI/ASHRAE/IESNA 90.1 "Energy Efficiency Design of New Buildings Except Lowrise Residential Buildings"

Model National Energy Code for Buildings (mNECB)

Energy Supplement SB-10

Exceptions include farm buildings, process buildings, and buildings identified in SB-10


12.2. Energy Efficiency
Part 9 Non-Residential buildings



- **12.2.1. General (Cont.)**
- Simplified Prescriptive Requirements


1997 OBC	2006 OBC	
On or Before December 31, 2006	After December 31, 2006 12.2.1.1.(4)	After December 31, 2011 12.2.1.2.(4)
None	Technical requirements are specified	(Reserved)

Exceptions include farm buildings, process buildings, buildings identified in SB-10, and buildings use electric space heating.




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 - Thermal Insulation for Residential Buildings
 - Thermal Design for Residential Buildings
- 12.4. Water Efficiency**
 - Refers to Subsection 7.6.4 of Division B



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 - Refers to Subsection 7.6.4 of Division B



Simplified Requirements for Part 9 Non-Residential Buildings

- **12.3.4. Buildings of Non-Residential Occupancies**
- **12.3.4.1. Application**
- **12.3.4.2. Thermal Resistance of the Building Envelope**
- Requirements are given in Tabular form for walls, roofs, floors, windows and slabs on ground.
- Tables contain:
 - Zone 1 & 2
 - Overall R values (except insulation for below grade and slab on ground)
 - Overall U values for Windows

Table 12.3.4.2.A.
Minimum Thermal Resistance of Building Assemblies Based on Degree-Day (Zone 1)

Building Assembly	Zone 1	Zone 2
Roof (flat)	0.10	0.10
Roof (pitched)	0.10	0.10
Wall (above grade)	0.10	0.10
Wall (below grade)	0.10	0.10
Floor (above grade)	0.10	0.10
Floor (below grade)	0.10	0.10
Slab on ground	0.10	0.10
Other assembly (see table 12.3.4.2.B)	0.10	0.10

Table 12.3.4.2.B.
Minimum Thermal Resistance for Slab-On-Ground Insulation

Building Assembly	Zone 1	Zone 2
Roof (flat)	0.10	0.10
Roof (pitched)	0.10	0.10
Wall (above grade)	0.10	0.10
Wall (below grade)	0.10	0.10
Floor (above grade)	0.10	0.10
Floor (below grade)	0.10	0.10
Slab on ground	0.10	0.10
Other assembly (see table 12.3.4.2.C)	0.10	0.10

Table 12.3.4.2.C.
Minimum Overall Coefficient of Heat Transfer for Windows

Building Assembly	Zone 1	Zone 2
Roof (flat)	0.10	0.10
Roof (pitched)	0.10	0.10
Wall (above grade)	0.10	0.10
Wall (below grade)	0.10	0.10
Floor (above grade)	0.10	0.10
Floor (below grade)	0.10	0.10
Slab on ground	0.10	0.10
Other assembly (see table 12.3.4.2.D)	0.10	0.10

Simplified Requirements for Part 9 Non-Residential Buildings (Cont.) 

- **12.3.4.3. Air Infiltration**
- **12.3.4.4. Heating, Ventilating and Air-Conditioning**
 - Applies to HVAC systems that serve a single zone
 - Refers to Energy Supplement SB-10 for equipment efficiencies
 - Describes where an economizer or heat recovery would be required
 - Sets out rules for HVAC controls

Simplified Requirements for Part 9 Non-Residential Buildings (Cont.) 

- **12.3.4.5. Ducts, Plenums and Piping**
 - Refers to SMACNA Manuals to minimize leakage from ducts
 - Requires insulation for HVAC pipes and exposed ducts
 - Values for pipes are prescribed
 - Thermal resistance for ducts is not less than RSI 1.4
 - Requires balancing for air and hydronic systems

Column 1	Column 2	Column 3
Use of pipe	Nominal pipe size not more than 40 mm	Nominal pipe size more than 40 mm
Steam	40	50
Hot water heating	25	30
Chilled water	15	20
Refrigerant	15	20

Simplified Requirements for Part 9 Non-Residential Buildings (Cont.) 

- **12.3.4.6. Service Water Heating**
 - Includes requirements for
 - Water heating equipment efficiencies
 - Insulation for domestic hot water pipes
 - Heat traps
- **12.3.4.7. Lighting (General)**
 - References Energy Supplement SB-10 for fluorescent ballast efficacies
 - Requires tandem wiring

12.2.2.1. Motion Sensors

- Where motion sensors are used to control minimum lighting in a public corridor or corridor providing access to exit, the motion sensors are required to be installed with:
 - switch controllers equipped for fail-safe operation, and
 - illumination timers set for minimum 15-minute duration
- Motion sensors are not permitted to control emergency lighting



Overview

12.1. General

- Scope and Application

12.2. Energy Efficiency

- General Rules

12.3. Energy Efficiency of Part 9 Buildings

- Simplified Requirements for Non_residential Buildings
- Thermal insulation for Residential Buildings
- Thermal Design for Residential Buildings

12.4. Water Efficiency

- Refers to Subsection 7.6.4 of Division B

Overview

12.1. General

- Scope and Application

12.2. Energy Efficiency

- General Rules

12.3. Energy Efficiency of Part 9 Buildings

- Simplified Requirements for Non_residential Buildings
- Thermal insulation for Residential Buildings
- Thermal Design for Residential Buildings

12.4. Water Efficiency

- Refers to Subsection 7.6.4 of Division B

**Part 9 Residential Buildings
Energy Efficiency**



Energy efficiency of Part 9 residential buildings can be achieved by conforming to one of the following:

- Thermal insulation requirements of Subsection 12.3.2.
 - as amended and relocated from Article 9.25.2.1. of 1997 OBC,
- Performance based "Thermal Design" requirements set out in Subsection 12.3.3.
 - as amended and relocated from Section 9.38. of 1997OBC,
- Energy Efficiency level of EnerGuide 80 in accordance with NRCan technical procedures

**Part 9 Residential Buildings
Insulation Requirements for Zone 1**



12.3.2.1. Required Insulation

Building Element	Minimum RSI Value Required			EnerGuide 80 Energy Efficiency Level
	1997 OBC	2006 OBC		
	On or Before December 31, 2006	After December 31, 2006 *	After December 31, 2011	
Windows and Sliding Doors	0.30 (1.70 R Value)	U=2.0 W/m ² C or ER operable=17 ER fix =27		
Ceiling below attic or roof space	5.40	7.00		
Roof assembly without attic or roof space	3.52	4.93		
Wall other than foundation wall	3.00	3.34		
Foundation walls enclosing heated space	1.41	2.11		

* Designers can also use EnerGuide 80 to achieve compliance

**Part 9 Residential Buildings
Insulation Requirements for Zone 2**



12.3.2.1. Required Insulation

Building Element	Minimum RSI Value Required			EnerGuide 80 Energy Efficiency Level
	1997 OBC	2006 OBC		
	On or Before December 31, 2006	After December 31, 2006 *	After December 31, 2011	
Windows and Sliding Doors	0.30 (1.70 R Value)	U=2.0 W/m ² C or ER operable=17 ER fix =27		
Ceiling below attic or roof space	6.70	7.00		
Roof assembly without attic or roof space	3.52	4.93		
Wall other than foundation wall	3.87	4.22		
Foundation walls enclosing heated space	2.11	2.11		

* Designers can also use EnerGuide 80 to achieve compliance

Part 9 Residential Buildings 
Basement Slabs and Slabs On Ground

- Insulation around slabs on grade is required to extend not less than 600 mm below grade
- If the underside of the entire slab on grade is insulated, the required RSI value may be reduced by 50%

Part 9 Residential Buildings 
12.3.3. Thermal Design

Table 12.3.3.3. was amended and relocated from Section 9.38.

Thermal resistance values for building assemblies have been increased to be consistent with the requirements of Subsection 12.3.2. Thermal Insulation for Residential Buildings.

Part 9 Residential Buildings 
Furnaces

12.3.1.2. Equipment Efficiency

- The minimum annual fuel utilization efficiency (AFUE) of a natural gas or propane furnace is required to be not less than 90 %.



Table 12.3.1.2.
 Furnace Minimum Annual Fuel Utilization Efficiency
 Forming Part of Sentence 12.3.1.2.(1)

Column 1	Column 2
Furnace Fuel Source	Minimum Annual Fuel Utilization Efficiency
Natural gas	90%
Propane	90%
Oil	



Further Information

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