ENERGY EFFICIENCY COMPLIANCE CHECKLIST PART 9 NON RESIDENTIAL BUILDINGS BASED ON ONTARIO BUILDING CODE SUPPLEMENTARY STANDARD SB-10 DIVISION 4

Project:	Location of Project:
Building Permit Application No.:	Date:

Designer Information	Designer Information	Designer Information
Name	Name	Name
Discipline /Designer BCIN*	Discipline /Designer BCIN*	Discipline /Designer BCIN*
Address	Address	Address
City Province	City Province	City Province
Signature Date(YY/MM/DD)	Signature Date(YY/MM/DD)	Signature Date(YY/MM/DD)

*IF REQUIRED

Energy Efficiency Design 1.1.1.1	
The *building*:	
Is within the scope of Part 9.	☐ YES
Only contains a non-residential occupancy.	☐ YES
Uses a heating system other than electric space heating.	☐ YES
Is intended for occupancy on a continuing basis during the winter months.	☐ YES
Total gross fenestration area: _____m² Total gross area of wall: _____ m² Fenestration to wall ratio: _____ Fenestration to wall ratio is less than or equal to 40%	☐ YES
If no to any of the above, this form cannot be used. Refer to Article 1.1.2.1 of Chapter 1, Division 2 of SB-10.	

THIS CHECKLIST IS BASED ON DIVISION 4 OF THE ONTARIO BUILDING CODE SUPPLEMENTARY STANDARD SB-10.

THIS CHECKLIST IS NOT A SUBSTITUTE FOR COMPLYING WITH THE REQUIREMENTS OF THE ONTARIO BUILDING CODE. WHILE CARE HAS BEEN TAKEN TO ENSURE ACCURACY, THIS CHECKLIST IS PROVIDED FOR CONVENIENCE ONLY. DESIGNERS AND BUILDING OFFICIALS MUST REFER TO THE ACTUAL WORDING AND REQUIREMENTS OF THE ONTARIO BUILDING CODE (O.REG. 332/12 AND AMENDMENTS UP TO DECEMBER 23, 2013).

THIS CHECKLIST IS MADE AVAILABLE FOR CODE USERS BY THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING. USERS SHOULD ALWAYS CONSULT WITH THE AUTHORITY HAVING JURISDICTION, IF THE CHECKLIST IS GOING TO BE SUBMITTED TO THAT AUTHORITY. THE MINISTRY OF MUNICIPAL AFFAIRS AND HOUSING DOES NOT ASSUME RESPONSIBILITY FOR ERRORS OR OVERSIGHTS RESULTING FROM THE INFORMATION CONTAINED HEREIN.

PLEASE FILL IN THE ACTUAL VALUES INSTALLED AND CHECK BOXES AS THEY APPLY.

THERMAL PERFORMANCE OF THE BUILDING ENVELOPE SB-10 DIVISION 4, Article 1.1.1.2

Building Zone: Zone 1 - Less than 5000 Degree Days ☐
Zone 2 - 5000 or more Degree Days ☐

Table 1.1.1.2
Building Envelope Requirements Based on Degree Day Zones (SI)

Building Assembly – Opaque Elements	Criteria				Design	
	Zone 1 Less than 5000 Degree Days		Zone 2 5000 or more Degree Days		*Insert design thermal resistance*	
	Assembly Max U-Value [1]	Insulation Min. RSI-Value	Assembly Max U-Value[1]	Insulation Min. RSI-Value	Value	RSI or U/C Value?
Roofs Without Attic Space – Insulation Above Deck	U-0.181	5.28ci	U-0.158	6.16ci		☐RSI ☐U
Roofs With Attic Space and Other	U-0.119	8.8	U-0.096	10.56		☐ RSI ☐U
Walls Above Grade	U-0.312	2.28+1.76ci	U-0.312	2.28+1.76ci		☐RSI ☐U
Walls Below Grade	C-0.522 [2]	1.76ci	C-0.522[2]	1.76ci		☐ RSI ☐C
Exposed Floors – Lightweight Framing [3]	U-0.181	6.69[3]	U-0.181	6.69[3]		☐RSI ☐U
Exposed Floors – Mass	U-0.323	2.57ci	U-0.244	3.52ci		☐RSI ☐U
Slab on Grade Floors (perimeter + below slab) – Unheated		2.64 for 600mm		2.64 for 600mm+0.88ci		☐RSI ☐U
Slab on Grade Floors (perimeter + below slab) – Heated		2.64 for 900mm+0.88ci		3.52 for 900mm+0.88ci		☐RSI ☐U
Fenestration	**Assembly Max U-Value [1]**	**Assembly Max SHGC**	**Assembly Max U-Value[1]**	**Assembly Max SHGC**	**Design U Value**	**Design SHGC**
Vertical Fenestration – Windows	U-1.987	0.40	U-1.703	0.45		
Skylight with curb	U-3.917	0.49	U-3.917	0.50		
Skylight without curb	U-2.555	0.46	U-2.555	0.46		
Note that all opaque surfaces must comply with either the minimum RSI value of added insulation in cavities and continuous insulation (ci) requirements or the maximum overall thermal transmittance (U-value) of the entire assembly, where the U-value is provided. *If U-values are being used for compliance, calculations for determining these values have been attached.*						☐YES ☐N/A
Except swinging glass door, RSI value of doors ≥ RSI 0.7.						☐YES

NOTES
(1) OVERALL THERMAL TRANSMITTANCE VALUE OF THE ENTIRE ASSEMBLY INCLUDES AIR FILMS AND THERMAL BRIDGING.
(2) C-VALUE IS OVERALL THERMAL CONDUCTANCE OF THE ASSEMBLY BUT IT DOES NOT INCLUDE SOIL OR AIR FILMS.
(3) WHERE THE FLOOR FRAMING DEPTH IS 254MM OR LESS, THE INSULATION IS PERMITTED TO MEET A MIN. RSI-VALUE OF 5.28.

AIR INFILTRATION, Article 1.1.1.3

Building component or assembly contains an air barrier system conforming to Part 5 or Section 9.25 of the Building Code.	☐YES

HEATING, VENTILATING AND AIR CONDITIONING, Article 1.1.1.4		
Each HVAC system serves as a single HVAC zone.		☐YES
Energy efficiency of the HVAC equipment complies with Supplementary Standard SB-10 Clause 1.1.2.1.(1)(c) of Chapter 1 of Division 2.		☐YES
Cooling capacity of a single A/C unit ≥ 40 kW.	☐YES	☐ NO
If the cooling capacity of single A/C unit <40 kW the following is N/A. If the cooling capacity of single A/C unit ≥40 kW, the unit: ➢ Has an economizer. ➢ Is controlled by high limit shut off. ➢ Is equipped with barometric or powered relief. ➢ Has outdoor air dampers provided with blade and jamb seals.		☐YES
HRV provided where outdoor air is more than 1400 L/s and 70% of supply air system.	☐YES	☐N/A
Where a HRV is used, the system has provisions to bypass or control the HRV to permit proper operation of the air economizer.	☐YES	☐N/A
HVAC system controlled by:	☐manual changeover thermostat	☐dual set point thermostat
HVAC system with greater capacity than 4.4 kW and a supply fan motor more than 0.5 kW provided with time check and programmable thermostat.	☐YES	☐N/A
HVAC system greater than 5000 L/s provided with optimum start controls.	☐YES	☐N/A
DUCTS, PLENUMS AND PIPING, Article 1.1.1.5		
Duct or plenum not protected by an insulated exterior wall or exposed to an unheated space is sealed in accordance with SMACNA and insulated to RSI 1.4.	☐YES	☐N/A
Supply, exhaust duct or plenum in conditioned space sealed in accordance with SMACNA.	☐YES	☐N/A

Table 1.1.1.5.
Minimum Thickness of Pipe Insulation

Use of Pipe	Nominal Pipe Size not more than 40 mm	Nominal Pipe size more than 40mm
Steam	40	65
Hot water heating	40	50
Domestic hot water	25	50
Cooling	12	25

Pipes used for steam, hot water heating or cooling comply with Table 1.1.1.5.	☐YES	☐N/A
Insulation exposed to weather is protected by a covering.	☐YES	☐N/A
Non continuous exhaust systems with capacity of more than 140 L/s equipped with gravity or motorized damper.	☐YES	☐N/A
Air duct distribution system is balanced. Fans exceeding 0.75kW are balanced for design airflow.	☐YES	☐N/A
Hydronic system is balanced.	☐YES	☐N/A
SERVICE WATER HEATING, Article 1.1.1.6		
Energy efficiency of water heating equipment complies with Supplementary Standard SB-10 Clause 1.1.2.1.(1)(c) of Chapter 1 of Division 2.		☐YES
Domestic hot water piping is insulated in accordance with Table 1.1.1.5. if it is:		
Recirculating piping.	☐YES	☐N/A
First 2.5 m of a non-recirculating system (constant temperature storage system).	☐YES	☐N/A
Piping between inlet pipe and heat trap.	☐YES	☐N/A
Heat traced.	☐YES	☐N/A
Hot water storage tank is provided with temperature control.	☐YES	☐N/A
Where a recirculating hot water system or heat trace is used, control to switch off system is provided.	☐YES	☐N/A
Hot water discharge temperature limited to maximum 43°C for lavatory faucets in public washrooms.		☐YES
Vertical pipe risers that serve a storage water heater or hot water tank are equipped with heat traps.		☐YES

Where a system has been designed that provides both space heating and domestic water heating, the system efficiencies meet those required by SB-10 Clause 1.1.2.1.(1)(c) of Chapter 1 of Division 2.	☐YES	☐N/A
LIGHTING, Article 1.1.1.7		
Except as permitted by SB-10 1.1.1.7.(4), luminaries designed for use with one or three linear fluorescent lamps greater than 30W each use two-lamp tandem-wired ballasts in place of single-lamp ballasts when two or more luminaries are in the same space on the same control device.		☐YES ☐N/A
INTERIOR LIGHTING, Article 1.1.1.8		
Allowable Interior Lighting Power Density (From Table 1.1.1.8. SB-10):		W/m²
Gross lighted area of building:		m²
Interior Lighting Power Allowance (Allowable lighting power density x gross lighted area of building) (ILPA):		W
Interior Connected Lighting Power (CLPi):		W
CLPi < ILPA		☐YES
Calculations attached.		☐YES
INTERIOR LIGHTING CONTROLS, Article 1.1.1.9		
If building exceeds 500 m² the interior lighting is controlled by automatic control device to shut off building lighting in all spaces (except for emergency lighting, 24 hour lighting, or safety/security lighting).		☐YES ☐N/A
The control device operates on a programmable schedule for each floor *or* occupant sensor *or* signal from another control/alarm system.		☐YES
Each room has at least one accessible control independent of general light control.		☐YES
Individual control device is capable of being activated manually or automatically, controls a floor area of 240 m² maximum, and is capable of overriding for not more than 4 hours.		☐YES
Conference rooms, meeting rooms, lunch rooms are equipped with automatic control devices that turn off lights within 30 minutes of occupants leaving.		☐YES
Separate controls provided for task lighting.		☐YES
EXTERIOR LIGHTING, Article 1.1.1.10		
Exterior Lighting Power Allowance (ELPA):		kW
Exterior Connected Lighting Power (CLPe):		kW
CLPe < ELPA		☐YES
Calculations attached.		☐YES
Exterior building grounds luminaires exceeding 100W contain lamps with a minimum efficacy of 60lm/W unless controlled by a motion sensor.		☐YES
EXTERIOR LIGHTING CONTROLS, Article 1.1.1.11		
Except as permitted, lighting for exterior has automatic controls.		☐YES
Time switch or photosensor control is provided for dusk to dawn lighting.		☐YES ☐N/A
Time switch is provided for lighting not designated for dusk to dawn operation.		☐YES ☐N/A
ELECTRIC MOTORS, Article 1.1.1.12		
Electric motor efficiency levels comply with the requirements of Chapter 2, Division 2 of SB-10.		☐YES