Meridan Inspections Ltd

BUILDING PERMIT& DEVELOPMENT PERMIT APPLICATION
NBC SECTION 9.36.
ENERGY EFFICIENCY COMPLIANCE FORM

This form clarifies the design direction chosen for *new buildings, additions*, and *major alterations* to comply with NBC Section 9.36.

All calculations are required to be completed by a *competent person (or design professional if NECB used for design)* and attached to this form to be accepted for review.

Project Information	
Project Address	BPA Number (Office use only)
Occupancy Class: _____ Floor Area (m^2): _____ Climate Zone: **7B**	
Design Option: (select one) ☐ Prescriptive (See Section A) ☐ Trade-Off (See Section B) ☐ Performance (See Section C)	

Section A: Prescriptive

HRV / ERV: Yes ☐ No ☐

Conversions:	
R = 5.678 x RSI	**U = 1 / RSI**

Effective Thermal Resistance of Above Ground Opaque Building Assemblies (RSI)				
Assembly	**w/ HRV**	**w/o HRV**	**Proposed**	**Office Use**
Ceilings below attics	10.43	10.43		
Cathedral / Flat roofs	5.02	5.02		
Walls & Rim joists	3.08	3.85		
Floors over unheated spaces	5.02			
Floors over garage	4.86			
Thermal Characteristics of Fenestration, Doors and Skylights (U)				
Assembly	**Efficiency**		**Proposed**	**Office Use**
Windows & Doors	Maximum U-Value = 1.40 or Minimum Energy Rating ≥ 29			
One door exception	Maximum U-Value = 2.60			
Attic hatch	Maximum U-Value = 2.60			
Skylights	Maximum U-Value = 2.40			
Effective Thermal Resistance of Below-Grade or In-Contact-With-Ground Opaque Buildings Assemblies (RSI)				
Assembly	**w/ HRV**	**w/o HRV**	**Proposed**	**Office Use**
Foundation Walls	2.98	3.46		
Slab On Grade With Integral Footing	2.84	2.84		
Unheated floors: (does not apply to crawl spaces)				
Below Frost Line	uninsulated	uninsulated		
Above Frost Line	1.96	1.96		
Heated Floors	2.84	2.84		

Calculations of RSI_{eff} for the above assemblies are required to be submitted.

HVAC Equipment Performance Requirements					
Equipment	**Capacity KW**	**Standard**	**Min. Efficiency**	**Proposed**	
Gas Fired Furnace w or w/o A/C	≤ 65.9	CSA P.2	AFUE ≥ 92%		
	> 65.9 & ≤ 117.23	CAN/CSA-P.8	E_t ≥ 78.5%		
Electric Boiler	≤ 88	(1)			
Gas Fired Boiler	≤ 88	CSA P.2	AFUE ≥ 90%		
	> 88 & ≤ 117.23	AHRI BTS	E_t ≥ 83%		
Other					
Heat Loss / Gain Calculations	☐ Calculations were prepared in conformance with CSA F280-12			BTU: _____	
Nomenclature	**AFUE**= annual fuel utilization efficiency, **E_t** = thermal efficiency				

Water Heaters Performance Requirements					
Equipment	**Capacity KW**	**Standard**	**Min. Efficiency**	**Proposed**	
Tank Storage Electric	≤ 12 kW (50 L to 270 L capacity)	CAN/CSA-C191	SL ≤ 35 + 0.20V (top inlet)		
			SL ≤ 40 + 0.20V (bottom inlet)		
	≤ 12 kW (> 270 L and ≤ 454 L capacity)		SL ≤ (0.472V) - 38.5 (top inlet)		
			SL ≤ (0.472V) - 33.5 (bottom inlet)		
	> 12 kW (> 75 L capacity)	ANSI Z21.10.3/CSA 4.3 & DOE 10 CFR, Part 431, Subpart G	S = 0.30 + 27 / V_m		
Tank Storage Gas Fired	< 22 kW	CAN/CSA-P.3	EF ≥ 0.67 — 0.0005V		
	≥ 22 kW	ANSI Z21.10.3/CSA 4.3	E_t ≥ 80% and standby loss≤rated Input/(800 + 16.57)(√V)		
Tankless Gas Fired	≤ 73.2 kW	CAN/CSA-P.7	EF ≥ 0.8		
	> 73.2 kW	ANSI Z21.10.3/CSA 4.3 and DOE 10 CFR, Part 43l, Subpart G	E_t ≥ 80%		
Tankless Electric	No standard addresses the performance efficiency; however, their efficiency typically approaches 100%				
Other					
Nomenclature	**EF** = energy factor in %/h, **E_t** = thermal efficiency **S** = standby loss in %h, **SL** = standby loss in W, **V**= volume **V_m** = measured storage volume in US gallons				

(1) Must be equipped with automatic water temperature control. No standard addresses the performance efficiency; however, their efficiency typically approaches 100%.