Energy Efficiency Compliance Form

Section 9.36 of the National Building Code of Canada

This form is intended to clarify the design direction chosen to comply with Section 9.36 of the current National Building Code of Canada (NBC) and to ensure the minimum code requirements are met.

Project Type: _____ BPA (Office Use): _____

Address: _____

Design Option: ☐ Prescriptive - Section 'A' ☐ Trade-Off – Section 'B' ☐ Performance – 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	**with HRV**	**without HRV**	**Proposed**	**Office Use**
Ceilings Below Attic	8.67	10.43		
Cathedral / Flat Roofs	5.02	5.02		
Walls & Rim Joists	2.97	3.08		
Floors Over Unheated Spaces	5.02			
Thermal Characteristics of Fenestration, Doors, and Skylights (U)				
Assembly			**Proposed**	**Office Use**
Windows & Doors	1.60 (Min. Energy Rating ≥ 25)			
Garage Overhead Door	0.91			
One Door Exception / Attic Hatch	2.60			
Skylights	2.70			
Effective Thermal Resistance of Below Grade or In Contact with Ground Opaque Buildings Assemblies (RSI)				
Assembly	**with HRV**	**without HRV**	**Proposed**	**Office Use**
Foundation Walls	2.98	3.46		
Slab on Grade With Integral Footing	2.84	3.72		
Unheated Floors:				
Below Frost Line	uninsulated			
Above Frost Line	1.96	1.96		
Heated Floors	2.84	2.84		

HVAC Equipment Performance Requirements					
Equipment	**Capacity KW**	**Standard**	**Min. Efficiency**	**Proposal**	**Office Use**
Gas Fired Furnace w or w/o AC	≤ 65.9 > 65.9 & ≤ 117.23	CSA P.2 CAN/CSA 9.8	AFUE ≥ 92% E_t ≥ 78.5%		
Electric Boiler	≤ 88	Must be equipped with automatic water temperature control. No standard addresses the performance efficiency; however, their efficiency typically approaches 100%			
Gas Fired Boiler	< 88 > 88 & ≤ 117.23	CSA P.2 AHRI BTS	AFUE ≥ 90% E_t ≥ 83%		
Other					
Nomenclature	**AFUE** = annual fuel utilization efficiency, **E_t** = thermal efficiency				

Water Heaters Performance Requirements					
Equipment	**Capacity KW**	**Standard**	**Min. Efficiency**	**Proposed**	**Office Use**
Tank Storage Electric	≤ 12 kW (50 L to 270 L capacity)	CAN/CSA – C191	SL ≤ 35 +0.20V (top inlet)		
	≤ 12 KW (>270 L to ≤454 L capacity)		SL ≤ 40 + 0.20V (bottom inlet)		
			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 ≥ 22 kW	CAN/CSA – P.3 ANSI Z21.10.3/CSA 4.3	EF ≥ 0.67 – 0.0005V E_t ≥ 80% and standby loss ≤ rated input / (800 + 16.57)(√V)		
Tankless Gas Fired	< 73.2 kW ≥ 73.2 kW	CAN/CSA-P.7 ANSI Z21.10.3/CSA 4.3 and DOE 10CFR, Part 43I, Subpart G	EF ≥ 0.8 E ≥ 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 U.S. gallons				

Sections B or C: Trade Off or Performance

Details supporting either of these two options are required to be completed and submitted for review by a *competent person**

**Competent person is defined as a person who is familiar and fluent with building design under Section 9.36 of the NBC and acceptable to the Authority Having Jurisdiction.*