

Project Information		
Address: _____	BPA Number (Office use only) _____	
Occupancy Classification(s): _____	Floor Area(s) (m <sup>2</sup> ): _____	Climate Zone: <u>7B</u>
<p><b>Applies to the design and construction of all <i>buildings</i> and <i>additions</i> including:</b></p> <ul style="list-style-type: none"> <li>• <i>Buildings</i> of residential occupancy to which Part 9 applies</li> <li>• <i>Buildings</i> containing <i>business and personal services, mercantile or low hazard industrial</i> occupancies to which Part 9 applies to whose combined floor area does not exceed 300 m<sup>2</sup>, excluding parking garages serving residential occupancies</li> <li>• <i>Buildings</i> containing any mixture of the above two</li> <li>• <i>Additions</i> where the total gross floor area of the proposed addition(s) is more than 10m<sup>2</sup></li> </ul> <p><b>Form to be completed by a <i>competent person</i></b>  <i>Competent person</i> 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</p>		

**\*All calculations are required to be completed by a *competent person* and attached to this form.**

HRV / ERV:     Yes             No

Effective Thermal Resistance of Above-Ground Opaque Building Assemblies (RSI)			
Assembly	w/ HRV	w/o HRV	Proposed
Ceilings below attics	10.43	10.43	
Cathedral / Flat roofs	5.02	5.02	
Walls	3.08	3.85	
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
Windows & Doors	Maximum U-Value 1.40 or Minimum Energy Rating ≥ 29		
One door exception	Maximum U-Value 2.6		
Access hatches	Maximum U-Value 0.38		
Skylights	Maximum U-Value 2.40		
Effective Thermal Resistance of Building Assemblies Below-Grade or in Contact with the Ground (RSI)			
Assembly	w/ HRV	w/o HRV	Proposed
Foundation Walls	2.98	3.46	
Slab-on-Grade with an Integral Footing	2.84	3.72	
Unheated Floors Below Frost Line	uninsulated	uninsulated	
Unheated Floors Above Frost Line	1.96	1.96	
Heated Floors	2.84	2.84	

Calculations of RSI<sub>eff</sub> for the above assemblies have been submitted as required.

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 <sub>t</sub> ≥ 78.5%	
Electric Boiler	≤ 88	(1)		
Gas Fired Boiler	≤ 88	CSA P.2	AFUE ≥ 90%	
	> 88 & ≤ 117.23	AHRI BTS	E <sub>t</sub> ≥ 83%	
Other				
Heat Loss / Gain Calculations	Calculations were prepared in conformance with CSA F280-12			<input type="checkbox"/> Yes BTU:
Nomenclature	AFUE= annual fuel utilization efficiency, E <sub>t</sub> = 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 and DOE 10 CFR, Part 431, Subpart G	S = 0.30 + 27/V <sub>m</sub>	
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 <sub>t</sub> ≥ 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 431, Subpart G	E <sub>t</sub> ≥ 80%	
Other				
Nomenclature	EF = energy factor in %/h, E <sub>t</sub> = thermal efficiency S = standby loss in %h, SL = standby loss in W, V = volume, V <sub>m</sub> = 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%

Declaration	
<i>I hereby certify that the calculations submitted were prepared in full accordance with Section 9.36.</i>	
_____	
Print Name	
_____	_____
Signature	Date