

TIERED PRESCRIPTIVE COMPLIANCE

Section 9.36 of the National Building Code of Canada

This form is intended to clarify the compliance with Section 9.36, prescriptive path.

Must be completed by a competent person who is knowledgeable, experienced and trained in building design under Section 9.36 of the NBC and acceptable to the Authority Having Jurisdiction.

Address:			
Occupancy Class:		Conditioned Space Volume (m³):	
Select Performance Tier:	<input type="checkbox"/> Tier 1	<input type="checkbox"/> Tier 2	<input type="checkbox"/> Tier 3 <input type="checkbox"/> Tier 4 <input type="checkbox"/> Tier 5

Prescriptive Compliance Path (9.36.2. – 9.36.4.)

All calculations and specifications must be attached to this form to be considered complete and be accepted for review.

<u>Conversions:</u>	
R = 5.678 x RSI	U = 1 / RSI

HRV / ERV: Yes No **F280 Heat Gain/Loss Report must be Attached**

Effective Thermal Resistance of Above Ground Opaque Building Assemblies (RSI)			
Assembly	w/ HRV	w/o HRV	Proposed
Ceilings below attics	8.67	10.43	
Cathedral / Flat roofs	5.02	5.02	
Walls & Rim joists	2.97	3.08	
Floors over unheated spaces	5.02		
Floors within garage	4.86		
Thermal Characteristics of Fenestration, Doors and Skylights (U)			
Assembly	Efficiency		Proposed
Windows & Doors	Maximum U-Value 1.61 or Minimum Energy Rating \geq 25		
One door exception	Maximum U-Value 2.60		
Attic hatch	Minimum RSI _{nom} 2.60		
Skylights	Maximum U-Value 2.75		
Effective Thermal Resistance of Below-Grade or In-Contact-With-Ground Opaque Buildings Assemblies (RSI)			
Assembly	w/ HRV	w/o HRV	Proposed
Foundation Walls	2.98	3.46	
Slab On Grade With Integral Footing	2.84	3.72	
Unheated Floor Below Frost Line	uninsulated	uninsulated	
Unheated Floor Above Frost Line	1.96	1.96	
Heated Floors	2.84	2.84	

Trade Off (9.36.2.11.): Yes No

Should trade off be proposed, all calculations must be attached to this form to be considered complete and be accepted for review. The location and extent of assemblies used in the calculations shall be clearly identified on the drawings by hatch or note.

HVAC Equipment Performance Requirements				
Equipment	Capacity KW	Standard	Min. Efficiency	Proposed
Electric Heat Pump (split & single package)	≥ 19	See Tables 5.2.12.1.-A to -P of Division B of the NECB		
Gas Fired Furnace w or w/o A/C	≤ 66 using single-phase electric current	CAN/CSA-P.2	AFUE ≥ 95% and must be equipped with a high-efficiency constant torque or constant airflow fan motor	
	≤ 66, through the wall furnace		E _t ≥ 78.5% AFUE ≥ 90%	
	≤ 66 using three-phase electric current	ANSI Z21.47/CSA 2.3	AFUE ≥ 78% or E _t ≥ 80%	
	> 66 and ≤ 117.23		E _t ≥ 80%	
Electric Boiler	< 88	(1)		
Gas Fired Boiler	< 88	CAN/SCA-P.2	AFUE ≥ 90%	
	≥ 88 & < 733	ANSI/AHRI 1500 or DOE 10 CFR, Part 431, Subpart E, Appendix A	E _t ≥ 83%	
Other				
Heat Loss/Heat Gain Calculation	<input type="checkbox"/> 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 to ≤ 454 L capacity)		SL ≤ (0.472V) - 38.5 (top inlet)	
			SL ≤ (0.472V) - 33.5 (bottom inlet)	
>12 kW	ANSI Z21.10.3/CSA 4.3 or DOE 10 CFR, Part 431, Subpart G App B	SL ≤ 0.30 + (102.2 V _s)		
Tank Storage Gas Fired	≤ 22 kW and first-hour rating < 68 L	CAN/CSA-P.3	UEF ≥ 0.3456 – (0.00053 V _s)	
	≤ 22 kW and first-hour rating ≥ 68 L but < 193 L		UEF ≥ 0.5982 – (0.00050 V _s)	
	≤ 22 kW and first-hour rating ≥ 193 L but < 284 L		UEF ≥ 0.6483 – (0.00045 V _s)	
	≤ 22 kW and first-hour rating > 284 L		UEF ≥ 0.6920 – (0.00034 V _s)	
	> 22 kW but ≤ 30.5kW and V _r ≤ 454 L		UEF ≥ 0.8107 – (0.00021 V _s)	
	> 22 kW	DOE 10 CFR, Part 431, Subpart G, Appendix A	E _t ≥ 90% and SL ≤ 0.84 [(1.25 Q) + (16.57 √V _r)]	

TIERED PRESCRIPTIVE COMPLIANCE

Section 9.36 of the National Building Code of Canada

Tankless Gas Fired	< 58.56 kW, $V_r \leq 7.6$ L and max. flow rate < 6.4 L/min	CAN/CSA-P.3	$UEF \geq 0.86$	
	< 58.56 kW, $V_r \leq 7.6$ L and max. flow rate ≥ 6.4 L/min		$UEF \geq 0.87$	
	≥ 58.56 kW, $V_r \leq 37.85$ L and input rate to V_r ratio ≥ 309 W/L	DOE 10 CFR, Part 431, Subpart G, Appendix C	$E_t \geq 94\%$	
Tankless, Electric	No standard addresses the performance efficiency; however, their efficiency typically approaches 100%			
Other				
Nomenclature	EF = energy factor Q = nameplate input rate, in kW V_r = rated nominal storage volume, in L E_t = thermal efficiency with a 38.9°C (70°F) water temp difference SL = standby loss, in W V_s = measured storage volume, in L			

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

Proposed House - Building Assembly Details:				
	Framing	Insulation	Furnace Size:	
Ceiling:	" o.c.	R -	Furnace Rating:	
Exterior Wall:	2" x @ " o.c.	R -	Water Heater:	
Tall Wall:	2" x @ " o.c.	R -	HRV:	<input type="checkbox"/> Yes <input type="checkbox"/> No
Foundation Wall:	2" x @ " o.c.	R -	Air Conditioner:	
Floor Headers:		R -	Air Barrier (NBC):	
Cantilever/Bonus Rm:	2" x @ " o.c.	R -	Attic Hatch:	
Slab:	<input type="checkbox"/> None <input type="checkbox"/> Int <input type="checkbox"/> Ext / (1.2m)	thick -	Doors (U-Values):	
Cladding Type:			Windows:	
Comments:			(List all U-Values)	

Compliance via Tiered Prescriptive Results (9.36.8.)

This option applies only to buildings of residential occupancy to which Part 9 applies.

Energy Performance Measures	Minimum Energy Conservation Points (Zone 7a)
Above-Ground Walls	
Fenestration and Doors	
Below-Grade or In Contact with Ground	
Airtightness	
Ventilation Systems	
Service Water Heating Equipment	
Building Volume	
Total Energy Conservation Points Achieved:	

Where points are achieved through Table 9.36.8.8., an airtightness test is required to be conducted. Provide the **Airtightness Certificate** to office@pro-inspections.ca once complete but required prior to Occupancy inspection.