

9.36 Energy Efficiency Project Summary

Materials and Assemblies for all Compliance Paths			
Project Name:		Compliance Path	
Project Address:		Prescriptive	
Applicant:		Trade off	
Applicant Address:		Performance	

In order to confirm compliance with Section 9.36 of the ABC 2014, the checklist below is to be completed and submitted as part of any application for a Single Family. Trade off and Performance paths will also require a complete set of calculations to process. Incomplete information will delay the application processing.

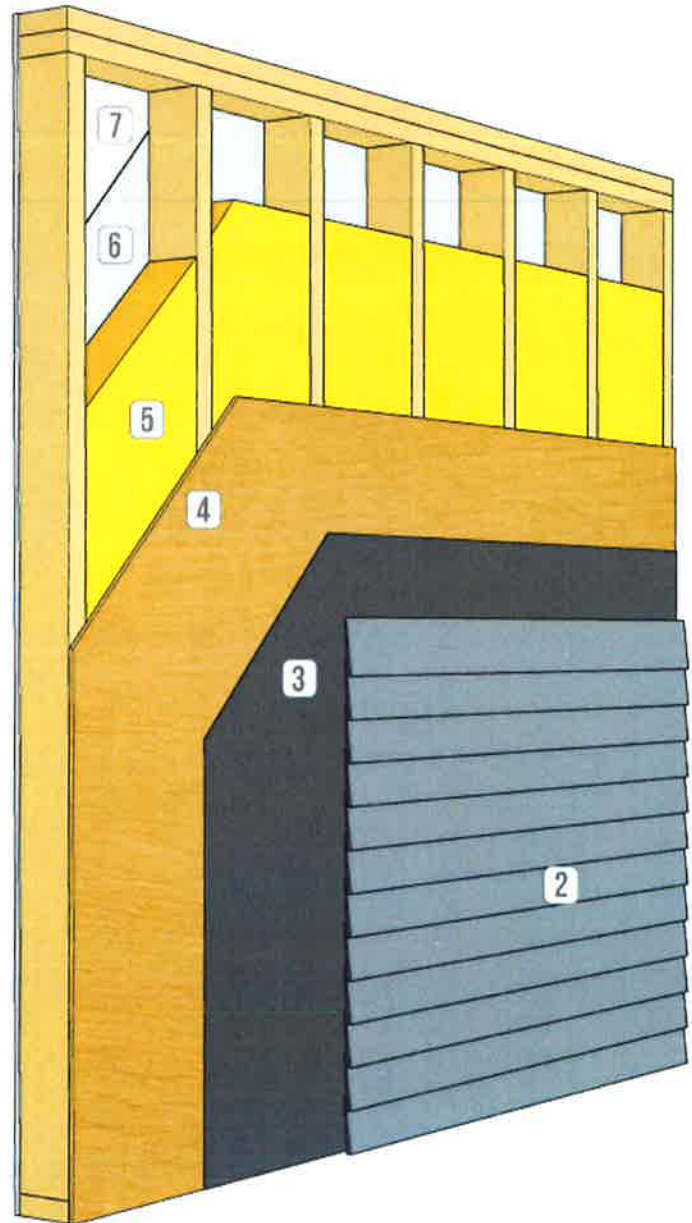
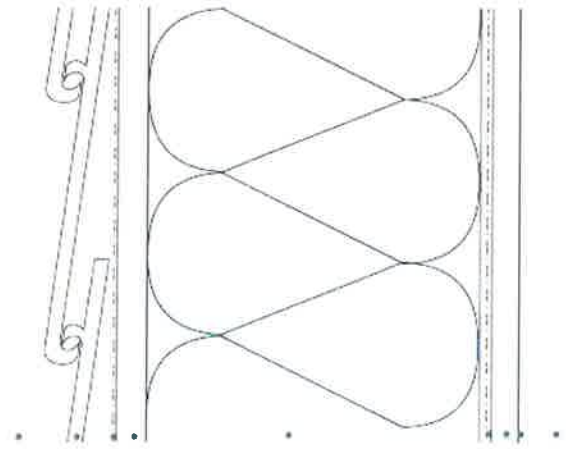
BUILDING ENVELOPE 9.36.2						Zone:
WALLS	Member size, spacing O.C.	Interior Insulation	Exterior Sheathing	Exterior Insulation	Cladding	Effective R value
Above Grade Assemblies						
Below Grade Wall						
Basement slab above Frost line						
Heated slab						
Rim-boards						
FLOORS / ROOF		Insulation Type		Insulation Depth		Effective R Value
Insulated floor above garage						
Cantilever						
Roof						
Air Barrier Type / Manufacturer		Interior - Impermeable		Exterior - Permeable		
FENESTRATIONS		Manufacturer		Energy Rating		U Value
Windows						
Doors						
OH Doors						R Value
HVAC REQUIREMENTS 9.36.3						
Heating System	Manufacturer	Model	Capacity BTU		% Efficiency	
Forced air.						
Boiler						
Cooling System						
Electric- radiant						
HRV			CFM		% @ -25C	
SERVICE WATER HEATER 9.36.4						
	Manufacturer	Model	BTU	% Efficiency		
Storage Water						
Tank-less Heater						



Climate Zones Alberta

Heating degree days

Acadia Valley	5450	Edmonton	5120	Magrath	4600	Strathmore	5180
Airdrie	5200	Edson	5750	Manning	6300	St. Albert	5350
Athabasca	6000	Elk Point	6110	Mayerthorpe	5700	St Paul	6050
Banff	5500	Embarras	7100	McLennan	5900	Suffield	4770
Barrhead	5740	Fairview	5840	Medicine Hat	4540	Sundre	5620
Bashaw	5400	Falher	5900	Milk River	4600	Swan Hills	6100
Bassano	5070	Foremost	4570	Millet	5550	Sylvan Lake	5600
Beaumont	5650	Fort Chipewayan	7170	Mornville	5500	Taber	4580
Beaver Lodge	5700	Fort Macleod	4600	Morrin	5400	Thorhild	6100
Berwyn	6100	Fort McMurray	6250	Mundare	5800	Three Hills	5520
Black Diamond	5150	Fort Saskatchewan	5420	Nanton	4950	Tofield	5700
Blackfalds	5500	Fort Vermillion	6700	Okotoks	4920	Trochu	5350
Bon Accord	5500	Fox Creek	5700	Olds	5340	Turner Valley	5220
Bonnyville	6050	Gibbions	5500	Oyen	5600	Two Hills	5800
Bow Island	4600	Gleichen	5125	Peace River	6050	Valleyview	5600
Bowden	5400	Grand Center	5850	Penhold	5550	Vauxhall	4850
Brooks	4880	Grande Cache	5670	Picture Butte	4530	Vegreville	5780
Bruderheim	5500	Grande Prairie	5790	Pincher Creek	4740	Vermillion	5740
Calgary	5000	Granum	4700	Ponoka	5500	Viking	5570
Calmar	5420	Grimshaw	6100	Provost	5700	Vulcan	4960
Campsie	5750	Habay	6750	Rainbow Lake	7200	Wagner	5850
Camrose	5500	Hanna	5300	Ranfurly	5700	Wainwright	5700
Canmore	5400	Hardisty	5640	Raymond	4600	Warner	4650
Cardston	4700	High Level	6950	Red Deer	5550	Wembley	5750
Carstairs	5300	High Prairie	5800	Redcliff	4580	Westlock	5700
Castor	5550	High River	4900	Redwater	5900	Wetaskiwin	5500
Clarsholm	4680	Hinton	5500	Rimbey	5650	Whitcourt	5650
Coaldale	4460	Innisfail	5450	Rocky Mtn House	5640		
Cochrane	5200	Irvine	4700	Ryley	5600	Winborne	5310
Cold Lake	5860	Jasper	5300	Sangudo	5600		
Coleman	5210	Keg River	6520	Sedgewick	5660		
Coronation	5640	Killam	5670	Sexsmith	5850		
Cowley	4810	Kitscoty	5900	Sherwood Park	5350		
Crossfield	5300	Lac La Biche	6100	Slave Lake	5850		
Daysland	5680	Lacombe	5500	Smoky Lake	6050		
Devon	5600	Lake Louise	6500	Spirit River	5850		
Didsbury	5340	Lamont	5500	Spruce Grove	5300		
Drayton Valley	5400	Leduc	5600	Stavely	4700		
Drumheller	5050	Lethbridge	4500	Stettler	5300		
Eckville	5650	Lloydminster	5880	Stony Plain	5300		



WALL ASSEMBLY COMPONENTS ¹		RSI	R
1	exterior air film	0.03	0.17
2	vinyl siding (no air space)	0.11	0.62
3	asphalt impregnated paper ²	0.00	0.00
4	7/16" (11.1mm) OSB sheathing	0.11	0.62
5	2x6 framing filled with R22 batt @ 24" o.c.	2.67	15.16
6	polyethylene	0.00	0.00
7	1/2" (12.7mm) gypsum board	0.08	0.45
8	finish: 1 coat latex primer and latex paint	0.00	0.00
9	interior air film	0.12	0.68
Effective RSI / R Value of Entire Assembly		3.12	17.70
Centre of Cavity RSI / R Value		4.32	24.54
Installed Insulation RSI / R Value (nominal)		3.87	22.00
Effective RSI / R Value of Assembly with Advanced Framing (advanced framing as defined by NBC9.36.2.4.(1))		3.25	18.44

Note: ¹Values are for generic insulation products. Where a specific insulation product is used in the assembly, the thermal resistance value, or long term thermal resistance value, where applicable, of that product is permitted to be used as reported by the Canadian Construction Materials Centre (CCMC) in the evaluation of such a product. ²Sheathing membrane material must comply with CAN/CGSB-51.32, "Sheathing Membrane Breather Type."

SAMPLE

LEGEND High Pass Pass Conditional Pass Conditional Fail Fail

SIMULATED DURABILITY ANALYSIS

Note: See WUFI Assumptions. Non-wood based exterior sheathing material that has a water vapour permeance less than 60 ng/(Pa·s·m²) must comply to NBC 9.25.5.2

LOCATION: Vancouver Edmonton Toronto Montreal St. John's

DURABILITY RATING BASED ON SIMULATIONS AND FIELD EXPERIENCE



17.7

R_{eff}

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Applicant:		Trade off	
Applicant Address:		Performance	✓

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BUILDING ENVELOPE 9.36.2				Zone: 7A		
WALLS	Member size, spacing O.C.	Interior Insulation	Exterior Sheathing	Exterior Insulation	Cladding	Effective R value
Above Grade Assemblies	2x6 @16" O.C.	R-20 (R-19)	3/8" OSB	n/a	vinyl siding	RSI 2.78
Below Grade Wall	2x4 & 2x2, 16"OC	R-12,1.5"EPS		n/a	n/a	RSI 1.94
Basement slab above Frost line		n/a	n/a	n/a		n/a
Heated slab		n/a	n/a	n/a	n/a	n/a
Rim-boards	11-7/8" @16"OC	R-20	1.125" rim	n/a	vinyl siding	RSI 3.59
FLOORS / ROOF	Insulation Type		Insulation Depth		Effective R Value	
Insulated floor above garage	n/a		n/a		n/a	
Cantilever	R-12 over top of R-20 (R-19) batt		9"		RSI 5.22	
Roof	R-60 blown-in cellulose		16.7" (min.)		RSI 10.43	
Air Barrier Type / Manufacturer	Interior - Impermeable			Exterior - Permeable		
FENESTRATIONS	Manufacturer			Energy Rating		U Value
Windows				n/a		=< 1.4
Doors				n/a		=< 1.4
OH Doors	n/a			n/a		R Value n/a
HVAC REQUIREMENTS 9.36.3						
Heating System	Manufacturer	Model	Capacity BTU		% Efficiency	
Forced air.	Goodman	GMSS96	80,000		0.96 AFUE	
Boiler	n/a	n/a	n/a		n/a	
Cooling System	Goodman	GSX13	18,000 btu/hr		11 EER	
Electric- radiant	n/a	n/a	n/a		n/a	
HRV	n/a	n/a	n/a	CFM	n/a	% @ -25C
SERVICE WATER HEATER 9.36.4						
	Manufacturer	Model	BTU	% Efficiency		
Storage Water	n/a	n/a	n/a	n/a		
Tank-less Heater	Navien	NPE-240	199,900	0.97 EF		