



BCBC Energy Efficiency Requirements for Part 9 Buildings

Resources

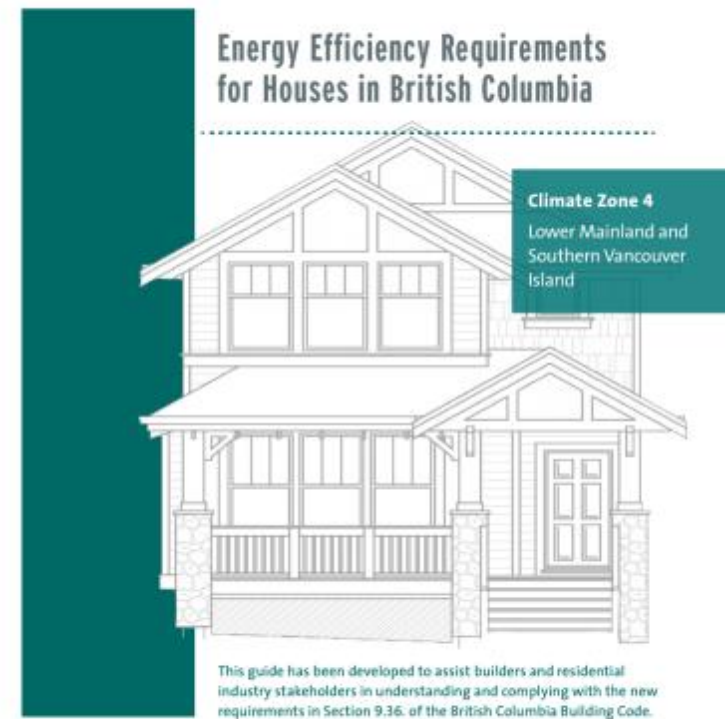


HPO Illustrated Guides

HPO: A guide for each specific climate zone in British Columbia is available for download:

- **Climate Zone 4 - Lower Mainland and Southern Vancouver Island**
- **Climate Zones 5 to 7A - North Vancouver Island and Interior**
- **Climate Zones 7B and 8 - The North**



ILLUSTRATED GUIDE






Canadian Wood Council Calculator

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CWC >> [Wall Thermal Design](#) >> 18.5 - 21.4

Effective Thermal Insulation (Reff) group:

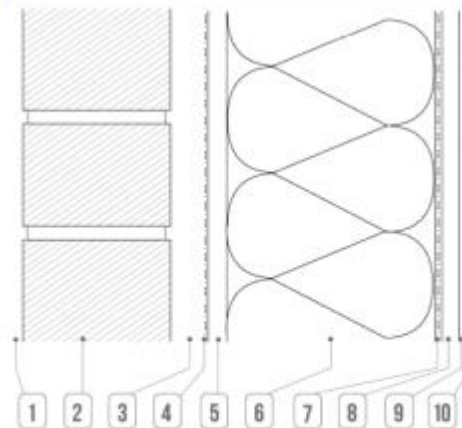
[Go to Calculator and Search Now](#) [View Codes Table](#)

15.5 - 18.4	18.5 - 21.4	21.5 - 24.4
24.5 - 27.4	27.5 - 30.4	30.5 +

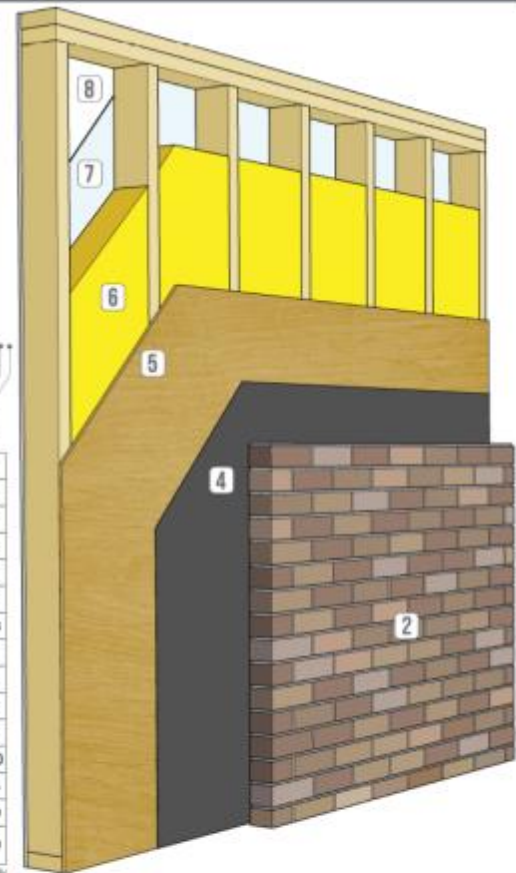
Title	Reff ↓	Nominal	Framing	Spacing	Cavity Fill	Sheathing	Cladding
F6.S24.I22.O.B	18.5	22	2X6	24 o.c.	R22 batt	7/16 OSB	Brick
F6.S24.I22.PW.B	18.5	22	2X6	24 o.c.	R22 batt	1/2 Plywood	Brick
F6.S24.I05.O.B	18.7	22.48	2X6	24 o.c.	Low Density Foam (0.5lb)	7/16 OSB	Brick
F6.S24.I05.PW.B	18.7	22.48	2X6	24 o.c.	Low Density Foam (0.5lb)	1/2 Plywood	Brick



Canadian Wood Council Calculator



WALL ASSEMBLY COMPONENTS ¹		RSI	R
1	exterior air film	0.03	0.17
2	fired clay brick 4" (102 mm) ²	0.07	0.40
3	1" (25.4 mm) air space with weep holes at base of wall	0.18	1.02
4	asphalt impregnated paper ³	0.00	0.00
5	7/16" (11.1 mm) OSB sheathing	0.11	0.62
6	2x6 framing filled with R22 batt @ 24" o.c.	2.67	15.16
7	polyethylene	0.00	0.00
8	1/2" (12.7 mm) gypsum board	0.08	0.45
9	finish: 1 coat latex primer and latex paint	0.00	0.00
10	interior air film	0.12	0.68
Effective RSI / R Value of Entire Assembly		3.26	18.50
Centre of Cavity RSI / R Value		4.46	25.34
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))		3.40	19.30



Note: Values 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, when applicable, of that product is permitted to be used as reported by the Canadian Construction Materials Centre (CCMC) in the evaluation of such product. ²The thermal resistance of mortar does not contribute. ³Swelling membrane-related must comply with CAN/CSA-S1.32, "Swelling Membrane, Dimpled Type."

LEGEND Plus Insulated with caution

SIMULATED DURABILITY ANALYSIS

LOCATION	Vancouver	Edmonton	Toronto	Montreal	St. John's
WV (WATER VAPOR MODELING)					

Note: See UFI Association's Nominal Insulated Exterior Sheathing Resists that has a water vapor permeance less than 50 ng/(hr·m²) and comply to NBC 9.36.3.2.

R_{eff} 18.5



Performance Path Compliance

- **How to verify compliance?**
 - Part 3 NECB generally mechanical engineers
 - Residential Part 9
 - Certified Energy Advisors – licensed by Natural Resources Canada (Energuide evaluations; R-2000; Built-Green; Energy Star)



Energy Efficiency Programs

- R-2000 – energy target is 50% better than applicable code requirements
- Built-Green – tiered levels
- Energy Star – energy target is 25% better than applicable code requirements
- LEED for homes – under review; approx. equivalent to Energy Star as minimum
- Passive House – energy target approximately equivalent to R-2000
- PowerSmart New Homes – energy target similar to Energy Star



TECA



FORCED AIR HEATING COMMISSIONING CHECK LIST Natural gas furnace

Site address _____	Building permit # _____
Owner _____	Heating Permit # _____
System designer _____	Q1st Forced air # _____
Designer signature _____	Gas fitter # _____
Gas fitter name _____	Gas fitter signature _____
	Gas permit # _____
Installing contractor _____	Contact name _____
Contractor signature _____	Cell phone # _____

- | | |
|---|-------------|
| 1 Gas furnace make _____ | Model _____ |
| 2 High fire input (BTU/HR) _____ | |
| 3 Gas input to furnace _____ (Measured by clocking the gas meter) | |
| 4 Measure temperature rise on high fire _____ | |
| 5 Fan speed setting _____ Fan CFM on high fire _____ | |
| 6 Measured volume of furthest supply air duct _____ | |
| 7 System balancing sheet completed _____ | |
| 8 The total duct pressure drop across the furnace _____ | |
| 9 System check list decal is applied to return air duct. Filled in and signed by contractor. | |
| 10 Furnace operating instructions are left with appliance. | |
| 11 Return air ductwork is sealed airtight within the mechanical room or sealed for at least 8' from the furnace if there is no mechanical room. | |
| Appropriately sized combustion air is provided to the mechanical room. | Size: _____ |
| 13 if there is an appliance located there that requires combustion air. Mechanical room is not under negative pressure when the furnace is running. | |
| 14 All ducts, panels and pipes secured _____ | |

Documents that are required to be left on site:	
Owners operating instructions	<input type="checkbox"/>
Teca or equivalent heat loss/heat gain worksheet	<input type="checkbox"/>
Appliance selection worksheet	<input type="checkbox"/>
Supply air duct worksheet and system sketch	<input type="checkbox"/>
Return air duct worksheet and system sketch	<input type="checkbox"/>

Teca Q1st forced air number _____
CHT forced air stamp _____

Notes: _____



Heating system declaration

Date _____

Site address _____

Building permit # _____

Heating permit # _____

Forced air system designer _____

Signature _____

Quality First f/a # _____

Installing contractor _____

Contact name _____

Signature _____

Contractor Telephone # _____

Gas fitter name _____

Gas fitter signature _____

Gas fitter license # _____

Gas permit # _____

Furnace CFM on high fire _____

Air filter size _____

The co signees of this form declare that this installation conforms to all current Municipal and Provincial codes and conforms to Sections 9.33.3.1 of the current BC building code.

7" x 10" decal



Code Compliance

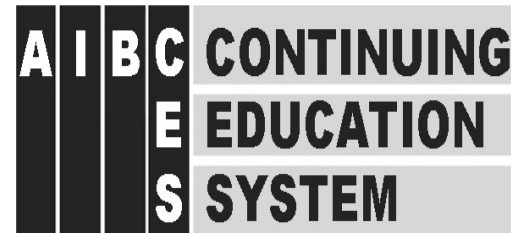
Reminder:

Please ensure that your communities' wishes regarding the enforcement of 9.36. and 9.32. are reflected in your Building Bylaw.

Thank you again to our speakers and our sponsors.



FOR GENERATIONS



Homeowner
Protection Office
Branch of BC Housing

