

Bulletin: Energy Step Code Requirements

For Part 9 Residential Buildings



Bulletin # 18-03
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This bulletin is for informational purposes only. Please be sure to consult the relevant City of Kelowna bylaw.

If any contradiction between this guide and the relevant Municipal Bylaws and/or applicable codes is found, such bylaw and/or codes shall be the legal authority.

Purpose

To inform staff, building contractors and the general public of the Energy Step Code ("Step Code") requirements found in Section 9.36.6 of the British Columbia Building Code (BCBC) pertaining to Part 9 buildings.

Background

As of December 1, 2019, Step Code is the mandatory pathway to meet the necessary energy efficiency requirements the BCBC in Kelowna. It provides a performance-based approach to support a market transformation from current energy efficiency requirements to net-zero energy ready buildings by 2032. Each of the five 'Steps' associated with the Step Code represent a progressive improvement over the base-BCBC (see Figure 1).

The requirements set out in Step 1 only need to satisfy the performance of the base BCBC. By comparison, Steps 2 to 4 represent an improvement of 10%, 20% and 40%, respectively, above the base-BCBC. The final step, Step 5, establishes the net zero energy ready target (roughly an 80% improvement in energy efficiency over the base-BCBC).



FIGURE 1: THE FIVE PERFORMANCE STEPS OF THE BC ENERGY STEP CODE (PART 9 BUILDINGS)

Effective December 1, 2019, all Part 9 residential buildings will be required to at minimum meet the performance requirements of Step 1 of the Step Code. **Starting June 1, 2021**, Step 3 will be required as the minimum.

To encourage high-performance building, the City of Kelowna offers Building Permit rebates for Part 9 residential buildings to those builders achieving the Upper Steps:

- \$500 – Step 4
- \$1,000 – Step 5

FortisBC also offers rebates at each Step for Part 9 residential buildings that range from \$500 to \$8,000. Visit betterhomesbc.ca for a summary of available new construction incentives.

How does Step Code work?

The path to net-zero energy ready buildings is set out through a series of increasingly stringent requirements for envelope efficiency, equipment efficiency, and airtightness. Step Code **involves the services of an energy advisor (EA) or energy modeler** to review plans, model energy consumption, conduct airtightness testing and to verify the plans and as-built home for compliance with the energy performance requirements of a given step.

EAs conduct performance evaluations on behalf of a Natural Resources Canada (NRCAN) licensed service organization and are licensed to deliver NRCAN's EnerGuide Rating System (ERS). Energy modelers, on the other hand, do similar work but may not be affiliated with a Service organization. All EAs are energy modelers, but not all energy modelers are EAs.

Finding an Energy Advisor or Energy Modeler for your project:

There are several ways to find an Energy Advisor or energy modeler:

- The Program-Qualified Energy Advisor Search Tool – available from Better Homes BC – allows you to search for Energy Advisors and energy modelers by Part 9 residential project type (new home or renovation) and location: <https://betterhomesbc.ca/ea/>
- NRCAN maintains an online database of Service Organizations working across Canada. You can search for Service Organizations located in BC and contact them for information about the Energy Advisors they register: <https://www.nrcan.gc.ca/energy-efficiency/energy-efficiency-homes/find-service-provider/15807>
- The Canadian Association of Consulting Energy Advisors (CASEA) also has a searchable directory of Service Organizations and Energy Advisors working in BC and elsewhere in Canada: <http://cacea.ca/find-an-energy-advisor/>

All 'Steps' within 9.36.6 require at least one blower door test at project completion. A mid-construction (pre-drywall) blower door test is recommended to facilitate the correction of air barrier deficiencies before final construction. The specific performance targets associated with each step for Part 9 buildings are outlined in Figure 2.

Step	Energy Modelling	Airtightness Requirements		Performance Requirement of Building Equipment and Systems		Performance Requirement of Building Envelope	
		Blower Door Test	ACH ₅₀	EnerGuide Rating % lower than EnerGuide Reference House	OR Mechanical Energy Use Intensity (MEUI) (kWh/m ² year)	Thermal Energy Demand Intensity (TEDI) (kWh/m ² year)	OR % better than EnerGuide Reference House
1	✓	✓		≥ 0			
2	✓	✓	≤ 3.0	≥ 10	The MEUI requirements in Table 9.36.6.3.-G of the BCBC	≤ 51	5
3	✓	✓	≤ 2.5	≥ 20		≤ 44	10
4	✓	✓	≤ 1.5	≥ 40		≤ 34	20
5	✓	✓	≤ 1.0	Must use MEUI		≤ 22	50

FIGURE 2: STEP CODE COMPLIANCE METRICS FOR PART 9 BUILDINGS IN CLIMATE ZONE 5 (EFFECTIVE DECEMBER 12, 2019)

Reporting Requirements Checklist

The following tables provide a summary of the documentation required for Step Code compliance.

AT TIME OF BUILDING PERMIT APPLICATION

<input type="checkbox"/>	Drawing(s) including a statement on the first page indicating the Step pursued*
<input type="checkbox"/>	BC Energy Compliance Report (Pre-Construction) ^{*, **}
<input type="checkbox"/>	Energy model summary for the reference house AND pre-build (aka 'as-designed') house

* Building characteristics must be consistent between the Drawings and Compliance Report.

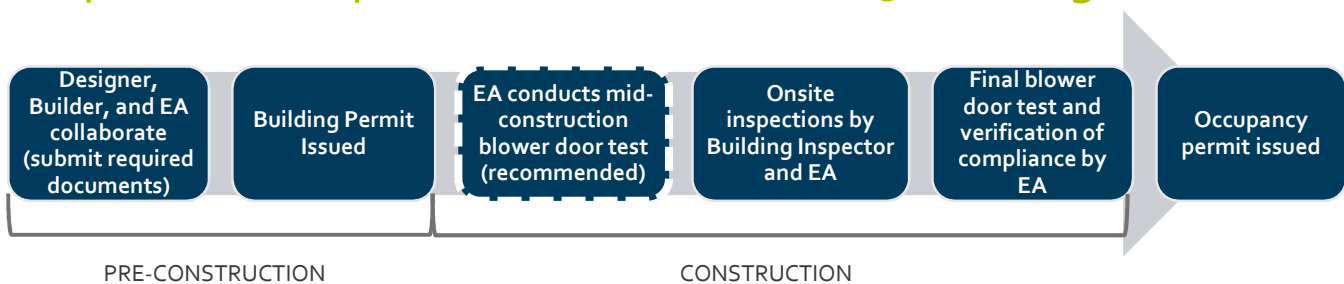
** Must include the statement "the undersigned has verified that the project complies with subsection 9.36.5/9.36.6 of Division B, as detailed in the most current version of the BC Building Code" and a signature from the Energy Advisor who completed the Compliance Report.

PRIOR TO ISSUANCE OF OCCUPANCY PERMIT

<input type="checkbox"/>	BC Energy Compliance Report (As-Built) ^{**}
<input type="checkbox"/>	Energy model summary for the reference house AND as-built house
<input type="checkbox"/>	EnerGuide Homeowner Information Sheet (if using the EnerGuide Rating System)

** Must include the statement "the undersigned has verified that the project complies with subsection 9.36.5/9.36.6 of Division B, as detailed in the most current version of the BC Building Code" and a signature from the Energy Advisor who completed the Compliance Report.

Step Code Compliance Process for Part 9 Buildings



Further details on Step Code in Kelowna can be found at kelowna.ca/energystepcode. The Provincial Step Code website can be accessed at energystepcode.ca.