



# Summary of Changes to the BC Energy Step Code

## Part 3 Buildings

### BC Building Code 2018 Revision 2

Effective December 12, 2019

Revised December 11, 2019

This is a revised version of the original bulletin to clarify certain points that have been raised with the Building and Safety Standards Branch.

Revision 2 of the BC Building Code 2018 has been approved and will take effect on December 12, 2019. Revision 2 includes three changes to the BC Energy Step Code requirements:

#### **Change 1 - Part 9 Residential Buildings**

There will now be two (BC Energy Step Code) additional options to address building envelope performance requirements (sometimes referred to as 'targets' or 'metrics'): revised TEDI requirements or a percent-better approach. Thermal Energy Demand Intensity (TEDI) requirements will remain the same, however Revision 2 will allow builders in colder parts of a climate zone to adjust their TEDI based on the Degree Days Below 18C (HDD) of their project location, rather than use a single value for the entire climate zone. Alternately, builders using the EnerGuide approach will have the option of demonstrating a percentage improvement of the annual space heating demand over the reference building. This is based on a similar approach being considered for the model National Building Code.

#### **Change 2 - Part 3 Buildings Outside Climate Zone 4**

The BC Energy Step Code has adjusted requirements for Total Energy Use Intensity (TEUI) and Thermal Energy Demand Intensity (TEDI) that better reflect colder climate conditions.

#### **Change 3 - Part 3 Buildings: Some Group A and Group B Occupancies**

Preliminary BC Energy Step Code requirements for hospitals, care centres, schools, recreation centres, libraries and colleges have been introduced, which establish a Step 1 requirement (energy modelling conforming to Part 8 of the National Energy Code for Buildings (NECB) and air leakage testing will be required) for these building types. At this time, specific energy intensity requirements are not included for these buildings.

As with previous BC Energy Step Code requirements, these are voluntary measures and are subject to adoption by participating jurisdictions. The Building and Safety Standards Branch will continue to work with the Energy Step Code Council, industry, Natural Resources Canada and others to ensure that these changes achieve the desired outcomes and are clearly communicated.

This document describes the changes to Part 3 buildings and includes one Appendix:

- Appendix A: Revised BC Building Code language for Part 3 buildings.

A separate document describes the changes to Part 9 buildings. Please visit [energystepcode.ca](http://energystepcode.ca) for more information about the BC Energy Step Code.



## Part 3 Buildings Outside Climate Zone 4: Revised Requirements

### Issue

The BC Building Code 2018 Revision 1 contains BC Energy Step Code requirements for Part 3 buildings in all climate zones for Occupancy Groups C (residential), D (business and personal services) and E (mercantile). However, the current requirements do not differentiate among the different climate zones, meaning one set of TEUI and TEDI requirements is applied across the entire province.

### Outcome

Adjusted BC Energy Step Code requirements for Part 3 buildings in climate zones outside climate zone 4.

### Impact

This change establishes BC Energy Step Code TEUI and TEDI requirements based on climate zones to better reflect colder climate conditions.

## Part 3 Buildings: Some Group A and Group B Occupancy Groups

### Issue

As part of [CleanBC](#), the Province of British Columbia has committed to improving the energy efficiency of these occupancies. Currently, the BC Building Code 2018 contains BC Energy Step Code requirements for Part 3 buildings in all climate zones; however, these requirements are limited to three Occupancy Groups (noted above) and do not include requirements for some Group A (assembly) and Group B (care and treatment) occupancies.

### Outcome

Step 1 requirements for some Group A and Group B occupancies, including hospitals, care centres, schools, recreation centres, libraries and colleges, with no specific TEUI or TEDI requirements for these building types at this time.

### Impact

Given the complexities of some Group A and Group B occupancies regarding energy usage and programming, BC Energy Step Code requirements have been introduced for Step 1 only for hospitals, care centres, schools, recreation centres, libraries and colleges. Step 1 requires energy modelling that conforms to Part 8 of the National Energy Code for Buildings (NECB) and air leakage testing for these building types. At this time, specific energy intensity requirements are not included. Further review and stakeholder engagement will be conducted to guide and inform the development of future BC Step Code requirements for higher steps for these building types.



## Appendix A: Revised BC Building Code Language

### **10.2.3. Energy Step Code**

#### **10.2.3.1. Application**

- 1) This Subsection applies to *buildings* containing any of the following *major occupancies*:
    - a) *assembly, as described in Tables 10.2.3.3.-A, 10.2.3.3.-B, 10.2.3.3.-C and 10.2.3.3.-D,*
    - b) *treatment, as described in Table 10.2.3.3.-E,*
    - c) *care, as described in Table 10.2.3.3.-F,*
    - d) *residential,*
    - e) *business and personal service, or*
    - f) *mercantile.*
- (See Sentence 1.1.3.1.(1) and Table C-2 in Appendix C.)



**Table 10.2.3.3.-A**  
**Energy Performance Requirements for Schools Other than Colleges**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000-Greater than 4999	1	Conform to Part 8 of the NECB	

**Table 10.2.3.3.-B**  
**Energy Performance Requirements for Libraries**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000-Greater than 4999	1	Conform to Part 8 of the NECB	

**Table 10.2.3.3.-C**  
**Energy Performance Requirements for Colleges**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000-Greater than 4999	1	Conform to Part 8 of the NECB	

**Table 10.2.3.3.-D**  
**Energy Performance Requirements for Recreation Centres**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000-Greater than 4999	1	Conform to Part 8 of the NECB	



**Table 10.2.3.3.-E**  
**Energy Performance Requirements for Hospitals**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity. kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity. kWh/(m <sup>2</sup> ·year)
Less than 3000-Greater than 4999	1	Conform to Part 8 of the NECB	

**Table 10.2.3.3.-F**  
**Energy Performance Requirements for Care Centres**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity. kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity. kWh/(m <sup>2</sup> ·year)
Less than 3000-Greater than 4999	1	Conform to Part 8 of the NECB	

**Table 10.2.3.3.-G**  
**Energy Performance Requirements for Hotels and Motels**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity. kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity. kWh/(m <sup>2</sup> ·year)
Less than 3000	1	Conform to Part 8 of the NECB	
	2	170	30
	3	140	20
	4	120	15
3000 to 3999	1	Conform to Part 8 of the NECB	
	2	170	30
	3	145	21
	4	130	16
4000 to 4999	1	Conform to Part 8 of the NECB	
	2	170	30
	3	145	25
	4	130	18
Greater than 4999	1	Conform to Part 8 of the NECB	
	2	170	32
	3	150	28
	4	145	20



**Table 10.2.3.3.-H**  
**Energy Performance Requirements for Other Residential Occupancies**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000	1	Conform to Part 8 of the NECB	
	2	130	45
	3	120	30
	4	100	15
3000 to 3999	1	Conform to Part 8 of the NECB	
	2	130	45
	3	120	35
	4	110	22
4000 to 4999	1	Conform to Part 8 of the NECB	
	2	135	50
	3	120	40
	4	110	22
5000 to 5999	1	Conform to Part 8 of the NECB	
	2	135	55
	3	120	40
	4	110	22

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
6000 to 6999	1	Conform to Part 8 of the NECB	
	2	150	60
	3	140	50
	4	125	35
Greater than 6999	1	Conform to Part 8 of the NECB	
	2	180	90
	3	160	75
	4	140	60





**Table 10.2.3.3.-I**  
**Energy Performance Requirements for Offices**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000	1	Conform to Part 8 of the NECB	
	2	130	30
	3	100	20
3000 to 3999	1	Conform to Part 8 of the NECB	
	2	130	30
	3	100	20
4000 to 4999	1	Conform to Part 8 of the NECB	
	2	130	30
	3	100	20
Greater than 4999	1	Conform to Part 8 of the NECB	
	2	130	30
	3	110	20

**Table 10.2.3.3.-J**  
**Energy Performance Requirements for Other Business and Personal Service or Mercantile Occupancies**  
Forming part of Sentences 10.2.3.3.(1) and (2)

Degree-Days Below 18°C	Step	Equipment and Systems – Maximum Total Energy Use Intensity, kWh/(m <sup>2</sup> ·year)	Building Envelope – Maximum Thermal Energy Demand Intensity, kWh/(m <sup>2</sup> ·year)
Less than 3000	1	Conform to Part 8 of the NECB	
	2	170	30
	3	120	20
3000 to 3999	1	Conform to Part 8 of the NECB	
	2	170	30
	3	125	25
4000 to 4999	1	Conform to Part 8 of the NECB	
	2	170	45
	3	130	30
Greater than 4999	1	Conform to Part 8 of the NECB	
	2	190	55
	3	150	40



- 2) Except as permitted by Sentence (3),
- a) energy performance shall be calculated in conformance with Article 10.2.3.4., and
  - b) airtightness shall be tested in accordance with Article 10.2.3.5.

(See Note [A-10.2.3.3.\(2\)](#).)

3) *Buildings* and *major occupancies* designed and constructed to conform to Step 4 of Tables [10.2.3.3.-A to 10.2.3.3.-H](#) or to Step 3 in Tables [10.2.3.3.-I and 10.2.3.3.-J](#), and to the Passive House Planning Package, version 9 or newer, are deemed to comply with this Subsection provided the energy model according to which the *building* or the *major occupancy* of the *building* is designed and constructed is prepared by a Certified Passive House Designer, or Certified Passive House Consultant, who is approved by the Passive House Institute.

(See also Sentence 10.2.2.1.(2).)