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20%-Better Energy Efficiency & Zero Carbon Step Code British Columbia Building Code 2018 - Revision 5

The purpose of this bulletin is to provide information about the Revision 5 changes to the British Columbia Building Code 2018 (BCBC) regarding energy efficiency and the introduction of voluntary requirements for greenhouse gas reduction. This bulletin also provides information about how these changes may involve or affect local government bylaws.

20%-Better Energy Efficiency

To meet CleanBC's goal of net-zero energy ready new construction by 2032, the BCBC will gradually increase energy efficiency requirements. As of May 1, 2023, the first incremental change to the BCBC requires new construction to be 20% more energy efficient.

Performance-based Approach

Effective May 1, 2023, most new buildings will be required to comply with the energy efficiency requirements of the BC Energy Step Code. The BC Energy Step Code's performance-based energy efficiency approach requires that a building's designed performance be evaluated through whole-building energy modelling and on-site airtightness testing to validate how the building's design and construction meets performance targets for the desired 'Step' of the BC Energy Step Code.

Effective May 1, 2023, the lower Steps in Article 9.36.6.3. for Part 9 buildings and Step 1 in Article 10.2.3.3. for Part 3 buildings will be marked as 'reserved' in Division B of the BCBC and are no longer be applicable to new construction.

Local authorities will continue to have the ability to adopt Step 4 or higher of the BC Energy Step Code for Part 9 buildings, and Step 3 or higher for Part 3 buildings. However, it will no longer be necessary for local authorities to adopt by bylaw either the Step 3 standard for Part 9 buildings or the Step 2 standard for Part 3 as these standards will become universally applicable province-wide as the new minimum acceptable standard for compliance with the BCBC.

Prescriptive Approach

As of May 1, 2023, the prescriptive values for energy efficiency in the BCBC will increase, targeting an improvement of 20%. These prescriptive requirements are applicable to Part 9 buildings not within the scope of the BC Energy Step Code such as Part 9 non-residential and some mixed-use buildings. Under the prescriptive approach, buildings must meet specific requirements for insulation, windows, and other equipment. This approach focuses on individual assemblies or pieces of equipment, rather than the performance of the whole building as a system.

On a temporary basis, the Building Act General Regulation will allow local authorities to permit the prescriptive approach to be used for those Part 9 buildings that the BC Energy Step Code would otherwise apply to, for example, single-family homes. This may be necessary in rural and remote areas of the province where access to energy modelling and airtightness testing services is limited or impractical.

Where a local authority chooses to allow for compliance with the prescriptive requirements, they may not restrict builders from voluntarily complying with the performance requirements of Step 3, Step 4, or Step 5, as an acceptable alternative to the prescriptive requirements.

However, where a local authority requires compliance with Step 4 or Step 5 for Part 9 buildings, builders may not use the prescriptive requirements and must satisfy the performance requirements of the BC Energy Step Code (energy modelling and airtightness testing), with the exception of log homes.

Bylaw Required to Accept the Prescriptive Approach

Acceptance of the prescriptive approach for Part 9 buildings to which the BC Energy Step Code applies must be done by a bylaw in relation to the conservation of energy. No bylaw is required for those Part 9 buildings to which the BC Energy Step Code does not apply like Part 9 non-residential and some mixed-use commercial buildings.

Local authorities may adopt a specific bylaw to accept the prescriptive requirements in Subsections 9.36.2 to 9.36.4., Division B, of the BCBC or amend an existing bylaw such as a building bylaw. Local authorities should seek legal advice to determine how best to amend bylaws to achieve their desired policy intent, within the limitations established by relevant legislation (e.g. *Building Act*).

Unless a bylaw to accept the prescriptive approach has been adopted, the BCBC requires the performance approach to be followed for Part 9 buildings.

Log Homes

A definition of “log homes” has been added to the BCBC (See Sentence 9, Division B, Article 9.36.1.2.) to describe homes where the exterior vertical walls primarily consist of structural log members.

When the regulatory amendments to the BCBC come into effect on May 1, 2023, log homes will have the option of complying with the BC Energy Step Code but will also have several available compliance paths under the prescriptive approach. (See Sentence 7 in Article 9.36.1.3., Division B, BC Code.) Local authorities do not need to adopt a bylaw to accept the prescriptive approach for log homes and must not limit acceptance of log homes to the performance approach only.

Further information on the changes to the BCBC for energy efficiency can be found in Information Bulletin No. B23-02.

Zero Carbon Step Code

Previous iterations of the BCBC contained energy efficiency requirements without directly addressing greenhouse gas (GHG) emissions. Amendments to Division B, Parts 9 and 10 of the BCBC will add new optional technical building requirements for the reduction of GHG emissions. These requirements, commonly referred to as the Zero Carbon Step Code, come into force on May 1, 2023.

Technical requirements for GHG emissions have been added to the BCBC using a tiered approach, similar to the BC Energy Step Code. Local authorities have the discretion to determine which of the levels, if any, will apply in their jurisdiction, to further decide in which areas the level or levels will apply, and under what conditions or circumstances. Local authorities must adopt all elements of the selected level(s) and are not able to select individual elements from one or more of the levels.

The Zero Carbon Step Code has four levels of increasing stringency for Part 9 and Part 10 buildings. The first level of the Zero Carbon Step Code is called EL-1 ('Measure-Only') as it only requires measurement of a building's emissions. EL-2 is the next level and will likely require decarbonization of either space heating or domestic hot water systems. The next level is EL-3 which will require decarbonization of both space heating and domestic hot water systems. EL-4 is the fourth and final level and indicates that the operation of the is as close to zero emissions as possible.

Initially, the Zero Carbon Step Code requirements will be voluntary. The CleanBC Roadmap to 2030 commits to requiring increasingly stringent emission requirements for new buildings in 2024 and 2027. In 2030 the BCBC will require all new buildings to be zero carbon.

Further information on the Zero Carbon Step Code is available in Information Bulletin No. B23-03.

Other Authorities for the Reduction of Greenhouse Gas Emissions

It is not the intent to restrict the ability of local authorities to establish incentives and other voluntary requirements for GHG emissions in buildings or impede other relevant authorities in other legislation, particularly, the authorities for development permit areas for the reduction of greenhouse gas emissions in ss. 491(9) of the *Local Government Act*, as well as s. 53(2)(c) of the *Community Charter* and s. 298(2)(c) of the *Local Government Act* which provide local governments with the authority to regulate with respect to the reduction of GHG emissions. It is recommended that all local governments with bylaw requirements regarding GHG emissions review any technical requirements to ensure they are in keeping with these authorities.

Technical requirements in bylaws that are outside the scope of these authorities may be affected by section 5 of the Building Act. Adding technical requirements to the BCBC for GHG emissions and amending the Building Act General Regulation to limit the extent to which these matters are 'unrestricted', may mean that local building requirements no longer have the force of law. It is recommended that legal advice be sought as necessary.

Application to Existing Buildings

It can be difficult to determine what requirements in the BCBC should apply when an existing building is being altered. To address these challenges, the Province is supporting the National Research Council's development of a code that will address alterations to existing buildings. Anticipated for release in 2024, this code will help to provide guidance to owners, designers, local governments, and building officials.

The Energy and Zero Carbon Step Codes were developed for new buildings. Division A of the BCBC discusses alterations to existing buildings and options for applying the requirements of the BC Building Code to existing buildings.

Discretion and judgement must be exercised by designers and enforcement officials when applying the acceptable solutions in Division B to the alteration to an existing building as described in Division A. Each alteration to each existing building requires unique consideration. As outlined in Division A, it is up to the local governments that administer and enforce the BCBC to determine what is appropriate and practical on a case-by-case basis.

More Information

The Building Act and Building Act General Regulation are available online at [BC Laws](#).

Other Links

- Ministry website: <https://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards>
- Free online access to the [BC Building Code](#) and the [BC Fire Code](#) is available on the BC publications [website](#).

Contact the Building and Safety Standards Branch

- **General** inquiries can be sent to building.safety@gov.bc.ca

Contact the Local Authority

- Local authority contact information is available online at <http://www.civicinfo.bc.ca/directories>.

The Building and Safety Standards Branch does not enforce compliance with the BC Code. Local authorities are authorized to enforce the BC Code through the Local Government Act and Community Charter.