May 1st, 2023
BUILDING DIVISION

BULLETIN: BC Energy Code for Renovations and Additions to Part 9 Buildings (Including Single Detached Homes)

DISCLAIMER: The information bulletin is subject to future versions. Notes below indicate some, but not all, items that may be revised.

Purpose and Background:

As of May 1st, 2023 the Province of British Columbia, through the BC Building Code, now requires 20%-better energy efficiency for most new buildings. This is achieved through the BC Energy Step Code and is equivalent to Step 3 for new Part 9 buildings and Step 2 for Part 3 buildings.

For many renovations and additions to existing buildings, it may not be reasonable or practical to apply the performance levels of the BC Energy Step Code, or the prescriptive tables directly from 9.36, as the upgrades would become significant and costly to homeowners. The BC Building Code provides some guidance for the application to existing buildings under Division A, Sentence 1.1.1.2.(1). This bulletin is intended to provide guidance on how to achieve energy efficiency that aligns with the requirements in the BC Building Code, without requiring additional modelling and performance testing for renovations, alterations, and additions to existing buildings.

Building Permit Submission Requirements:

To align with the increased energy requirements in the BC Building Code, the following has been established as a guide for renovations and additions in Abbotsford. Proposed construction assemblies and details on the building permit application drawings are expected to identify how Building Code compliance is being achieved for energy efficiency.

Windows, Doors and Skylights:

- For an addition to an existing homes, aligning with Table 9.36.2.7.-D, new windows and/or doors installed in the new area shall not exceed a U-Value of 1.22;
- For an alteration or renovation to an existing part of a home, newly installed windows and doors shall not exceed a U-Value of 1.84; and
- For proposed installations of new skylight(s), the skylights shall not exceed a U-Value of 2.92.

Exterior Walls, Roofs, Foundation and Floor Assemblies:

Construction details are required to be on drawings to demonstrate the effective RSI value for altered and proposed assemblies. The following table is a guide to the expected effective RSI values for assemblies, whether it is an addition portion or renovation portion of a building. The effective RSI values are based upon the values established in 9.36. of the BC Building Code and include historical values for renovations:

Component	Renovation/Alteration of Existing Home Effective RSI Value	Addition Portion Effective RSI Value
Walls	2.78	3.08
Ceilings below attics	6.91	8.67

Component	Renovation/Alteration of Existing Home Effective RSI Value	Addition Portion Effective RSI Value
Flat roofs (no occupancy)	5.28	4.67
Cathedral ceilings & roof decks	4.67	4.67
Foundation walls	1.99	3.46
Unheated floors		
Below frost line	uninsulated	2.98
Above frost line	1.96	3.46
Heated floors	2.32	3.46

Sample Building Assembly R-Values:

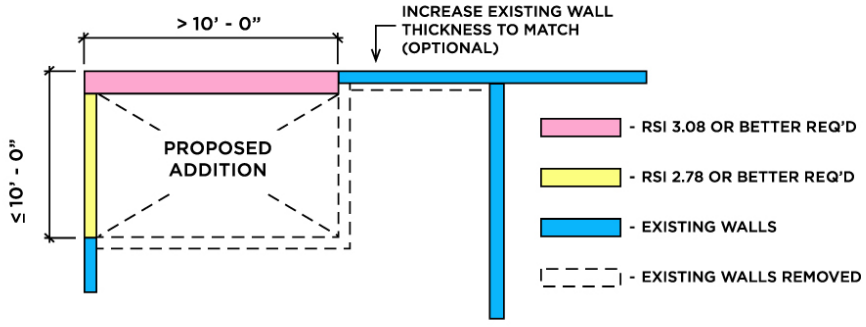
For convenience, below are a number of assemblies that would achieve the appropriate effective RSI values as outlined in the table on the previous page. The sample assemblies below are for reference only; Designers, Contractors, and Permit applicants will need to provide their project specific details to demonstrate Building Code compliance:

- Attic spaces (Required Effective R-value 8.67 or better) achievable with 12" cellulose loose-fill insulation;
- Flat roofs (Required Effective R-value 5.28 or better) achievable with R31 Batt insulation (241mm);
- Walls above grade (Required Effective R-value 3.08 or better) achievable with 2x6 studs with R24 high density batt insulation;
- Foundation walls above frostline (Required Effective R-value 3.46 or better) achievable with 4" XPS rigid insulation (interior, exterior, or in combination);
- Foundation walls below frostline (Required Effective R-value 2.98 or better) achievable with 3" XPS rigid insulation (interior, exterior, or in combination);
- Floor slabs unheated (Required Effective R-value 1.96 or better) achievable with 3" XPS rigid insulation under entire new slab;
- Floor slabs heated (Required Effective R-value 3.46 or better) achievable with 4" XPS rigid insulation under entire new slab.

Integration into Existing Assemblies:

In some cases where the continuation of an existing wall is proposed for a distance no greater than 10'-0" and will not end at an interior corner within that distance, the new wall may be constructed to the same dimensional specifications as the existing wall provided the highest insulation value available is used for the specified wall cavity.

Wall extensions in excess of 10'-0" are expected to be constructed in alignment with the values identified in this bulletin. Where an increase in the wall thickness is required for the new wall (ex. 2x4 to 2x6), the owner may also wish to consider upgrading the existing wall up to the first interior corner to avoid unwanted steps in the interior or exterior wall face. See diagram below for clarity.



Additional Information:

BC Energy Step Code:

- Receive up-to-date information by signing up for the Province's BC Energy Step Code Stakeholder Update newsletter: bit.ly/StepCodeStakeholderNewsletter.
- To learn more about the BC Energy Step Code, including performance requirements, resources for industry, and upcoming events, visit energystepcode.ca.
- If you have additional questions regarding the BC Energy Step Code, visit energystepcode.ca/contact-us/ or email building.safety@gov.bc.ca.