

2024 BC BUILDING CODE CHANGES AFFECTING HOUSING AND SMALL BUILDINGS

WOOD-FRAME CONSTRUCTION

Background

The 2024 BC Building Code came into effect on March 8, 2024, introducing many changes throughout the code, including Mass Timber construction, Radon rough-ins, adaptable dwelling units, accessibility updates, among many other changes. One significant portion of the updates that will affect our local area between the previous Building Code and the new 2024 version include a substantial change to the seismic restraint and lateral stability requirements of *Part 9 Wood-frame Construction*. These changes are being made based on more recent information available regarding seismic values from multiple detailed studies across North America and will bring the BC Provincial Building Code in line with the 2020 Canadian National Building Code.

In the 2024 BC Building Code, Section 9.23. “Wood-Frame Construction” expands on the existing code concepts of lateral restraint that were already included in the previous 2018 BC Building Code by widening the use of the concept of Braced Wall Bands, and Braced Wall Panels within buildings. See Figure 1.

Braced Wall Bands (Figure 2) are imaginary continuous bands extending vertically and horizontally around the perimeter, and sometimes through buildings. These “bands” can be up to 1.2m wide, which allow for small offsets or jogs in the walls within each band.

Braced Wall Panels (Figure 3) are dedicated portions of the wood-framed walls located within each Braced Wall Band, that are sheathed and fastened to provide required resistance to lateral forces. Total lengths and types of the required Braced Wall Panels can vary based on specific designs and locations.



Figure 1

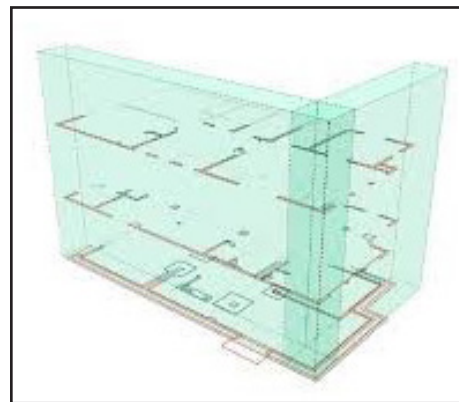


Figure 2



Figure 3

Methods To Determine Required Braced Wall Panel Lengths

The specific length of Braced Wall Panel required within each Braced Wall Band is determined in one of three separate ways;

- 1. Simplified Approach** (9.23.13.11 2024 BCBC Div B): This method may be used for simple designs that are also located in low wind and seismic zones. It uses simple tables to determine a minimum length of required Braced Wall Panels. Although this method is simple to determine, it often results in overall longer required lengths of Braced Wall Panels.
- 2. Calculation Approach** (9.23.13.4 to 9.23.13.10 2024 BCBC Div B): This method uses a detailed calculation to determine the required length of Braced Wall Panel in a Braced Wall Band based on the specific location and designs of the building. This method is certainly more complex, but can result in a more detailed and often lower length of Braced Wall Panel required.
- 3. Structural Design:** This involves having the structure designed to Part 4 of the BC Building Code instead of the prescriptive requirements of Part 9. This requires that a BC Registered Professional Engineer (P.Eng) be retained for the project who will provide stamped structural plans, and a Schedule B- "Assurance of Professional Design and Commitment for Field Review". This option has the additional costs associated with having a P.Eng retained for the project, however it does provides much greater flexibility with the building designs.

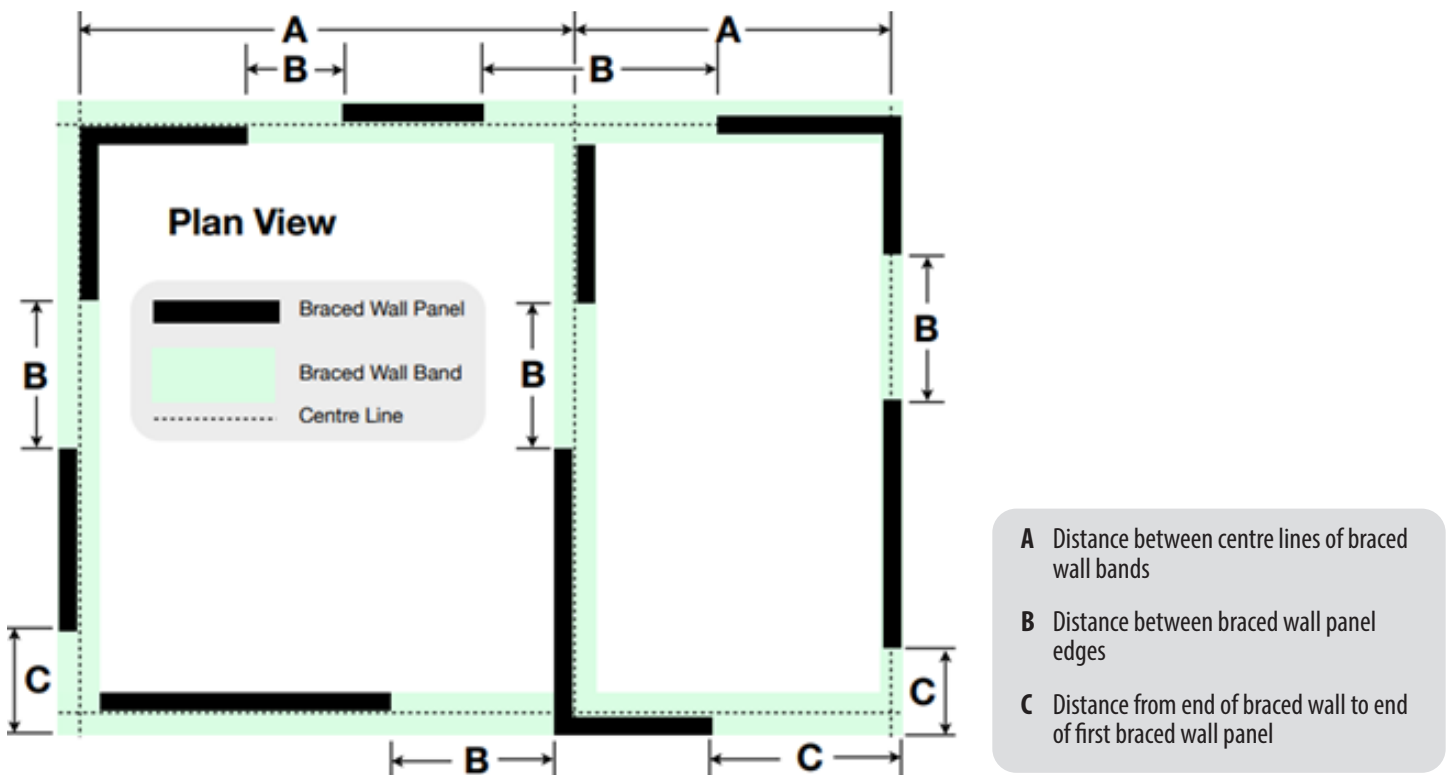


Figure 3

REFERENCE FRAMING TYPE ⁽¹⁾	MINIMUM SHEATHING ELEMENT AND MAXIMUM STUD SPACING ⁽²⁾	MINIMUM SPECIFICATIONS FOR FASTENERS		MINIMUM NUMBER OR MAXIMUM SPACING OF FASTENERS ^{(3) (4)} ALONG PANEL EDGES FASTENED TO FRAMING
		COMMON, SPIRAL OR RING THREAD NAILS	SCREWS	
WSP-A	9.5 mm plywood, OSB or waferboard for 400 mm stud spacing	2.84 mm x 51 mm ⁽⁸⁾	NP ⁽⁹⁾	150 mm o.c.
WSP-B	11 mm plywood, OSB or waferboard, blocked ⁽⁷⁾ , for 600 mm stud spacing	3.25 mm x 63 mm ⁽⁸⁾		150 mm o.c.
WSP-C	11 mm plywood, OSB or waferboard, blocked ⁽⁷⁾ , for 600 mm stud spacing	3.25 mm x 63 mm ⁽⁸⁾		100 mm o.c.
WSP-D	11 mm plywood, OSB or waferboard, blocked ⁽⁷⁾ , for 600 mm stud spacing	3.25 mm x 63 mm ⁽⁸⁾		75 mm o.c.
WSP-E	15 mm plywood, OSB or waferboard, blocked ⁽⁷⁾ , for 600 mm stud spacing	3.66 mm x 76 mm ⁽⁸⁾		75 mm o.c.

Table 1

Options for Compliance Moving Forward

With these changes in mind, Building Permit applications to the RDEK received after March 10, 2025, will be required to demonstrate compliance with the 9.23. “Wood Frame Construction” requirements, in particular the Braced Wall Bands, and Braced Wall Panels of the proposed building. Applications lacking this information may be delayed and will not be able to be issued until the required Braced Wall Panel information is provided, reviewed, and approved.

Three options available to demonstrate compliance are;

1. Ensuring that you and/or your designer are familiar with the 2024 BC Building Code requirements and the new Braced Wall Panel requirements in 9.23. and including a lateral bracing plan in your drawing package. The lateral bracing plan would include notes and hatching which would identify the following;
 - The location of Braced Wall Bands for each floor,
 - The minimum length of required Braced Wall Panel within each band,
 - The length, and construction details of each provided Braced Wall Panel. Various different types of Braced Wall Panels can be found in Table 1.
2. Hiring a Braced Wall Band Designer. This would require you to work with a third party designer familiar with the requirements of the 2024 BC Building Code, and 9.23 requirements who can work with you to review your plans, and include the lateral bracing information on a set of plans similar to option 1). As this option is still providing a prescriptive design meeting the requirements of Part 9, this third party could be a consultant, drafter, or Engineer.
3. Retaining a P.Eng to design the building to Part 4. This option requires a P.Eng to provide a set of stamped plans with a Schedule B- “Assurance of Professional Design and Commitment for Field Review”. This option does allow for more flexibility with the designs, as they are not required to meet the same prescriptive tables as options 1 & 2. The P.Eng will then conduct field reviews during the project to ensure the structural requirements of the design are being met.



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Training and additional information:

Currently, the Building Officials Association of BC (BOABC), Canadian Homebuilders Association (CHBA), BC Association of Building Designers (BCABD), and BC Housing are all working on developing courses and informational materials that should be made available in the new year to review and become familiar with these upcoming changes in greater detail. The RDEK website will be updated as these become available.

The 2024 BC Building Code in its entirety, including section “9.23.13- Bracing to Resist Lateral Loads Due to Wind and Earthquake” is available for free online to view and download at the following link;

BC Codes 2024 - Province of British Columbia

<https://www2.gov.bc.ca/gov/content/industry/construction-industry/building-codes-standards/bc-codes/2024-bc-codes>

If there are any additional questions or concerns in the meantime with these upcoming changes, please reach out to your local Building Official to discuss.

Image Sources:

[BC Housing Illustrated Guide: Seismic Bracing Requirements (2019)]

[Engineers & Geoscientists British Columbia]