Bulletin: BCBC 2024 Part 9 Braced Wall Bands

Bulletin # 25-01
Created: March 2nd, 2025

Purpose

To inform architects, engineers, developers, builders, subcontractors, designers and homeowners of the new lateral bracing requirements (lateral loads due to wind or earthquake) of the 2024 BCBC, New Wood Frame Part 9 Buildings and Additions. These changes are taking effect as of March 10th, 2025.

General Information

This bulletin is for informational purposes only. Please be sure to consult BC Plumbing Code, National Plumbing Code, and any relevant City of Kelowna Bylaws.

What is a Braced Wall Band:

- A continuous imaginary band up to 1.2 m wide surrounding the perimeter of the building and extending vertically & horizontally throughout.

What is a Braced Wall Panel:

- Portions of walls where exterior sheathing and interior finish are designed and installed to provide required resistance to lateral loads due to wind and seismic forces.
- Acceptable materials for sheathing are: OSB, plywood, diagonal plank sheathing, or gypsum board.
- Located within the Braced Wall Band & laterally supported at the top and bottom.
- Panels may be constructed of various materials permitted along a braced wall band within the same storey provided panels of WSP-A or WSP-B framing type are substituted for panels of a GWB framing type.

Types of Materials – Refer to Table 9.23.3.5.-C:

- WSP = Wood Sheathed Panel.
- GWB = Gypsum Wall Board.
- DWB = Diagonal Wood Board.
- Most common are:

i) WSP-B = 11 mm (7/16") plywood, OSB, waterboard for 600 mm (24") stud spacing.
ii) GWB-B = 12.5 mm (1/2") with 400 mm (16") stud spacing.

Design Approaches (2 methods) – Refer to Section 9.23.13.1 of the 2024 BCBC:

- Prescriptive or Part 4 approach

1. *Calculation Approach* – 9.23.13.4 to 9.13.10 or *Simplified approach* – 9.23.13.11
2. *Part 4* (Structural Engineering) or *CWC Guide.* (Canadian Wood Council)

Construction Considerations:

- *Normal-weight construction*, the average dead weight per storey shall not exceed:

i) 0.5 kPa for floors and 0.5 kPa for partitions and interior walls
ii) 0.5kPa for the roof, and
iii) 0.4 kpa for exterior walls

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- *Heavy-weight construction*, the average dead weight per storey shall not exceed"
  i) 1.5 kPa for floors and 0.5 kpa for partitions and interior walls,
  ii) 1.0 kPa for the roof, or
  iii) 1.2 kPa for exterior walls
- Minimum lengths and locations of braced wall panels per Table 9.23.13.5.
- Double top plates with top plate splice nailing requirements per Table 9.23.11.4A-B.
- Increased anchorage requirements as per Table 9.23.6.1.
- Increased nailing requirements for sheathing as per Table 9.23.3.5C.
- Increased blocking requirements as per Table 9.23.3.5C - Note 7.
- Attachment of wall top plates to diaphragm structure as per 9.23.13.5.3.

Exemptions:

- Stepped foundation cripple walls per 9.23.13.9.
  Note: Foundation cripple walls are also known as "pony walls" or "knee walls". "Cripple walls" refers to short wood-frame stud walls extending from the top of the foundation wall to the underside of the lowest floor framing.
- Small covered deck per 9.23.13.10.2.
- Detached garages and the front wall of attached garages serving a single dwelling unit are exempt provided the walls do not support a floor.
- Front walls in attached garages serving a single dwelling unit are exempt provided:
  i) The maximum spacing between the front of the garage and the back wall of the garage does not exceed 7.6m,
  ii) There is not more than one (1) floor above the garage,
  iii) Not less than 50% of the length of the back wall of the garage is constructed of wood-sheathed braced wall panels, and
  iv) Not less than 25% of the length of the side walls is constructed of wood-sheathed braces wall panels.
- Application to existing Buildings (Renovations) shall refer to Section 1.1.1.2 of the 2024 BCBC – *where a building is altered, rehabilitated, renovated or repaired, or there is a change in occupancy, the level of life safety and building performance shall not be decreased below a level that already exists.*

Design Drawings should include the following:

- Lateral Bracing Plan – A legend should be provided to indicate:
  i) The type of braced wall panel with all the design criteria.
  ii) Maximum 3.1 m in height. (measured from the bottom of the bottom plate to the top of the top plate)
    - Other portions of the wall within the braced wall band can be taller than 3.1 m as permitted in other parts of the code, but the braced wall panels themselves must not be taller than 3.1 m. For example, a wall framed under a scissor truss may have sections taller than 3.1 m.
  iii) Length, width, distance between band centerlines and distance from the end of the braced wall band to the edge of the first braced wall panel (Dimensioned).
  iv) Light or heavy construction.
  v) Design standard is BCBC Part 9 or Part 4 (Structural Engineer).
  vi) Details including calculations showing the required and provided minimum bracing length for each braced wall band.
  vii) Any exemptions, trade-offs, or additional system considerations used in the design, complete with dimensions.

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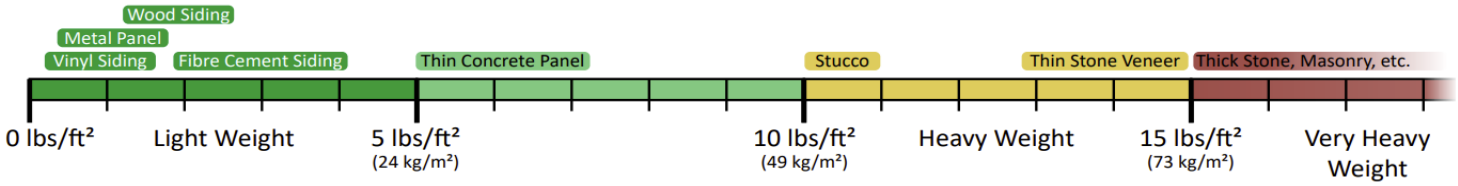
- Floor plans should include:
  i) Grid lines to help confirm braced wall band alignment on each floor level.
  ii) All braced wall bands and dimensions (Example: light shading or colour).
  iii) Centerline of all braced wall bands.
  iv) All braced wall panel dimensions (Example: darker shading or different colour).

- Cross sectional view should include:
  i) Braced wall bands are full storey in height and must be aligned with bands on the storeys below and above.
  ii) Materials used in the Braced Wall Panel as per 9.23.13.6.
  iii) Fastener size and spacing as per 9.23.3.5.
  iv) Anchorage size and spacing as per 9.23.6.1.



Design Drawings should include the following:

- A table on the Lateral Bracing Plan sheet showing calculations used for wind & seismic. This table should be used to demonstrate code compliance for each Braced Wall Panel.
  Note: this is a reference table and floor plan that should be demonstrated on design drawings. This table is subject to any recommendations and will be considered a "living document" that may be subject to change.
- Refer to example drawings and chart below.

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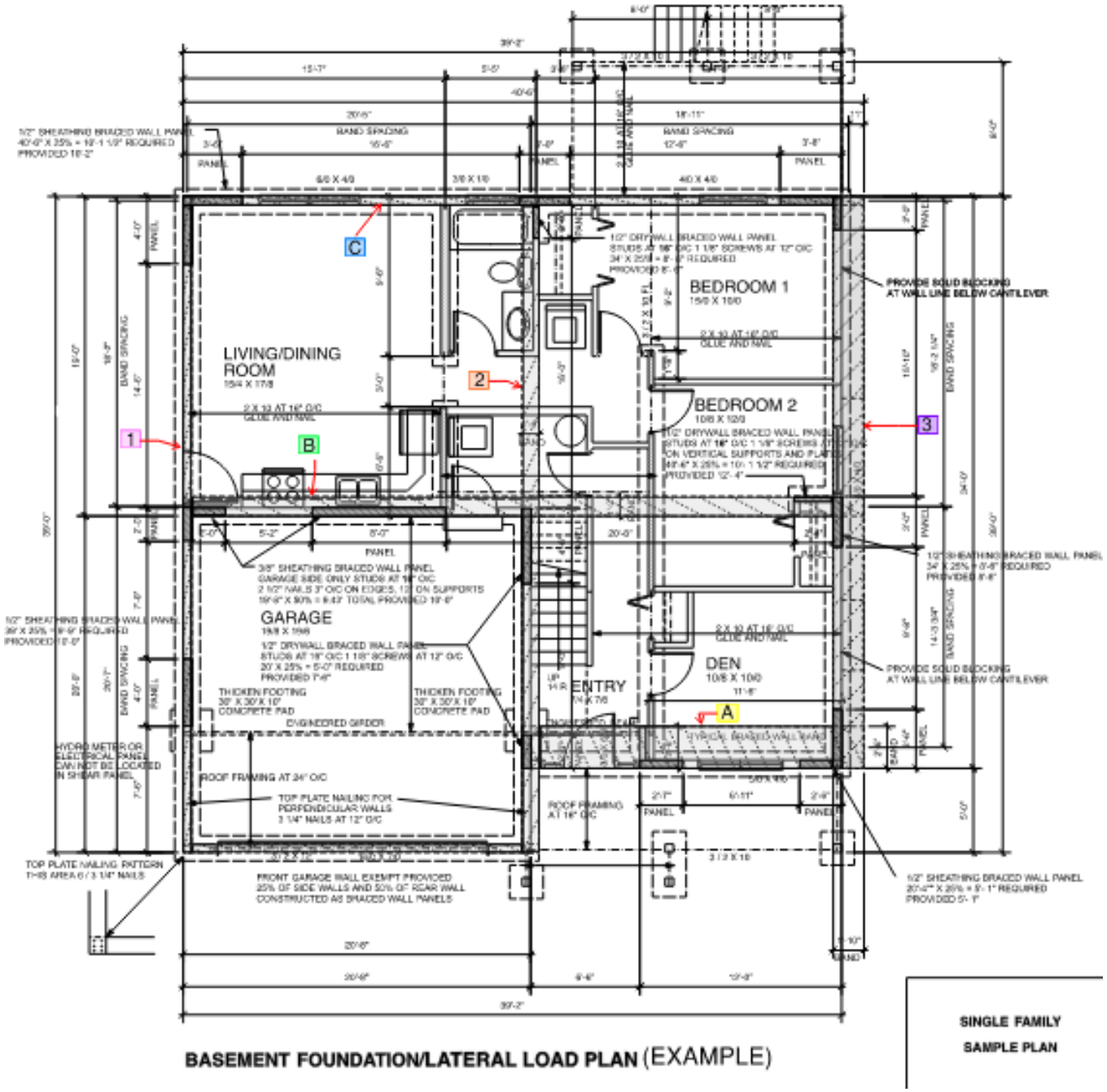
Calculation Method: WIND



BASEMENT FOUNDATION/LATERAL LOAD PLAN (EXAMPLE)

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Location: Kelowna	Fixed
HWP (1/50): 0.4 kPa	Fixed
Terrain: Rough or Open	Designer to Enter these values
Site Class: A, B, C, D, E or Unknown (Values from Table C-2, 2024	
Smax: Values from Table C-3, 2024 BCBC	
Type of Method Used: Calculation or Simplified	
Roof Snow Load: 1.8kPa (Per Kelowna Building Bylaw No. 7245)	Fixed

Braced Wall Panels for Wind	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used
Storey Supporting Roof Only	WSP-B	GWB-B	WSP-B			WSP-B	GWB-B	WSP-B		
Wall Line ID	1	2	3	4	5	A	B	C	D	E
Luw (Unadjusted Minimum Total BWP Length)										
Kexp (wind exposure adjustment factor)										
Kroof (eave-to-ridge height adjustment factor - Linear interpolation is permitted)										
Kw spacing (BWB spacing adjustment factor - Linear interpolation is permitted)										
Kw number (number of parallel BWB per orthoganal direction adjustment factor)										
Kgyp (interior gypsum board adjustment facotr)										
Ksheath (intermittent BWP adjustment factor)										
Lw ≥ BWP min	0	0	0	0	0	0	0	0	0	0

Braced Wall Panels for Wind	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used
Storey Supporting Roof + 1 Floor	WSP-B	GWB-B	WSP-B			WSP-B	GWB-B	WSP-B		
Wall Line ID	1	2	3	4	5	A	B	C	D	E
Luw (Unadjusted Minimum Total BWP Length)										
Kexp (wind exposure adjustment factor)										
Kroof (eave-to-ridge height adjustment factor - Linear interpolation is permitted)										
Kw spacing (BWB spacing adjustment factor - Linear interpolation is permitted)										
Kw number (number of parallel BWB per orthoganal direction adjustment factor)										
Kgyp (interior gypsum board adjustment facotr)										
Ksheath (intermittent BWP adjustment factor)										
Lw ≥ BWP min	0	0	0	0	0	0	0	0	0	0

Braced Wall Panels for Wind	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used
Storey Supporting Roof + 2 Floor										
Wall Line ID	1	2	3	4	5	A	B	C	D	E
Luw (Unadjusted Minimum Total BWP Length)										
Kexp (wind exposure adjustment factor)										
Kroof (eave-to-ridge height adjustment factor - Linear interpolation is permitted)										
Kw spacing (BWB spacing adjustment factor - Linear interpolation is permitted)										
Kw number (number of parallel BWB per orthoganal direction adjustment factor)										
Kgyp (interior gypsum board adjustment facotr)										
Ksheath (intermittent BWP adjustment factor)										
Lw ≥ BWP min	0	0	0	0	0	0	0	0	0	0

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City of Kelowna

Location: Kelowna	Fixed
HWP (1/50): 0.4 kPa	Fixed
Terrain: Rough or Open **Site Class:** A, B, C, D, E or Unknown (Values from Table C-2, 2024 BCBC) **Smax:** Values from Table C-3, 2024 BCBC **Type of Method Used:** Calculation or Simplified	Designer to Enter these values
Roof Snow Load: 1.8kPa (Per Kelowna Building Bylaw No. 7245)	Fixed

Braced Wall Panels for Seicmic	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used
Storey Supporting Roof Only	WSP-B	GWB-B	WSP-B			WSP-B	GWB-B	WSP-B		
Wall Line ID	1	2	3	4	5	A	B	C	D	E
Lus (Unadjusted Minimum Total Braced Wall Panel Length)										
Kweight (weight of construction and cladding adjustment factor)										
Ksnow (Roof snow load adjustment factor)										
Kspacing (BWB spacing per orthogonal direction adjustment factor)										
Ks number (number of parallel BWB adjustment factor)										
Kgyp (interior gypsum board adjustment facotr)										
Ksheath (intermittent BWP adjustment factor)										
Lw ≥ BWP min	0	0	0	0	0	0	0	0	0	0

Braced Wall Panels for Seicmic	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used
Storey Supporting Roof + 1 Floor	WSP-B	GWB-B	WSP-B			WSP-B	GWB-B	WSP-B		
Wall Line ID	1	2	3	4	5	A	B	C	D	E
Lus (Unadjusted Minimum Total Braced Wall Panel Length)										
Kweight (weight of construction and cladding adjustment factor)										
Ksnow (Roof snow load adjustment factor)										
Kspacing (BWB spacing per orthogonal direction adjustment factor)										
Ks number (number of parallel BWB adjustment factor)										
Kgyp (interior gypsum board adjustment facotr)										
Ksheath (intermittent BWP adjustment factor)										
Lw ≥ BWP min	0	0	0	0	0	0	0	0	0	0

Braced Wall Panels for Seicmic	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used	Framing Type Used
Storey Supporting Roof + 2 Floor	WSP-B	GWB-B	WSP-B			WSP-B	GWB-B	WSP-B		
Wall Line ID	1	2	3	4	5	A	B	C	D	E
Lus (Unadjusted Minimum Total Braced Wall Panel Length)										
Kweight (weight of construction and cladding adjustment factor)										
Ksnow (Roof snow load adjustment factor)										
Kspacing (BWB spacing per orthogonal direction adjustment factor)										
Kw number (number of parallel BWB per orthoganal direction adjustment factor)										
Ks number (number of parallel BWB adjustment factor)										
Ksheath (intermittent BWP adjustment factor)										
Lw ≥ BWP min	0	0	0	0	0	0	0	0	0	0