



Structural Information Bulletin

Structural Engineering: Building Permit & Inspection Requirements

Prior to the issuance of a building permit, or subsequent to a building inspection, *at the discretion of the Building Official*, a Structural engineer may be required to review building structure that exceeds the limitations of Part 9 (Housing and Small Buildings) of the British Columbia Building Code.

The following guidelines are for information only, and are minimum requirements when an engineer may be required.

Footings and Foundations

Note: RDCK Building Bylaw 10.1.6.6 requires a foundation design prepared by a registered professional in accordance with the Building Code, accompanied by letters of assurance in the form referred to in the Building Code, signed by the registered professional; *unless* the building official is satisfied the foundation will **substantially comply with the prescriptive requirements of the BC Building Code**.

Foundation design and review is **required** where:

- Required to satisfy geotechnical limitations of bearing conditions (see Geotechnical Bulletin)
- Reusing an existing foundation
- Foundations support *other than* above-grade walls of masonry, ICF or light-frame wood construction within the Scope of Part 9 of the BCBC
- A pier-type foundation supports more than one storey, or exceeds the height allowance of BCBC 9.15.2.3
- Step footings exceed 600mm (2 ft) vertically or less than 600 mm (2ft) horizontally
- Strip or pad footings support point loads of greater than 12,000 lbs (110 kN)
- Joists supported by the foundation exceed a span of 4.9m (16.1 feet)
- Foundation wall is unsupported and exceeds height limitations BCBC 9.15.4.2 (typically at window wells and basement knee walls)
- Where foundation height and backfill heights are exceeded per BCBC 9.15.4.2
- Thickened slab foundations support accessory buildings larger than 600 SF (55m²) (note: engineer is required to review requirement for slab insulation for foundations above frost depth)
- Potential for surcharging adjacent to foundation, such as from groundwater or vehicle parking adjacent to house.

Building Structure

For more information

info@rdck.bc.ca | 250.352.6665 | 1.800.268.7325 (BC) | or visit rdck.ca

Where the *primary building structure* or building design exceeds the limitations of BCBC 9.4, OR there are five (5) or more components listed below on one project, a Structural engineer may be required to provide sealed plans and a Letter of Assurance (Schedule B) for the structural design of the *entire* building.

General

- Post and Beam (such as open carports), timber, or log construction
- For renovations involving removing of bearing walls, increased point loads, or changes to existing structure
- Percent of openings on any one elevation is greater than 50%, or there is a risk of higher wind loading on any elevation (such as facing Kootenay Lake)
- Where there are minimal interior partitions in combination with large exterior openings (open-concept layout)
- A Use of metal fasteners, hangers and other structural connections not referenced in BCBC 9.23
- Use of ungraded or site-milled lumber or solid beams
- To move a building, unless the building frame complies with the deformation resistance test in CSA Z240.2.1
- Where live loading on floor system exceeds 2.4 kPa (50 psf) (such as office or storage mezzanines)

Building structure

- Engineer required for footing or foundation design as described above
- ICF Foundations or walls exceeding the basic prescriptive limitations of Part 9 BCBC
- Use of engineered floor system and/or engineered roof truss system.
- Building structure is not as described in Part 9 BCBC (such as prefabricated steel buildings, loadbearing steel studs, greenhouses, solariums, rammed-earth or other unconventional construction)
- Use of Insulated Composite Envelope (ICE) panels, Structural Insulated Panels (SIPs), Cross-laminated timber (CLT) or other structural panel systems.
- Structural members (roof trusses or beams) which exceed 12.2m (40') in span
- Wood-frame walls with stud length greater than 3.6m (12') high, or exceeding the limits of Table 9.23.10.1
- Hinge walls (portions of walls where the studs do not extend fully from floor to ceiling, excepting openings)
- Exterior walls are not braced to fully comply with BCBC 9.23.13.1 (Sheathing not provided)
- Any structural design outside that as prescribed by the Span Tables of Division B, BCBC

Beams and columns

- Freestanding columns (6"x6") exceeding 8' in height, OR supporting load of greater than 15,000 lbs (65 kN)
- Built-up wood columns in braced wall exceeding 12' in height, and supporting load of greater than 12,000 lbs
- Steel columns supporting load greater than 36kN (8000 lb)
- Beams or lintels supporting point loads.
- Supported length of floor or roof structure on door and window lintels exceeds a maximum of 4.9m (16 feet)

Decks and Roofs

- Decks exceed two stories, or one storey with roof. Maximum height of deck 3.6m (12') above grade.
- Open lean-to structures, roofs, or decks extend greater than 3.6m (12') from house.
- Deck and roof overhangs greater than 600mm (24"), or floor cantilevers not in compliance with BCBC 9.23.9.9
- Post-supported Roofs greater than 100 SF (such as over a deck or entry landing)