



**2012 BC Building Code—Seismic
Design of New One & Two Family
Part 9 Buildings**

No.: PERMITS-30
Date: 2002-02-19
Revised: 2016-03-31

Purpose:

To inform owners, registered professionals, designers and contractors of the City's requirements concerning seismic design for Wood Frame Part 9 Buildings.

Background:

- Part 9 Wood-Frame Buildings, constructed of relatively close spaced timber elements with moderate span and light loading may be designed in accordance with the prescriptive provisions of Part 9 of the BC Building Code as a minimum, as compared to the more restrictive engineered design provisions of Part 4.
- The prescription provisions under Part 9 are based largely on past performance of wood frame housing.
- Structural damage from the earthquakes in the San Francisco area (1989) and in Northridge, California (1994) were studied by Canadian researchers who concluded that:
 - a) Foundation walls weak in racking resistance, such as cripple-stud walls, led to the failure of buildings.
 - b) Large openings for doors and/or windows in the ground floor of multiple storey buildings created "soft storeys" which led to the damage of the buildings.
 - c) Most of the serious structural failures that occurred to residential construction were due to deficiencies from inadequate shear wall panels to resist lateral loads.
- In the 2006 BC Building Code, Part 9 prescriptive design requirements addressing seismic and wind loads for wood frame buildings were not available. A Registered Professional was required to review the seismic and wind aspects of the design in accordance to good practice, such as provided in the "Engineering Guide for Wood Frame Construction" or Part 4 of the BC Building Code. The 2012 BC Building Code, in effect December 20, 2012, allows wood frame Part 9 buildings to be designed to prescriptive requirements to meet seismic and wind loads.

Implementation:

- Building designers have the options to design the building to:
 - The prescriptive requirements of Part 9 (9.23.13) for wind and earthquake resistance for wood frame buildings;
 - Good engineering practice such as that provided in CWC 2009 "Engineering Guide for Wood Frame Construction"; or
 - Part 4 requirements.
- Should the building be designed to the prescriptive requirements of Part 9, the design drawings shall include the following information:
 - Locations and widths of braced wall bands, as well as dimensions showing the distance between centre lines of braced wall bands;
 - Locations of braced wall panels, material and construction type, as well as dimensions showing the distance between panel edges and distances from the end of a braced wall band to the end of the first braced wall panel.
- The Registered Professional is required to identify the option used for the design and indicate this on the design drawings.
- Should you have any questions, comments or suggestions concerning this bulletin, please contact our Code Engineer, Permits Section at 604-204-8515.