



ENGINEERS &  
GEOSCIENTISTS  
BRITISH COLUMBIA

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GUIDELINE

Design of Buildings in Seismic Regions

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DATE OF GUIDELINE

July 2011

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### GUIDELINE STATEMENT

The purpose of this guideline is to outline the satisfactory seismic design experience required by applicants for the Struct. Eng. designation.

### PURPOSE

A guideline for applicants who are seeking the specialist designation Struct.Eng.

### APPLICATION AND SCOPE

The applicant is required to provide samples where they were significantly involved in the seismic design from a minimum of three building projects completed in the previous five years located in a seismic region with an importance modified short period design spectral acceleration value of  $I_e F_a S_a(.2)$  of not less than 0.35 or equivalent. All projects shall have a SFRS with a ductility-related force reduction factor,  $R_d$ , equal to or greater than 2 or equivalent.

Each of the projects shall have a minimum building area of greater than 600 m<sup>2</sup>. If the building has a building area of less than or equal to 600 m<sup>2</sup>, the seismic design of the building must be designed entirely under the scope of Part 4 of the BCBC/NBC or equivalent.

Special consideration may be given to candidates who have experience in the seismic design of buildings only at sites with  $I_e F_a S_a(.2)$  less than 0.35 provided the candidate can demonstrate that he has acceptable knowledge in the seismic design of building structures through submission of relevant evidence.

For each of the three projects, the following information shall be included:

1. Seismic design parameters including the site class and site spectral design acceleration values. For building projects outside of Canada, a demonstration of their seismic equivalencies to the above stated seismic requirements,  $I_E F_a S_a(.2)$  of not less than 0.35 , ductility level and building area.
2. A description of the Structural configuration and foundation issues of the building project.
3. A description of the SFRS and the rationale in its adoption.
4. A description of the seismic load path of the building including the specific load path in the roof and floor diaphragms of the structure.
5. A description of the method of analysis and the rationale in its adoption.
6. A general description of the seismic issues related to the building projects including system restrictions, deflection controls and foundation provisions.
7. A set of structural floor plans and related seismic details on pdf files.

For each project, the applicant shall either be the engineer of record of the building design or be significantly involved in the seismic design of the building structures. If the applicant is not the engineer of the record of the building structural design, the sample project shall be endorsed by the engineer of record of the building design that the applicant has been significantly involved in the seismic analyses and design of the building project.