

DESIGNATED STRUCTURAL ENGINEER REQUIREMENTS

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GUIDE	Designated Structural Engineer Requirements
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FOREWORD

A Designated Structural Engineer (Struct.Eng.) is a professional engineer who may engage in Reserved Practice and is registered in the sub-category of Designated Structural Engineer, as set out in the Bylaws of Engineers and Geoscientists BC.

Professional engineers registered with Engineers and Geoscientists BC apply for registration as Designated Structural Engineers on a voluntary basis. Many professional engineers in British Columbia who offer structural engineering services are not required by legislation to be registered as Designated Structural Engineers. However, municipal and provincial legislation governing buildings may require a Designated Structural Engineer for professional design and review services associated with the issuance of a building permit for a specified structure or situation.

This document outlines the circumstances under which a Designated Structural Engineer is required, describes the requirements and application process for the Designated Structural Engineer designation, and summarizes the continuing competence requirements for Designated Structural Engineers.

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1. DESIGNATED STRUCTURAL ENGINEER

1.1 WHAT IS THE ROLE OF A STRUCTURAL ENGINEER OF RECORD?

A Structural Engineer of Record is an engineering professional with general responsibility for the structural integrity of the Primary Structural System and for general conformance of Secondary Structural Elements and Specialty Structural Elements with the Primary Structural System. The Structural Engineer of Record takes overall responsibility as the Registered Professional of Record for all items under the structural discipline on Schedule B of the Letters of Assurance in the BC Building Code (BCBC). A Structural Engineer of Record may be required to be registered as a Designated Structural Engineer.

1.2 WHO SHOULD APPLY TO BE A DESIGNATED STRUCTURAL ENGINEER?

Only those who wish to act as the Structural Engineer of Record for Part 3 Buildings, as defined by the [British Columbia Building Code](#), the [Vancouver Building By-law](#), and the [National Building Code of Canada](#), in the jurisdictions that have adopted the Struct.Eng. program within their requirements, are required to obtain the Designated Structural Engineer designation. Engineers and Geoscientists BC does not mandate the structural engineer designation for particular designs or activities and relies on the approving authorities to specify the requirements.

A Struct.Eng. is required to be the Engineer of Record to sign drawings and Letters of Assurance for each applicable building project in those jurisdictions that specify this requirement. The Struct.Eng. is required to authenticate all structural drawings and Letters of Assurance submitted for a building permit.

A Designated Structural Engineer is not required for:

- Part 9 Buildings;
- Structural components of Part 9 Buildings that are designed under Part 4;
- Structures which are outside the scope of the *British Columbia Building Code*, the *Vancouver Building By-law*, or the *National Building Code of Canada*; or
- Components that are not part of the Primary Structural System, e.g., support, anchorage and seismic restraint of electrical, plumbing and mechanical systems and architectural components, etc.

2. QUALIFICATION FOR DESIGNATED STRUCTURAL ENGINEER

In order to meet the requirements for Struct.Eng., applicants must:

1. Be registered as a professional engineer in BC.
2. Demonstrate six years of significant post-graduation structural engineering experience, including two years in responsible charge of significant engineering work (see 2.1.1 below).
3. Nominate four referees who must complete the [Designated Structural Engineer Reference Form](#) and submit it directly to Engineers and Geoscientists BC. Applicants must send the reference form to each referee, with a copy of the account of their experience. Referees are required to be registered or licensed professional engineers in Canada (P.Eng.) or the United States (PE), or chartered engineers in the United Kingdom (CEng), practicing in the field of structural engineering. Referees should have detailed knowledge of the applicant's work. At least one of the referees should not be employed in the same firm as the applicant.
4. Be in compliance with Engineers and Geoscientists BC's Continuing Education (CE) Program requirements.
5. Have completed one of the following requirements:
 - a. Have successfully completed the [IStructE Chartered Membership exam](#); or
 - b. Been registered as a Structural Engineer (SE) in California or Washington State; or
 - c. Have successfully completed the U.S. National Council of Examiners for Engineering and Surveying ([NCEES PE Structural exam](#)) (16-hour exam).
6. Successfully complete the [BC Codes and Practices Examination](#).
7. Pay all associated fees and dues.

2.1 STRUCTURAL ENGINEERING EXPERIENCE

2.1.1 ACCEPTABLE QUALIFYING EXPERIENCE

Applicants must be able to demonstrate six years of significant post-graduation structural engineering experience, including two years in responsible charge of significant engineering work. This experience may include time spent as an engineer-in-training and experience gained during post-graduate studies.

Significant engineering work:

1. Represents an application of the knowledge of structural engineering that goes beyond standard solutions found in manuals of practice;
2. Is done in an environment where the engineer has worked with at least two materials and has assumed a significant part of the overall structural engineering responsibility for the project;
3. Demonstrates responsibility for structural design of Part 3 Buildings in accordance with Part 4 of the British Columbia Building Code, the Vancouver Building By-law, or the National Building Code of Canada; and

4. Demonstrates experience with the design of a minimum of three building projects completed in the previous five years located in significant seismic regions. Refer to the [Design of Buildings in Seismic Regions Guideline](#) for more information.

2.1.2 PRESENTATION OF EXPERIENCE

Applicants are to include with their application, a summary of experience that includes the following:

1. A chronological list of employers and positions held.
2. A structural project list specifying the project name, date, and the applicant's role. The description must clearly indicate the applicant's responsibilities on each project.
3. Detailed information about a minimum of three projects for which the applicant has acted as the Structural Engineer of Record or has had a significant part in the overall structural design of the project. The information must clearly indicate the applicant's responsibilities on each project. If the applicant is not the Structural Engineer of Record, the sample project in which the applicant has been significantly involved in the seismic analyses and design of, must be endorsed by the Structural Engineer of Record.
4. A list of CE activities undertaken in the previous three years.

If it takes an applicant more than five years from when the experience was accepted, to complete the BCCP exam, the applicant will be required to submit an updated project and supporting reference.

2.2 STRUCTURAL ENGINEERING EXAMINATIONS

2.2.1 U.S. STATE BOARD STRUCTURAL ENGINEER LICENSE & EXAMINATIONS

Applicants who are not registered as a Structural Engineer (SE) in California or Washington State, may opt to fulfill the structural engineering examination requirement by completing the NCEES PE Structural exam. Applicants must successfully pass both components in order to use this exam to qualify for the Struct.Eng. designation.

2.2.2 INSTITUTION OF STRUCTURAL ENGINEERS EXAM AND CHARTERED MEMBERSHIP

2.2.2.1 Writing the IStructE Chartered Membership Exam

Applicants who opt to fulfill the structural engineering examination requirement by completing the IStructE Chartered Membership exam should contact the IStructE directly by email to oms@istructe.org, indicating that they are writing the exam to meet the requirements of Engineers and Geoscientists BC's Struct.Eng. program. Examinations and examiners' reports from prior years are available on the Structural Engineers Association of British Columbia ([SEABC website](#)).

The IStructE will inform applicants directly of their examination results. This will include information on reasons for failure, if applicable.

2.2.2.2 Qualifying for Membership with the Institution of Structural Engineers

Engineers and Geoscientists BC has entered into an agreement with the IStructE, whereby applicants wishing to qualify for Struct.Eng. by completing the IStructE Chartered Membership exam, may complete the requirements for [Chartered Membership](#) with the IStructE through Engineers and Geoscientists BC, while concurrently obtaining their Struct.Eng. designation.

Applicants wishing to apply for Chartered Membership (MStructE) must submit with their application, a completed **Form M/MRA Application for Chartered Membership through a mutual recognition agreement**, available on the [IStructE website](#). The IStructE will inform applicants of their qualification for Chartered Membership with the IStructE and for Chartered Engineer (CEng) status with the Engineering Council in the U.K.

2.2.3 BC CODES AND PRACTICES EXAMINATION

Successful completion of the BC Codes and Practices Examination (hereinafter referred to as the “examination”) is mandatory for all applicants. The examination takes approximately six hours to complete and is held once per year. It focuses on:

- Seismic requirements
- Wind forces
- BC Building Code requirements
- Current design issues
- Engineering materials (concrete, steel, masonry, wood)

Applicants who fail all or part of the examination must reapply for the examination and pay the full examination fee. If either the morning or afternoon session results in a failed grade, only that session needs to be re-written.

The examination is now a computer-based examination conducted through virtual proctoring. Upon applying, more information will be provided.

To be eligible to write the examination, Engineers and Geoscientists BC must receive all required documentation and experience must be approved by the Structural Qualifications Credentials Advisory Group prior to the exam application deadline.

2.2.4 ORDER OF EXAMINATIONS

Applicants may complete the BC Codes and Practices examination, and the IStructE Chartered Membership exam or the NCEES PE Structural exam, in any order.

3. DURATION OF THE APPLICATION PROCESS

The duration of the Designated Structural Engineer application process depends on the ability of the applicant and their references to submit the required documentation in a timely manner, and the length of time it takes the applicant to pass the required examinations.

On average, it takes up to 12 months for an applicant to go through the application process.

4. FEES

A list of current fees can be found on the Engineers and Geoscientists BC [website](#). All fees are subject to GST.

Applicants are notified when they are required to pay fees, which may be paid online by credit card.

5. CONTINUING COMPETENCE REQUIREMENTS

A Designated Structural Engineer foregoes the right to use the Struct.Eng. designation if the registrant fails to maintain active practice rights or meet conditions related to continuing competency.

- Practicing Designated Structural Engineers must accumulate the required number of CE and Continuing Active Practice Hours.
- Designated Structural Engineers who declare themselves as non-practicing will have the Struct.Eng. designation revoked and will need to reapply when they re-enter active practice.
- Designated Structural Engineers who resign their P.Eng. registration, or who fail to pay the annual fee, will have their Struct.Eng. designation revoked.

5.1 CONTINUING ACTIVE PRACTICE HOURS

An annual minimum of 750 hours of active practice in structural engineering is required to maintain the Struct.Eng. designation. Registrants are required to confirm that they have met this requirement as part of the annual reporting process due on June 30 of each year.

5.2 CONTINUING EDUCATION

A Designated Structural Engineer (Struct.Eng.) must:

- Complete a total of at least 120 CE Hours per three-year rolling period;
- Complete at least 60 CE Hours in Technical Learning directly related to their structural area of practice in every three-year rolling period. The hours directly related to structural practice must be designated as such in the registrant's CE reporting system;
- Complete the mandatory Regulatory Learning Module in each reporting year;

- Complete at least one CE Hour of Ethical Learning per reporting year;
- Upload a CE Plan in each reporting year; and
- Complete the annual reporting process by the end of each reporting year (June 30).

Registrants are required to report their CE activities and CE Hours and submit their CE Plan each reporting year using the online reporting system accessible at egbc.ca/cep-reporting.

The CE Program uses three compliance mechanisms to verify that registrants are meeting the requirements of the program:

1. Annual reporting and completion checking;
2. Compliance audits; and
3. Practice reviews.

Registrants who do not meet the CE Program requirements by the reporting year deadline of June 30 have until the late reporting and completion deadline of September 30 to correct their missed requirements, after which time their registration will be automatically suspended. Suspensions can result from not completing the annual declarations, missing annual requirements (e.g., not completing Ethical or Regulatory Learning or not submitting a CE Plan), or by failing to complete the three-year CE Hour requirements (starting in 2024). Registrants who do not meet the requirements by December 31 will have their registration automatically cancelled.

The Struct.Eng. designation may be automatically suspended or revoked if CE requirements have not been met for the three-year reporting period. Any Struct.Eng. losing their designation for non-compliance with CE requirements will be considered for reinstatement upon application (see below).

Refer to the [Continuing Education Program Overview](#) and the [Guide to the Continuing Education Program](#) for further details.

5.3 REINSTATEMENT OF THE STRUCT.ENG. DESIGNATION

In order to regain the Designated Structural Engineer designation, the registrant must apply for reinstatement and pay the associated fees. The Structural Qualifications Credentials Advisory Group will review the reasons for revocation and for requesting reinstatement, and at their discretion, will recommend approval of applications for reinstatement to the Credentials Committee. At minimum, the applicant for reinstatement is required to write and pass the BC Codes and Practices Examination and to demonstrate suitable continuing active practice and continuing education.