



Professional Engineers
and Geoscientists of BC
www.apeg.bc.ca

The Association of Professional Engineers and Geoscientists
of the Province of British Columbia
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REFERENCE FORM FOR PROFESSIONAL ENGINEER/GEOSCIENTIST

PLEASE TYPE OR PRINT LEGIBLY

Referee Name:	Applicant [Full Legal] Name:	
Referee Address:	Applicant Email:	Applicant ID Number:
	Discipline of Engineering/Geoscience that the applicant is applying for:	
	Date:	

Your name has been put forward by this applicant as a Referee to verify his or her experience for standing as a Professional Engineer or Professional Geoscientist or for the granting of a Non-Resident Licence. **This form must be accompanied by a chronological work experience summary and the Association document "Satisfactory Engineering (Geoscience) Experience", provided by the applicant.** It is important to the applicant, as well as to the Association that you complete the form and return it as soon as possible. Please answer all questions to the best of your direct knowledge only.

The Association requires that Referees be Professional Engineers or Professional Geoscientists with first hand working knowledge of the applicant's work and that the applicant must have been under suitable supervision throughout the qualifying period. As a referee, you are urged to consider your assessment carefully and to provide as much input and guidance as possible to the Association concerning the readiness of the applicant for registration. Please do not suppress any information which might influence the decision. Because granting of professional membership or licensure is based upon peer evaluation, the comments of referees are critical to the process. If, for any reason, you feel that you cannot provide an assessment of this applicant, please return this form to the Association and note your reasons below in the space provided. **All statements will be treated as confidential. Thank you for taking part in this most important aspect of the registration/licensing process.** Please provide a telephone number at which you could be contacted during the day in the event that further information is required.

REFeree INFORMATION

Position		Professional Designation (P.Eng./P.Geo. etc)	
Employer		Discipline of Engineering/Geoscience	
Registration/Licence #		Jurisdiction of Registration	

Telephone Number: _____ Email: _____

If you are unable to act as a referee, please indicate the reason in the space provided:

A. YOUR PERSONAL KNOWLEDGE OF THE APPLICANT

1. For how many years have you known the applicant:

Personally: _____ From (please provide dates) _____ to _____

Professionally: _____ From (please provide dates) _____ to _____

2. In your opinion, is the applicant's character:

- Acceptable Not acceptable (please elaborate below)

B. YOUR PROFESSIONAL KNOWLEDGE OF THE APPLICANT

(Please provide additional comments which may assist the Registration Committee in its decision.)

1. What is or was your professional relationship to the applicant?

- Supervisor Client Colleague Other (please describe)

• For how long? (Please provide dates)

2. In your opinion, are the applicant's English language skills related to the provision of engineering or geoscience services at a level sufficient to protect the interest of the public in British Columbia?

- | | | | |
|------------------|------------------------------------|---------------------------------------|---|
| Speaking | <input type="checkbox"/> Excellent | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Writing | <input type="checkbox"/> Excellent | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Listening | <input type="checkbox"/> Excellent | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |
| Reading | <input type="checkbox"/> Excellent | <input type="checkbox"/> Satisfactory | <input type="checkbox"/> Unsatisfactory |

Comments

3. In your opinion, does the applicant apply engineering/geoscience principles in a knowledgeable and accurate manner?

Yes No

4. In your opinion, does the applicant possess sound professional judgment?

Yes No

5. In your opinion, does the applicant have the ability to recognize and work within his/her limitations?

Yes No

6. In your opinion, does the applicant adhere to APEGBC's Code of Ethics? *(see attached document)*

Yes No

C. YOUR ASSESSMENT OF THE APPLICANT'S EXPERIENCE

1. The purpose of the registration process is to ascertain whether or not the applicant is ready to accept full professional responsibility for work performed and understands his/her limitations. Satisfactory experience involves the application of engineering or geoscience principles and theory, showing progression by evidence of increasing complexity and responsibility. It is requested that you review the enclosed summary of experience provided by the applicant and comment on its validity. Referring to the document "Satisfactory Engineering (Geoscience) Experience", please indicate any areas which, in your opinion, have not been adequately covered by the applicant's experience. Also, please emphasize any areas in which you judge the applicant to have gained outstanding experience. (Attach extra pages if necessary.)

You are asked to judge how much of the applicant's experience with which you are specifically familiar was:

Type of Experience	Duration (Number of years/months)	Dates	
		From (Month/Year)	To (Month/Year)
Training/Familiarization			
Engineering/Geoscience			
Non-Engineering/Geoscience			

3. In your judgment, has the applicant reached a "professional level" in his/her work? If your answer is "Yes", you are indicating that the applicant can accept full professional responsibility, and has reached the level of professional maturity needed to judge when he/she is out of his/her area of competence.

Yes No (Please elaborate below)

D. ADDITIONAL INFORMATION

1. If you have any additional information which will assist in our evaluation, please provide it below:

2. If, for any reason, you believe that registration or licensure of the applicant should be withheld at this time, please comment below:

Signature		Date	
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**Please return this form, with a copy of the applicant's work experience summary, to:
 APEGBC, 200-4010 Regent Street, Burnaby BC V5C 6N2, Canada
 or Fax to 604-430-8085**

**Forms can also be emailed to register@apeg.bc.ca
 THANK YOU FOR TAKING THE TIME TO PROVIDE THIS REFERENCE.**

SATISFACTORY ENGINEERING WORK EXPERIENCE

Work experience is an essential element in determining whether or not an individual is acceptable for professional registration/licensing. The responsibility for providing the proper environment, opportunities, range and progression of activities necessary to meet the work experience requirements rests with the employers of applicants, and the individuals who provide supervision during the internship period.

Acceptable engineering work experience must include the application of theory and should provide exposure to, or experience in the following broad areas: practical experience, management, communication, and the social implications of engineering. Assessment of the acceptability of the work experience is based on the extent to which the applicant's experience includes these areas, each of which is outlined in the following sections.

1) Application of Theory

The skilful application of theory is the hallmark of quality engineering work, and an applicant's experience shall include meaningful participation in one or more of the following:

a) analysis

for example: scope and operating conditions, feasibility assessment, safety and environmental issues, technology assessment, and economic assessment, etc.;

b) design and synthesis

for example: functionality or product specification, component selection, integration of components and subsystems into larger systems, reliability and maintenance factors, human and environmental aspects, and the societal implications of the product or process, etc;

c) testing methods

for example: devising testing methodology and techniques, functional specification verification, and new product or technology commissioning and assessment, etc.; and,

d) implementation methods

for example: technology application, engineering cost studies, optimization techniques, process flow and time studies, quality assurance implementation, cost/benefit analysis, safety and environmental issues and recommendations, and maintenance and replacement evaluation, etc.

2) Practical Experience

Practical experience allows applicants to understand the practical limitations of real systems. Practical experience should include:

- a) site visits to existing engineering works, with opportunities to see equipment and systems in both operational and maintenance circumstances;
- b) application of equipment as part of the larger system, including, for example, the merits of reliability, the role of computer software, and understanding the end product or engineering work in relationship to the equipment;
- c) opportunities to experience and understand the limitations of practical engineering and related human systems in achieving desired goals, including limitations of production methods, manufacturing tolerances, performance minima, maintenance philosophies, etc.; and,
- d) opportunities to experience the significance of time in the engineering process, including workflow, scheduling, equipment wear-out and replacement scheduling, etc.

+ Satisfactory Engineering Experience cont'd...

3) **Management of Engineering**

Management of engineering works includes the supervision of staff, project management, general exposure to an engineering business environment, and the management of technology.

Engineering management includes:

- a) planning, from conception through to implementation. This includes: needs assessment, concept development, assessment of resources required, and assessment of impacts, including societal and project implementation;
- b) scheduling, from establishing interactions and constraints, developing activity or task schedules, and allocation of resources, through to the assessment of delay impacts and beyond to broader aspects, such as interactions with other projects and the marketplace;
- c) budgeting, including the development of preliminary and detailed budgets, identifying labour, materials and overhead, risk analysis, life-cycle analysis, and tracking;
- d) supervision, including leadership, professional conduct, organization of human resources, team building, and management of technology;
- e) project control, including co-ordination of work phases, tracking and monitoring costs and progress, and implementing changes to reflect actual progress and needs; and,
- f) risk-analysis related to operating equipment and system performance, product performance evaluation, and evaluation of societal and environmental impacts.

4) **Communication Skills**

Developing and practising communication skills is an essential experience requirement. This applies to all areas of the work environment including communication with superiors, colleagues, regulators, clients, and the public.

Applicants should have regular and progressive opportunities to participate in:

- a) preparation of written work, including day-to-day correspondence, record- keeping, and report writing;
- b) making oral reports or presentations to colleagues, supervisors, senior management, and an exposure to, or participation in, reports to clients and regulators; and,
- c) making public presentations.

5) **Social Implications of Engineering**

The overriding objective of the “social implications of engineering” requirement is to provide experiences which increase awareness of an engineer's professional responsibility to guard against conditions dangerous or threatening to life, limb, property, or the environment, and to call any such conditions to the attention of those responsible.

The social implications of engineering are an important aspect of the practice of engineering. The work environment should provide opportunities for applicants to heighten their awareness of the potential consequences of engineering work. This should include:

- a) a recognition of the value and benefits of the engineering work to the public;
- b) an understanding of the safeguards required to protect the public and methods of mitigating adverse impacts;
- c) an understanding of the relationship between the engineering activity and the public;
- d) a demonstrated interest and involvement in the broader social implications of engineering;
- e) an appreciation of the role of regulatory bodies on the practice of engineering; and,
- f) an understanding of the provincial health and safety of the workplace legislation.

SATISFACTORY GEOSCIENCE WORK EXPERIENCE

The following criteria are designed to provide guidance to candidates, employers and supervisors with respect to the level of experience expected of an applicant applying for professional registration or licensure.

a) **Application of the Knowledge of Geoscience Principle and Practice**

The skilful application of geoscience knowledge is essential to earning a professional registration or licensure. To be accepted, a candidate's experience must include active and responsible participation in several aspects of geoscience:

- i. geoscience training and familiarization.
- ii. technical geoscience experience.
- iii. development of geologic concepts: preparation of reports concerning deposits of rocks, minerals or other naturally-occurring earth materials.
- iv. mapping and systematic geoscience evaluation (with specific reference to bedrock, unconsolidated earth materials and or snow, ice, groundwater, surface water and constituents thereof).
- v. identification of geologic hazards and risk to the public and the environment.

b) **Management**

Management in Geoscience includes supervision of staff, project leadership, budgeting and the socially responsible application of geoscientific principles and practices. Candidates must be able to document reasonable progression toward increasing management involvement and responsibility over time.

c) **Communication Skills**

During the training period, candidates should be required to communicate effectively with superiors, co-workers, government regulators, clients and the general public. They should become proficient in the written and oral presentation of geoscience from daily record-keeping to major reports.

d) **Social Implications of Geoscience**

The practice of geoscience has significant impact on the public in the fields of public and environmental safety, industry, finance and education. Candidates should become aware of the geoscientist's role in society and the social impact of projects in which they are involved. They should understand the role of the geoscientist from these points of view including environmental, economic and the advancement of knowledge. The objective is to foster an awareness of the geoscientist's professional responsibility to guard against conditions which threaten life, property or the environment and to call such conditions to the attention of those responsible.

e) **Sponsorship**

Referees provide confirmation of the candidate's experience. References are required from practicing professional geoscientists familiar with details of the candidate's work during the internship. Present and past direct supervisors are the most suitable referees. If a candidate claims experience from several positions, extra references may be required.

All candidates are required to nominate four or more Canadian and/or US referees. All should be professional geoscientists with first-hand knowledge of the candidate's work. At least two of the referees should have directly supervised the candidate and at least one professional geoscientist familiar with the candidate's work from outside his or her company should be nominated if possible. If experience outside Canada/United States must be verified, additional referees are required. A separate letter is required to explain if the candidate cannot nominate the required referees. Professional geoscientists with indirect knowledge of the candidate's work may be nominated if absolutely necessary. Please refer to the reference forms for more information.

APEGBC Code of Ethics

The purpose of the Code of Ethics is to give general statements of the principles of ethical conduct in order that Professional Engineers and Professional Geoscientists may fulfill their duty to the public, to the profession and their fellow members.

Professional Engineers and Professional Geoscientists shall act at all times with fairness, courtesy and good faith to their associates, employers, employees and clients, and with fidelity to the public needs. They shall uphold the values of truth, honesty and trustworthiness and safeguard human life and welfare and the environment. In keeping with these basic tenets, Professional Engineers and Professional Geoscientists shall:

- (1) hold paramount the safety, health and welfare of the public, the protection of the environment and promote health and safety within the workplace;
- (2) undertake and accept responsibility for professional assignments only when qualified by training or experience;
- (3) provide an opinion on a professional subject only when it is founded upon adequate knowledge and honest conviction;
- (4) act as faithful agents of their clients or employers, maintain confidentiality and avoid a conflict of interest but, where such conflict arises, fully disclose the circumstances without delay to the employer or client;
- (5) uphold the principle of appropriate and adequate compensation for the performance of engineering and geoscience work;
- (6) keep themselves informed in order to maintain their competence, strive to advance the body of knowledge within which they practice and provide opportunities for the professional development of their associates;
- (7) conduct themselves with fairness, courtesy and good faith towards clients, colleagues and others, give credit where it is due and accept, as well as give, honest and fair professional comment;
- (8) present clearly to employers and clients the possible consequences if professional decisions or judgments are overruled or disregarded;
- (9) report to their association or other appropriate agencies any hazardous, illegal or unethical professional decisions or practices by engineers, geoscientists, or others; and
- (10) extend public knowledge and appreciation of engineering and geoscience and protect the profession from misrepresentation and misunderstanding.