# Appendix 1: Self-assessment form

Use this form to track your progress and complete your self-assessment on how you meet the competency standard for Chartership, and upload this with your application. When you have completed the form, ask one of your eligible referees to sign it, then upload it with your application. You do not need to complete this form if you have a Mutual Recognition assessment.

|  |  |
| --- | --- |
| Name of applicant  |       |
| Membership number or date of birth |       |

## Competency Standards

To meet the minimum standard, you must demonstrate that you are able to practice competently in your practice area to the standard expected of a reasonable professional engineer. The extent to which you are able to perform each of the following numbered elements in your practice area must be taken into account in assessing whether you meet the overall standard. You’ll also need to show you can carry out engineering work at a particular level of complexity (see details later in this document).

Each competency standard is described below, together with performances indicators which help clarify how you may be able to demonstrate that you have met the standard. Note that as these are indicators, you do not need to provide evidence on every indicator – in fact, your area of work may have completely different indicators and that’s ok. The indicators are there as a guide.

**WARNING:** Having your assessment written by another person or persons (this includes all hiring or use
of any third-party professional writers/companies to assist or complete your documentation) constitutes unethical behaviour and may result in serious consequences including but not limited to immediate rejection of the application along with the imposition of a stand-down period before you can reapply.

## Competency Standard Group 1: Engineering knowledge

A solid foundation in engineering knowledge is necessary for any engineer. Within your practice area, we’d like you to demonstrate your ability to understand and apply your knowledge of accepted principles that support:

### Widely applied good practice for professional engineering

#### Performance indicators include:

* Has a Washington Accord degree or recognised equivalent qualification or has demonstrated equivalent knowledge and is able to:
* Identify, comprehend and apply appropriate engineering knowledge
* Work from first principles to make reliable predictions of outcomes
* Understand assumptions and constructs of mathematical or theoretical models and is able
to determine the relevance of their use in given situations
* Seek advice, where necessary, to supplement own knowledge and experience
* Read literature, comprehend, evaluate and apply new knowledge

### Good practice and local knowledge for professional engineering specific to New Zealand (for CPEng) or the country where you work (for Chartered Membership)

#### Performance indicators include:

* Understands and operates within the legal and regulatory framework in the jurisdiction.
* Understands and applies appropriately the special engineering requirements operating within
the jurisdiction.
* Understands and applies codified knowledge such as standards, practice notes, codes of practice etc

### Continually update your professional engineering knowledge and skills to make sure they remain relevant

#### Performance indicators include:

* Demonstrating a commitment to extending and developing knowledge and skills
* Participating in education, training, mentoring or other programmes contributing to his/her professional development
* Adapting and updating knowledge base in the course of professional practice
* Demonstrating collaborative involvement with professional engineers (New Zealand engineers
for CPEng assessments)
* Awareness and application of recent developments within his or her own practice area

|  |
| --- |
| COMPETENCY STANDARD GROUP 1: ENGINEERING KNOWLEDGE |
| **How to answer**In documenting your evidence for this group, please refer to the following prompts, and give examples from one or more work samples:* How do you use your engineering knowledge?
* Which pieces of legislation, technical standards and guidelines do you use in your work?
* How do you keep up-to-date with developments in your practice area and in professional engineering in general?
 |
| **Brief summary (approximately 500 words):**      |
| **Please reference the evidence you wish to provide for this group (name of evidence; page number):**      |

## Competency Standard Group 2: Managing engineering work

Managing people and projects is an integral part of being an engineering professional. To understand your approach to managing engineering work
we need you to demonstrate, within your practice area, how you:

### Take responsibility for making decisions (all or part of) on one or more complex engineering activities

#### Performance indicators include:

* Taking accountability for their own outputs and for those for whom they are responsible
* Accepting responsibility for their engineering activities

### Manage (all or part of) one or more complex engineering activities in line with good engineering management practice

#### Performance indicators include:

* Planning, scheduling organising and monitoring progress of projects or activities to deliver specified outcomes within time constraints
* Applying appropriate quality assurance techniques
* Managing resources, including personnel, finance and physical resources
* Managing conflicting demands and expectations
* Managing in multi-disciplinary and multi-cultural environments.

### Make sound professional engineering judgement

#### Performance indicators include:

* the ability to identify alternative options
* the ability to choose between options and justify decisions
* Peer recognition of ability to exercise sound professional engineering judgement.

### Identify, assess, and manage engineering risk

#### Performance indicators include:

* Identifying risks which impact on people, property and the environment
* Developing risk management policies, procedures and protocols to manage safety and hazards during construction/fabrication and product life cycles
* Managing risks through ‘elimination, minimisation and avoidance’ techniques
* Designing for safety during construction/fabrication, operation, maintenance and de-construction/decommissioning
* Informing decision makers of significant consequences from not following advice (eg, relating to risks, safety etc)

|  |
| --- |
| COMPETENCY STANDARD GROUP 2: Managing Engineering work |
| **How to answer**In documenting your evidence for this group, please refer to the following prompts, and give examples from one or more work samples:* What technical and management decisions do you make, or assist others in making?
* How do you manage projects, people and finances?
* How do you manage risk?
* Give an example where you have identified options, and chosen between these options in a logical way.
* Why do you feel that the engineering problems referred to here are complex, using Engineering New Zealand’s definition of complexity?
 |
| **Brief summary (approximately 500 words):**      |
| **Please reference the evidence you wish to provide for this group (name of evidence; page number):**      |

## Competency Standard Group 3: Professional acumen

Professionalism builds trust and instils confidence in the people you come
into contact with during your engineering activities. Within your practice area, please demonstrate how you:

### Carry out your professional engineering activities to an ethical standard, at least equivalent to the code of ethical conduct

#### Performance indicators include:

* Understanding the Engineering New Zealand and/or the CPEng codes of ethics
* Behaving in accordance with the relevant code of ethics even in difficult circumstances (this includes demonstrating an awareness of limits of capability; acting with integrity and honesty and demonstrating self-management)

### Recognise the likely general social, cultural, and environmental effects of professional engineering activities

#### Performance indicators include:

* Considering long term issues and impact(s) of own engineering activities, such as use of materials, waste during fabrication/construction, energy efficiency during use, obsolescence and end-of-life issues.
* Considering and taking into account possible social, cultural and environmental impacts and consulting where appropriate
* Giving special consideration of Te Tiriti o Waitangi—and the consequent responsibilities
* Recognising impact and long-term effects of engineering activities on the environment
* Recognising foreseeable effects and where practicable seeking to reduce adverse effects

### Communicate effectively with engineers and others

#### Performance indicators include:

* Using oral and written communication to meet the needs and expectations of their audience
* Communicating using a range of media suitable to the audience and context
* Communicating effectively in multi-disciplinary and multi-cultural settings
* Treating people with respect
* Developing empathy and using active listening skills when communicating with others
* Operating effectively as a team member

|  |
| --- |
| Competency Standard Group 3: Professional acumen |
| **How to answer*** What ethical dilemmas do you face in your engineering work (refer to Engineering New Zealand’s Code of Ethical Conduct)?
* What is important to you when communicating with others? Consider one-on-one discussions, meetings and presentations.
* Discuss how you consider (ie take account of) a range of social, cultural (including interactions with Te Ao Māori) and environmental effects in your work?
 |
| **Brief summary (approximately 500 words):**      |
| **Please reference the evidence you wish to provide for this group (name of evidence; page number):**      |

## Competency Standard Group 4: Developing technical solutions

Applying engineering principles to develop technical products or solutions that benefit society is a vital part of being an engineer. Within your practice area, please demonstrate how you:

### Define, investigate, and analyse complex engineering problems in line with good practice for professional engineering

#### Performance indicators include:

* Identifying and defining the scope of the problem
* Investigating and analysing relevant information using quantitative and qualitative techniques
* Testing analysis for correctness of results
* Conducting any necessary research
* Reaching substantiated conclusions using evidence-based and theoretical principles – including those derived by mātauranga Māori

### Design or develop solutions to complex engineering problems in line with good practice for professional engineering

#### Performance indicators include:

* Identifying needs, requirements, constraints and performance criteria, including as appropriate the need to design for safety, constructability, maintainability etc
* Developing concepts and recommendations that have been tested against engineering principles
* Consulting with stakeholders including Mana Whenua and Tangata Whenua
* Evaluating options and selecting solutions that are best matched to needs, requirements and criteria
* Planning and implementing effective, efficient and practical systems or solutions
* Evaluating outcomes against original specification or design brief
* Developing solutions that are informed by appropriate consideration for societal, health, safety,
legal and cultural issues, the rights of Tangata Whenua, and environmental factors.

|  |
| --- |
| COMPETENCY STANDARD GROUP 4: DEVELOPING TECHNICAL SOLUTIONS |
| **How to answer*** How do you analyse engineering problems?
* How do you know that any analysis is appropriate for the situation?
* Discuss a design problem that you have solved. In doing this, explain:
* How did you understand the design issues? Include examples of stakeholders that were consulted.
* How did you develop solution concepts and choose between them?
* How did you implement the detailed design solution?
* How do you know the chosen design solution is appropriate?
* Why do you feel the engineering problems referred to here are complex, using Engineering New Zealand’s definition of complexity?
 |
| **Brief summary (approximately 500 words):**      |
| **Please reference the evidence you wish to provide for this group (name of evidence; page number):**      |

## Referee details

|  |  |
| --- | --- |
| Name |       |
| Job title |       |
| Company name |       |
| Email |       |
| Relationship to applicant |       |

## Referee declaration

[ ]  I confirm that, to the best of my knowledge, the self-assessment statements and work referenced as evidence are a true account of the applicant’s work experience.

[x]  I understand that Engineering New Zealand may contact me directly if they have any questions regarding the applicant’s evidence or my verification of it.

[ ]  By submitting this report, I understand and acknowledge that my report will be used and retained by Engineering New Zealand for assessment purposes.

|  |  |
| --- | --- |
| Referee signature  |  |
| Date |       |