MUTUAL RECOGNITION ASSESSMENTS

GUIDANCE FOR INTERNATIONAL APPLICANTS

AUGUST 2023

REGISTRATION AUTHORITY
FOR CHARTERED PROFESSIONAL ENGINEERS

CONTENTS

Chartered options

Membership or Registration?

There're two ways to become Chartered as a professional engineer – through Engineering New Zealand membership as a Chartered Member (CMEngNZ) or through registration as a Chartered Professional Engineer (CPEng). Our Chartered Member class provides a general quality mark of professionalism along with all the benefits of membership. CPEng registration provides a mark of current New Zealand specific competence based on legislation. You can be both a Chartered Member and CPEng, or just one.

Chartered Professional Engineer (CPEngNZ) Registration	**Chartered Member of Engineering New Zealand (CMEngNZ)**
Assesses engineering competence to an internationally recognised standard, with current New Zealand specific competence.	Quality mark of general competence and professionalism, assessed to an internationally recognised standard.
Re-assessed at least every six years. Commits to the **CPEng Code of Ethical Conduct**. Meets annual CPD requirements.	Assessed once, with annual commitment to ongoing professional development and **ethics**.
May be required if your work involves signing off consents, or certifying work under a New Zealand regulatory regime. Only CPEngs may sign **Producer Statements** in New Zealand.	More accessible for engineers practising overseas, and provides direct entry for engineers who have been assessed in an equivalent overseas jurisdiction - e.g. CEng (UK), CPEng (Australia) or PEng (USA). May *not* sign Producer Statements in New Zealand.
You must be able to demonstrate your knowledge *and application* of accepted principles underpinning good practice for professional engineering that is *specific to New Zealand.* Must cover understanding of current New Zealand good engineering practice, as well as showing current competence.	You can be assessed for Chartered Member first and complete a significantly shorter mutual recognition assessment to apply for CPEng, once you have New Zealand engineering work experience.

Engineering New Zealand also has Chartered membership categories for Engineering Technologists and Engineering Technicians which provide recognition for engineering professionals in these important occupational roles. You can find out more about Chartered Technologist and Chartered Technician memberships **here**.

Applying for CPEng via Mutual Recognition

Engineering New Zealand currently maintains several mutual recognition agreements with different countries, which are publicly available on **our website**.

Engineering New Zealand offers Mutual Recognition Assessments (MRA) as an expedited pathway to CPEng registration for professional engineers registered with a recognised organisation. The MRA focuses on Competency Group 1 (Engineering Knowledge), which includes three elements from the CPEng Rules:

1.1 Comprehend, and apply your knowledge of accepted principles underpinning widely applied good practice for professional engineering.

1.2 Comprehend, and apply your knowledge of accepted principles underpinning good practice for professional engineering that is **specific to New Zealand.**

1.3 Maintain the currency of your professional engineering knowledge and skills.

The main focus of the MRA is to evaluate:

- New Zealand specific knowledge (element 1.2 above), and
- Current competence, recognising element 1.3 above and the requirement within the CPEng Act for CPEng's to be reassessed and demonstrate current competence at least every 6 years.

Applying for Chartered Membership via Mutual Recognition

If you are currently registered as a engineering professional with a **recognised international body**, you may automatically qualify for Chartered Membership with Engineering New Zealand in the equivalent Chartered Membership category. Get in touch with our membership team who will be able to answer any questions you may have: **membership@engineeringnz.org**.

Defining the CPEng standard

What the Rules say

CPEng Rule 6(2)(a)(ii) states that one of the minimum requirements for CPEng registration is your ability to

> a) *Comprehend, and apply your knowledge of, accepted principles underpinning –*
>   i) *widely applied good practice for professional engineering; and*
>   ii) *good practice for professional engineering that is specific to New Zealand*

Your application for CPEng must demonstrate your ability to apply your knowledge of accepted principles that are specific to New Zealand.

Defining New Zealand specific competencies for professional engineers

In the New Zealand context, the key competencies below are relevant to professional engineers[1]:

1. **Knowledge, understanding of technical design principles specific to New Zealand:**
   1.1 Understanding seismic design requirements and being able to demonstrate seismic design and knowledge using recognised New Zealand specific codes and regulations.
   1.2 Understanding New Zealand specific geomorphology considerations.
   1.3 Understanding New Zealand specific climate considerations.
   1.4 Understanding of other discipline specific technical design principles specific to New Zealand.
2. **Knowledge and understanding of New Zealand codes and regulations:**
   2.1 Understanding of the principles of consenting processes in New Zealand.
   2.2 Familiarity with the Building Act and associated regulations.
   2.3 Understanding of other discipline specific codes and regulations in New Zealand.
3. **Knowledge and understanding of Māori cultural considerations:**
   3.1 Appreciation for the principles of Te Tiriti o Waitangi (Treaty of Waitangi).
   3.2 Awareness of cultural protocols and engagement with Māori communities.
   3.3 Willingness to incorporate Mātauranga Māori (Māori knowledge) in engineering practice.
4. **Ethics**
   4.1 Understanding of the differences between the Chartered Professional Engineer's Code of Ethics in comparison with the ethical code they have worked within in their home jurisdiction.

[1] Please note that some of the competencies listed below ***are discipline specific***, meaning that not all applicants will be expected to demonstrate knowledge of all competencies.

Application evidence portfolio requirements

The evidence you submit for demonstrating comprehension and application of New Zealand specific knowledge should include:

Engineering Practice Fields

You may only apply for registration via the Mutual Recognition pathway within the field(s) in which you are currently registered, or the closest New Zealand equivalent field. See Appendix A for the current list of practice fields.

Suitable referees

You will need to nominate two referees for your application. We will send an invitation to your referees to provide a reference for you. If they accept the invitation, they'll be asked to provide information about your technical competence and professionalism. If a referee declines your request, you'll need to provide another person. **Guidance for referees** can be found on our website.

Defining acceptable referees

Both referees need to be current CPEng or equivalent[2]. Your referees must be familiar with your technical and professional capabilities and be able to confidently provide a reference. They should also be competent in the practice area for which you applying and familiar with your technical skills.

✓	*Two referees provided. In accordance with the Rules, these must be CPEng registered engineers or equivalent.* ***Ideally*** *at least one referee who does not work within the same company as you.* *The referee could be someone who has peer reviewed work samples or been involved in a collaborative project with you.*
✗	*A referee who is not familiar with your technical skills* *Referees who are conflicted in that they have a personal relationship with you or have a financial interest in the outcome of the assessment.*

In addition to being able to confirm your technical competence, your referees need to be able to:

- Confirm your work history.
- Tell us about your professional ethics, particularly whether you can be relied upon to practice within your area of competency.
- Tell us how you have gained a suitable level of local knowledge and compliance with local regulations in your current jurisdiction.
- Tell us how you incorporate cultural considerations in your current jurisdiction.

[2] CPEng equivalence means a qualification or title that the Registration Authority determines requires the holder to: (a) have demonstrated competence at least equivalent to the minimum standard for registration under these rules; and (b) be bound by a code of ethical conduct that is substantially equivalent to the code of ethical conduct under these rules. Examples of CPEng equivalence, therefore, include: A Chartered Member of Engineering New Zealand (CMEngNZ) who is not classified as an Engineering Technician (CMEngNZ (Engineering Technician)) or an Engineering Technologist (CMEngNZ (Engineering Technologist)); a Chartered Engineer (CEng) registered with the Engineering Council in the UK.

CPD Records

Your CPD records need to demonstrate participation in activities, courses and/or events that would provide you with knowledge of New Zealand specific design principles, local codes, regulations and cultural competence demonstrating the requirements for registration under the Mutual Recognition Assessment pathway.

Defining acceptable CPD

- Engagement with local technical group e.g. attending technical group meetings or suitable courses
- Courses on cultural competency relevant to New Zealand
- Courses or reading on New Zealand specific technical design principles.
- Courses or reading on New Zealand codes and regulations.

Self-assessment

The self-assessment statement must provide details as to the work you have done to familiarise yourself with the New Zealand context.

Defining an acceptable self-assessment statement

- Explain how you meet the standard for registration in terms of comprehending and applying knowledge of good practice for professional engineering that is specific to New Zealand.
- Reference the codes and regulations that apply to your discipline in the New Zealand context; explain your understanding of these and how they'd impact your approach/engineering practice.
- Provide an explanation of your understanding of Te Tiriti o Waitangi and how this may apply to your work in New Zealand.
- Discuss the social, cultural, and environmental impacts to consider in New Zealand projects within your discipline.
- Discuss key recent developments (knowledge, tools, technologies, regulations) within your practice area

Evidence Statements

For each work sample provided, you must provide detailed written statements as to how the work sample provided has been/would need to be done in the New Zealand context.

Defining acceptable evidence

- Provide sufficient evidence to demonstrate current competence in your practice area. This should be a minimum of 2 samples.
- For each sample you provide, clearly state how the sample demonstrates knowledge and application of good practice of professional engineering in New Zealand.
  - For example, if the sample is from New Zealand related work done overseas, clearly state how New Zealand codes and regulations overseas were applied and how you keep up with the relevant changes to those codes and regulations. If the samples are related to overseas codes, you need to state how they differ from those in New Zealand, and how you would approach the work differently in New Zealand.
  - Clearly state the cultural considerations you would need to apply in New Zealand.

- For any additional overseas work samples, clearly state any other local New Zealand considerations you'd incorporate in this work, were it to be done in New Zealand.
- Describe how they demonstrate the application of current tools, techniques, materials etc

Interactive assessment

The interactive assessment will include New Zealand specific questions to verify your local understanding. The Assessment Panel will also ask you questions to confirm that you are still competent to practice independently as registered CPEngs from the date of your registration, should your application be successful.

Questions could include:

- Direct questions to verify knowledge of New Zealand-specific design principles, local codes and regulations and your understanding of the context within which they are being applied.
- Open questions about the work samples provided and how they would be done in the New Zealand context.
- Discussion around the assessment of cultural impacts in relation to projects done in New Zealand, and how you'd communicate those with relevant/affected parties.
- Your understanding of the CPEng Code of Ethical Conduct

Additional field specific requirements

If you are applying for registration via Mutual Recognition in the **Structural**, **Geotechnical**, or **Fire** practice fields you also need to provide either:

- New Zealand work samples; OR
- Two New Zealand based CPEng referees[3]; OR
- A letter from a Building Consent Authority endorsing your application; OR
- A letter from a Technical Group endorsing your application.

If you are planning to apply for registration in the **structural field**, clear evidence of training in, and application of, seismic engineering design principles is an important consideration. Completion of a New Zealand taught master's programme would be an excellent way to strengthen your application in this area. Available programmes include:

- University of Canterbury: **INRL2021_INT_TaughtMasters_Structural_WEB.pdf (canterbury.ac.nz)**
- University of Auckland: **Master of Earthquake Engineering - The University of Auckland**

Please note that these additional requirements *may* be requested by Assessment Panels for applications for registration in other fields.

[3] The nominated CPEng referees need to have gone through at least one CPEng reassessment. They also need to be able to provide a reference on your technical competence.

Appendix A: Engineering Practice Field Descriptions

Engineering practice fields are loosely defined terms and are used as an indication of the nature of engineering work carried out by engineers in a certain field.

AEROSPACE ENGINEERING

Aerospace engineering is the design, development, and production of aircraft (aeronautical engineering), spacecraft (astronautical engineering) and related systems. Aerospace engineers may specialise in aerodynamics, avionics, structures, control systems or propulsion systems. It may involve planning maintenance programmes, designing repairs and modifications and exercising strict safety and quality controls to ensure airworthy operations.

BIOENGINEERING

Bioengineering draws heavily on the Chemical engineering discipline and involves the engineered development of raw materials to produce higher value products, using biological systems (biological catalysts). The description also encompasses the general application of engineering to biological systems to develop new products or solve problems in existing production processes. As examples, bioengineers are found in medical research, genetic science, fermentation industries and industries treating biological wastes.

BUILDING SERVICES

Building Services engineering is the application of mechanical or electrical engineering principles, and an understanding of building structure, to enhance all aspects of the built environment from air conditioning and mechanical ventilation, electrical light and power, fire services (e.g. sprinklers and alarms), water and waste services, data and communications, security and access control, vertical transportation, acoustics and energy management.

CHEMICAL ENGINEERING

Chemical engineering is concerned with the ways in which raw materials are changed into useful and commercial end products such as food, petrol, plastics, paints, paper, ceramics, minerals and metals. Often these processes are carried out at large scale plants. Research of raw materials and their properties, design and development of equipment and the evaluation of operating processes are all part of chemical engineering.

CIVIL ENGINEERING

Civil engineering is a broad field of engineering concerned with the, design, construction, operation and maintenance of structures (buildings, bridges, dams, ports) and infrastructure assets (road, rail, water, sewerage). The Civil engineering discipline underpins several engineering fields such as Structural, Mining, Geotechnical and Transportation engineering, in which civil engineers often specialise. General Civil engineers are likely to be competent to undertake work that relates to one or more of these areas.

CONSTRUCTION ENGINEERING

Construction engineering is a specialty field of civil engineering concerned with the oversight and management of large-scale infrastructure and building projects. Construction engineers coordinate design, plan, schedule and apply cost control oversight to complex projects to ensure environmentally sound, safe and efficient construction.

ELECTRICAL ENGINEERING

Electrical engineering is the field of engineering which deals with the practical application of electricity. It deals with the aspects of planning, design, operation and maintenance of electricity generation and distribution, and use of electricity as a source of energy within major buildings, industrial processing complexes, facilities and transport systems. It includes the associated networks and the equipment involved such as switchboards, cabling, overhead lines/catenaries, earthing, control and instrumentation systems.

Areas of specialisation within the wider electrical engineering discipline, such as electronics and telecommunications are usually concerned with using electricity to transmit information rather than energy. For this reason, electronics and radiocommunications/telecommunications are captured under the field of Information engineering.

ENGINEERING ACADEMIC

The Academic practice field is defined for engineering academic staff members from tertiary education including engineering researchers.

In tertiary education, academic staff members may be involved in engineering activities in various roles, from building engineering prototypes, to contributing to knowledge in engineering. Engineering academic staff members may not be directly involved in the engineering design process but undertaking cutting edge engineering research to lead and enhance engineering activities. Examples of work samples of engineering academic staff members may be their authored quality assurance publications in engineering disciplines, and/or their authored quality assurance engineering reports at NZQA level 7, 8, 9 or 10 (gradate or postgraduate level). Academic staff members who are teaching an engineering programme without quality assurance publications in engineering disciplines or quality assurance engineering reports, may not qualify for academic practice field.

ENGINEERING MANAGEMENT

Engineering Management is a field of practice where engineers from any technical engineering background exercise engineering judgement in making decisions on the application and optimisation of physical, human and financial resources to achieve engineering outcomes in related processes or business activities. Engineering Managers may not be directly involved in the engineering design process.

General management – where engineering knowledge is of benefit or essential and covering many engineering disciplines.

- Qualifies as Management practice field.
- Example: Chief Executive or Director of an engineering or construction company.

Engineering management of a multi-disciplinary team where engineering knowledge is essential but specific discipline knowledge is not essential.

- Qualifies as Management practice field.

- Example: Engineering manager of a local authority or manufacturing company. A judgement may be necessary, but err towards including the management field – the candidate is appropriate for both management and discipline fields. *(Note: an example grey area is the general manager of a lines company where electrical engineering knowledge may be essential for the role).*

Management or leadership of a team, however large, where the candidate must have engineering knowledge to do the job competently. This management is part of the skills and knowledge of the discipline.

- Would not normally qualify as Management practice field.
- Example: Chief structural engineer of a large consultancy or compliance authority. A judgement may be necessary but err towards including the management field if management activities are beginning to dominate – the candidate may be appropriate for both management and discipline fields.

Part time management of a small practice or branch of a consulting practice managing budgets and staff and clients while carrying out frontline engineering or being the responsible person signing off compliance certificates.

- Would not normally qualify for the Management practice field, as a certain amount of management is part of the engineering function, and is 'business as usual' for an engineer in this situation. *(Note: Grey area accepted as to the boundary between 'business as usual' and the management becoming dominant. As an acid test, ask "could they give up their discipline practice field?". If not, then Management should not apply. If so, then in theory they need to go through a full review to justify the change in practice field/area description. A balanced decision may lead to having the two practice fields).*

Full time engineering role where the applicant claims that they "do management", as well as advising clients, planning other workloads, training staff etc.

- Would not qualify for the Management practice field, as management is part of their normal engineering activity. This includes project management, unless it is dominant, in which case the practice field is still their engineering knowledge (discipline), and project management is written into the practice area description (ie they use their discipline skills to do project management).

ENVIRONMENTAL ENGINEERING

Environmental engineering draws on the Civil and Chemical engineering disciplines to provide healthy water, air and land to enhance human habitation. Environmental engineers devise, implement and manage solutions to protect and restore the environment, within an overall framework of sustainable development. The role of the environmental engineer embraces all of the air, water and soil environments, and the interactions between them.

FIRE ENGINEERING

Fire engineering draws on knowledge from the range of engineering disciplines to minimise the risk from fire to health and safety and damage to property through careful design and construction. It requires an understanding of the behaviour of fires and smoke, the behaviour of people exposed to fires and the performance of burning materials and structures, as well as the impact of fire protection systems including detection, alarm and extinguishing systems.

GEOTECHNICAL ENGINEERING

Geotechnical engineering involves application of knowledge of earth materials in the design of structures, such as foundations, retaining walls, tunnels, dams and embankments. Geotechnical engineers assess the properties and performance of earth materials such as their stability and strength, and the impact of groundwater.

INDUSTRIAL ENGINEERING

Industrial engineering is the application of mechanical and electrical engineering principles to the design and operation of production equipment, production lines and production processes for the efficient production of industrial goods. Industrial engineers understand plant and procedural design, the management of materials and energy, and human factors associated with worker integration with systems. Industrial engineers increasingly draw on specialised knowledge of robotics, mechatronics, and artificial intelligence.

INFORMATION ENGINEERING

Information engineering is based on the Electrical engineering discipline but also draws heavily from Computer Science. Three areas of further specialisation can be identified:

1. **Software engineering** – the development and operation of software-intensive systems that capture, store and process data.
2. **Telecommunications engineering** – the development and operation of systems that encode, transmit and decode data via cable systems (including fibre optics) and wireless systems (radiocommunications).
3. **Electronics engineering** – the design, development and testing of electronic circuits and networks that use the electrical and electromagnetic properties of electronic components integrated circuits and microprocessors to sense, measure and control processes and systems.

MECHANICAL ENGINEERING

Mechanical engineering involves the design, manufacture and maintenance of mechanical systems. Mechanical engineers work across a range of industries and are involved with the design and manufacture of a range of machines or mechanical systems, typically applying principles of hydraulics (fluid control), pneumatics (air pressure control) or thermodynamics (heat energy transfer). Mechanical engineers may specialise in the Building Services or Industrial engineering field.

MECHATRONICS ENGINEERING

Integrates specialist knowledge in mechanics, electronics and computer systems to design and develop integrated automated systems, such as chassis-stabilising systems, anti-lock brakes, engine control units, disk drives, cameras, service and surgical robots and medical devices. Often these systems are largely mechanical in nature but could not function without their essential electronic and computer control system components.

MINING ENGINEERING

Mining engineering involves extracting and processing minerals from the earth. This may involve investigations, design, construction and operation of mining, extraction and processing facilities.

PETROLEUM ENGINEERING

Petroleum engineering is a field of engineering relating to oil and gas exploration and production. Petroleum engineers typically combine knowledge of geology and earth sciences with specialised Chemical engineering skills, but may also draw on Mechanical engineering expertise to design extraction and production methods and equipment. Petroleum engineering activities are divided into two broad categories:

1. **Upstream** – locating oil and gas beneath the earth's surface and then developing methods to bring them out of the ground.
2. **Downstream** – the design and development of plant and infrastructure for the refinement and distribution of the mixture of oil, gas and water components that are extracted.

SOFTWARE ENGINEERING

Software engineers apply the process of analysing user needs and designing, constructing, and testing end user applications that will satisfy these needs through the use of software programming languages. A fundamental aspect is the application of engineering principals to software development. In contrast to simple programming, software engineering is used for longer and more complex software systems, which are used as critical systems for business and organisations.

STRUCTURAL ENGINEERING

Structural engineering is a specialised field within the broader Civil engineering discipline that is concerned with the design and construction of structures. Structures might include buildings, bridges, in-ground structures, footings, frameworks and space frames, including those for motor vehicles, space vehicles, ships, aeroplanes and cranes, composed of any structural material including composites and novel materials.

TRANSPORTATION ENGINEERING

Transportation engineering is a specialised field of practice in the civil engineering discipline relating to the movement of goods and people by road, water, rail and air.

A transportation engineer might specialise in one or more of: pavement design, asset maintenance/management, construction/project management, traffic operations and control, transportation planning and systems analysis, freight transportation and logistics, road safety, railways or public transport systems.

WATER ENGINEERING

Water engineers specialise in water based projects; many will have a civil engineering or environmental background. Water engineers generally deal with the provision of clean water from sources or treatment plants, return of waste water and treated sewage to the environment and the handling of stormwater including the prevention of flood damage. Asset management may be a major part in a water engineer's job. This involves design, operation, maintenance and construction of infrastructure for water resources as well as planning for the maintenance and replacement of three waters assets to maintain performance and minimise whole of life costs. These can include but are not limited to pipes, treatment devices, pump stations and reservoirs.