



ENSURING THE EXPERTISE TO GROW SOUTH AFRICA

**Competency Standard for Registration as a
Professional Certificated Engineer**

R-02-STA-PCE

Revision 0: 31 August 2022

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DEFINITIONS

Benchmark Qualification: An ECSA accredited engineering qualification as set out in the relevant Qualification Standard. For a list of ECSA accredited qualifications meeting the educational requirements, refer to document **E-20-PE/PT/PN**.

Competency area: The performance area in which all the outcomes can be demonstrated at the level prescribed by the specific technology in an integrated manner.

Competency indicator: The typifying guide to evidence indicating competence that is not normative.

Continuing Professional Development: The systematic maintenance, improvement and broadening of knowledge and skills, and the development of personal qualities necessary for the execution of professional and engineering duties throughout an engineering practitioner's career.

Engineering problem: A problematic situation that is amenable to analysis and solution using engineering science and methods.

Engineering Professions Act: The Engineering Professions Act, 46 of 2000 and any regulations issued in terms thereof.

Engineering science: A body of knowledge based on the natural sciences and using a mathematical formulation where necessary, that extends knowledge and develops models and methods to support its application, to solve problems and to provide the knowledge base for engineering specialisations.

Ill-posed problem: A problem for which the requirements are not fully defined or may be defined erroneously by the requesting party.

Integrated performance: The overall satisfactory outcome of an activity, which requires several outcomes to be satisfactorily attained. For example, a design requires analysis, synthesis, analysis of impacts, checking of regulatory conformance and judgement in decisions.

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Level descriptor: A measure of performance demands at which outcomes must be demonstrated.

Management of engineering works or activities: Management of the co-ordinated activities that are required.

Outcome: A statement of the performance criteria that a person must demonstrate to be judged competent at the professional level.

Over-determined problem: A problem for which the requirements are defined in excessive detail, making the required solution impossible to attain in all its aspects.

Practice area: A generally recognised or distinctive area of knowledge and expertise developed by an engineering practitioner through the path of education, training and experience followed.

Professional Certificated Engineer: A person register in that category in terms of sections 18(1)(a)(iii) of the Engineering Professions Act.

Range statement: The required extent of or limitations on expected performance stated in terms of situations and circumstances in which outcomes are to be demonstrated.

ABBREVIATIONS

| | |
|------------|--------------------------------------|
| DoR | Degree of responsibility |
| GCC | Government Certificate of Competency |
| PCE | Professional Certificated Engineer |

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BACKGROUND

The illustration below defines the documents that comprise the Engineering Council of South Africa (ECSA) system for registration in professional categories. The illustration also locates the current document.

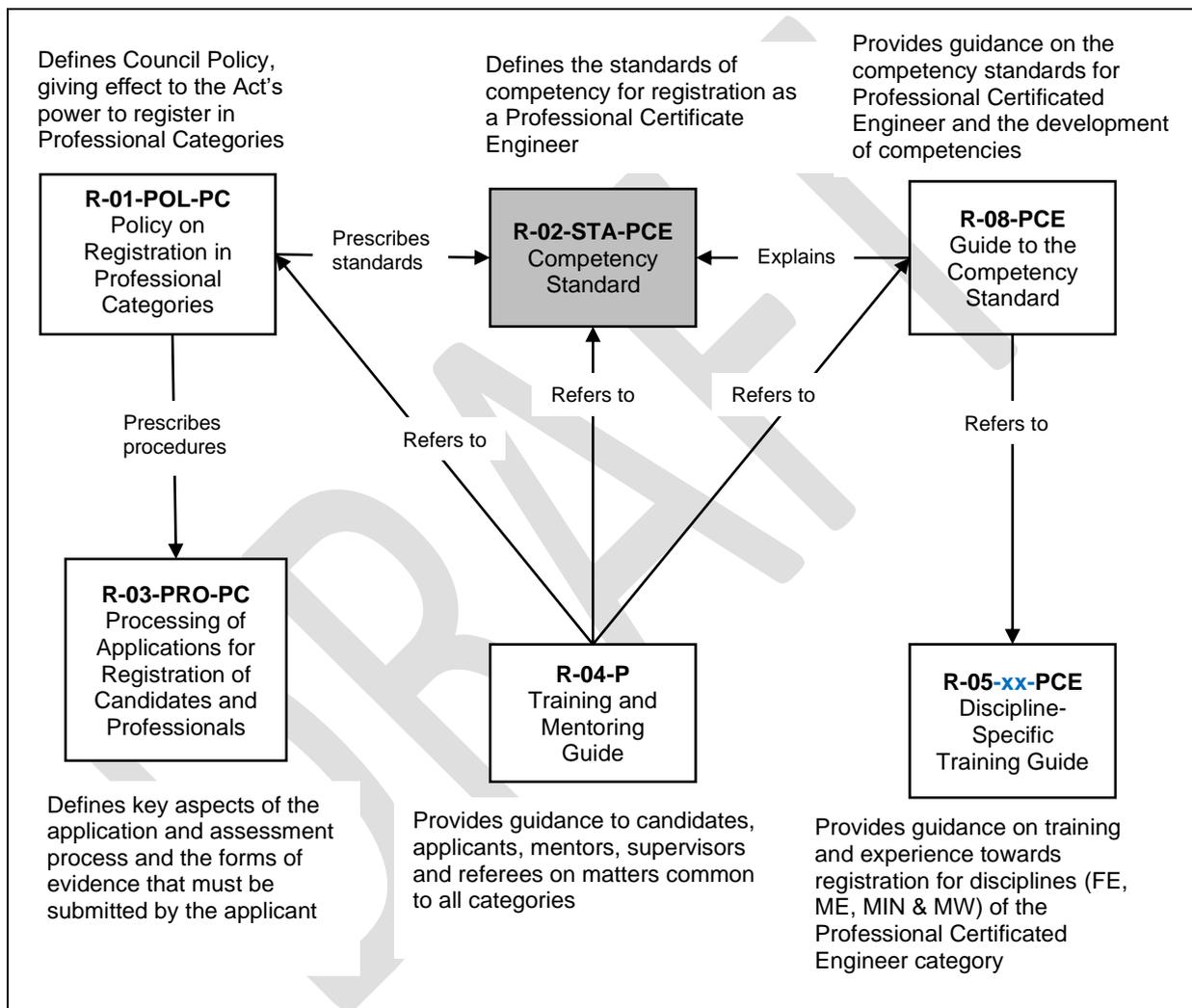


Figure 1: Documents defining the ECSA Registration System

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1 PURPOSE OF THIS STANDARD

This Competency Standard defines the competencies required for registration as a Professional Certificated Engineer (PCE). ECSA's other categories of professional registration: Professional Engineer, Professional Engineering Technologist and Professional Engineering Technician, are covered in another document **R-02-STA-PE/PT/PN**.

2 POLICY STATEMENT

The Competency Standards for professional registration are governed by the Policy on Registration of Professional Categories.

3 APPLICABLE LEGISLATIVE FRAMEWORK

The Engineering Profession Act stipulates that the Council may, subject to this Act:

- (a) consider and decide on any application for registration,
- (b) prescribe the period of validity of the registration of a registered person, and
- (c) keep a register of registered persons and decide on:
 - (i) the form of certificates and the register to be kept
 - (ii) the maintenance of the register or issuing of certificates
 - (iii) the reviewing of the register and the manner in which alterations thereto may be effected.

4 NATIONAL AND INTERNATIONAL COMPLIANCE

Because the basic educational qualification for acceptance as a Candidate for the Government Certificate of Competency (GCC) is NDip, BTech, BEng Tech, BSc Eng or equivalent in mechanical, electrical (HC), mining or marine engineering, a PCE may be eligible to register in one of the other categories (PrEng., PrTech Eng. or PrTechni Eng) to obtain international recognition.

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5 POLICY PROVISIONS

5.1 Introduction to competence

In general, competence is defined as the possession of the necessary knowledge and training and experience to perform the activities within the respective professional category to the standards expected in independent employment or practice.

The knowledge component of competency consists of knowledge from the engineering education process and knowledge that is subsequently acquired during specialised engineering-related activities.

The training and experience component is defined by a set of assessable outcomes, whereby competence must be demonstrated:

- within applicable engineering activities
- by the integrated performance of outcomes, and
- at the level defined for each outcome.

Thus, competence as defined for the purpose of this document, is detailed in two categories:

- Knowledge component
- Training and experience component.

The training and experience component is deeply integrated with degree of responsibility (DoR).

5.2 Degree of responsibility

The DoR at which a Candidate operates needs to be given specific consideration in conjunction with the demonstration of competence. While the aspect of DoR is detailed elsewhere, such as in the relevant Training and Mentoring Guide, emphasis is placed on the importance of DoR; Table 1 summarises the DoRs from A to E.

Together with the educational and experiential requirements set out in this document, emphasis should be placed on degree of responsibility “E – Performing” for Candidates to

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establish whether they are working at the level required for registration. Candidates are also required to have had a legal appointment as a Certificated Engineer for at least one year in a non-acting capacity for the size of plant, mine or vessel of prescribed installed power, or a Certificated Engineer who has had a legal appointment for 4 years as a mines or factories inspector for occupational health and safety.

Table 1: Summary of Degree of Responsibility

| DoR | Nature of Work | Responsibility | Level of Support |
|----------------------------|---|---|--|
| A Being Exposed | Undergoes induction, observes processes, work of competent practitioners | No responsibility, accept to pay attention | Mentor explains challenges and forms of solution |
| B Assisting | Performs specific processes under close supervision | Limited responsibility for work output | Supervisor/Mentor coaches, offers feed back |
| C Participating | Performs specific processes as directed with limited supervision | Full responsibility for supervised work | Supervisor progressively reduces support, but monitors outputs |
| D Contributing | Performs specific work with detailed approval of work outputs | Full responsibility to supervisor for quality of work | Candidate articulates own reasoning and compares it with that of supervisor |
| E Performing | Works in a team without supervision, recommends work outputs, responsible but not accountable | Level of responsibility to supervisor is appropriate to a registered person | Candidate takes on problem solving without support; at most limited guidance |

5.3 Level descriptors

The level descriptors referenced in this document pertain to:

- the level of an engineering problem
- the level of an engineering activity.

These descriptors are important to understand what is expected of a Candidate to achieve satisfactory demonstration of competence.

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5.3.1 Level descriptors for engineering problems

Each category of registration has three level descriptors for engineering problems to consider:

- Complex engineering problems
- Broadly defined engineering problems
- Well-defined engineering problems.

Complex engineering problems

Complex engineering problems require in-depth, fundamental and specialised engineering knowledge that facilitates an analytical approach from first principles in the working domain of a Professional Engineer.

Broadly defined engineering problems

Broadly defined engineering problems require coherent and detailed engineering knowledge underpinning the applicable technology area in the working domain of a Professional Certificated Engineer or Professional Engineering Technologist.

The characteristics of *broadly defined engineering problems* include one or more of the following:

- (a) The problems are ill-posed, are under- or over-specified and require identification and interpretation into the technology area.
- (b) The problems encompass systems within complex engineering systems.
- (c) The problems belong to families of problems that are solved in well-accepted and innovative and sustainable ways.

And one or more of the following:

- (d) The problems can be solved by structured analysis techniques.
- (e) The problems may be partially outside standards and codes. Justification must be provided to operate outside standards and codes.

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- (f) The problems require information from the practice area and the sources interfacing with the practice area, and this information is often complex or incomplete.
- (g) The problems involve a variety of issues that may impose conflicting technical constraints.

And one or both of the following:

- (h) The problems require judgement in decision-making in the practice area and consideration of the interfaces with other areas.
- (i) The problems have significant consequences that are important in the practice area and may extend more widely.

Candidates often find challenges in determining whether an engineering-problem can be classified as a *broadly defined engineering problem*. Candidate should consult the guide in Table 2 in this regard.

Table 2: Test for a broadly defined engineering problem

| Step | Main question | Criteria |
|---|--|---|
| Step 1 Identification of the engineering problem | Is the problem an engineering problem? | a) Does solving the problem require coherent and detailed engineering knowledge underpinning the applicable technology area? |
| Step 2 Establishment of the level of complexity of the initial problem state | What is the nature of the problem? Does it have one or more of the characteristics b, c and d? | b) The problem is ill-posed, is under or over specified and requires identification and refinement into the technology area. |
| | | c) The problem encompasses systems within complex engineering systems. |
| | | d) The problem is classified as falling within typical engineering requirements and is solved in well accepted and innovative ways. |
| Step 3 | What is encountered in the problem investigation and | e) The problem can be solved by structural analysis techniques / tools / methodologies. |

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| Step | Main question | Criteria |
|--|---|--|
| Complexity of the problem path from the initial state | analysis process? Does it have one or more of the characteristics e, f, g and h? | f) Standards, codes and procedures must be applied to solve the problem, and justification to operate outside these standards and codes must be provided. |
| | | g) The solutions require information from a variety of sources that are complex, abstract or incomplete. |
| | | h) Involve set of interested and affected parties with defined needs to be taken into account, including needs for sustainability. |
| Step 4 Level of decision-making required and potential consequences | What is involved in the decision-making while analysing the problem? Does it have either or both characteristics i and j? | i) Practical solutions to the problem require knowledge and judgement in decision making in the practice area and require consideration of the interface with other areas. |
| | | j) Decisions have significant consequences that are important in the practice area but may extend more widely. |

Well-defined engineering problems

Well-defined engineering problems are mainly solved by practical engineering knowledge underpinned by related theory in the working domain of Professional Engineering Technician.

5.3.2 Level descriptors for engineering activities

In general, the exact activities commonly and frequently carried out by Professional Candidates in the various registration categories depend on the Candidate's industry and sub-discipline. Candidates need to consider whether their activities meet the criteria of the outcomes that need to be demonstrated to be considered for professional registration. The Guide to the Competency Standard for Registration in the respective category and the Discipline-specific Training Guidelines, **R-08**, should be consulted for more information in this regard.

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Broadly defined engineering activities

Broadly defined engineering activities are applicable to the PCE and characterised by the following aspects:

- (a) The scope of the practice area is linked to the technologies used and the changes due to the adoption of new technology into current practice.
- (b) The practice area is located within a wider, complex context; requires teamwork; and has interfaces with other parties and disciplines.
- (c) Involve a variety of resources, including people, money, equipment, materials and technologies.
- (d) Require the resolution of occasional problems arising from interactions between wide-ranging or conflicting issues such as technical and engineering issues.
- (e) Constrained by available technology, time, finance, infrastructure, resources, facilities, applicable laws, standards and codes.
- (f) Have significant risks and consequences in the practice area and related areas.

5.4 Competence: Knowledge component

The criteria and processes for recognition of education qualifications for professional categories as defined by ECSA are detailed in document **E-17-PRO**, while the Registration Policy document (**R-01-POL-PC**) sets out the minimum requirements for registration in the respective categories.

5.5 Competence: Training and experience component

Table 3 provides an overview of the benchmark educational and knowledge-components for the respective registration categories and training and experience requirements for each category of registration, in conjunction with the corresponding level descriptor. The subsequent section provides more detail for each registration category.

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Table 3: Summary of qualification benchmarks

| Category of registration | Qualification (benchmark) | Qualification duration (benchmark) | Training and experience | Level descriptor |
|---|---|-------------------------------------|--|--|
| Professional Engineer PrEng | BSc (Eng) BEng | 4 years | 3 years | Solving <i>complex engineering problems</i> and performing complex engineering activities |
| Professional Engineering Technologist PrTech Eng | Adv Dip Eng BTech (Eng) BEng Tech | 3 years | 4 years | Solving <i>broadly defined engineering problems</i> and performing broadly defined engineering activities |
| | | 4 years | 3 years | |
| Professional Certificated Engineer PrCert Eng | NDip Dip Eng Tech Dip Eng BEng BSc (Eng) BTech (Eng) | Obtain one of the seven GCCs | 3 years including a legal appointment for 12 months | Solving <i>broadly defined engineering problems</i> and performing broadly defined engineering activities |
| Professional Engineering Technician PrTechni Eng | Certificate of Competency Adv Cert (Eng) Adv Cert (Eng Prac) | 2 years | 4 years | Solving well-defined engineering problems and performing well-defined engineering activities |
| | | 3 years | 3 years | |
| Note: Academic programmes must be accredited, recognised or evaluated as substantially equivalent, with individual assessments where required. | | | | |

5.5.1 Professional Certificated Engineer

Competence must be demonstrated within broadly defined engineering activities by integrated performance of the outcomes defined at the level specified for each outcome. Required contexts and functions may be referred to in the applicable Discipline Specific Training Guidelines and Guide to the Competency Standards for Registration as a Professional Certificated Engineer (**R-08-PCE**).

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- Electrical Engineer's Certificate of Competency issued in terms of the Mines Health and Safety Act, 1996
- Mechanical Engineer's Certificate of Competency issued in terms of the Mines Health and Safety Act, 1996
- Electrical Engineer's Certificate of Competency issued in terms of the Occupational Health and Safety Act, 1993
- Mechanical Engineer's Certificate of Competency issued in terms of the Occupational Health and Safety Act, 1993
- Manager's Certificate of Competency (Metalliferous) issued in terms of the Mines Health and Safety Act, 1996 or Minerals Act, 1991
- Manager's Certificate of Competency (Coal) issued in terms of Mines Health and Safety Act, 1996 or Minerals Act, 1991
- Chief Engineer Officer – Foreign Going Certificate of Competency issued in terms of the Merchant Shipping Act, 1951.

To register as a Professional Certificated Engineer, a minimum period of 3 years of appropriate post-GCC experience and training is required, which includes a legal appointment as a Certificated Engineer for at least 1 year in a non-acting capacity and updating of competence throughout. Only experience and legal appointments that meet the following requirements, are considered:

- (a) A minimum of three years as:
- Manager at a metalliferous or coal mine of which 1 year must include an appointment in terms of the Mines Health and Safety Act, 29 of 1996, which requires the possession of a GCC
 - Engineer (Electrical or Mechanical) of which 1 year must include an appointment in terms of the Mines Health and Safety Act, 29 of 1996 in charge of installed power of no less than 2,500 kW
 - Engineer (Electrical or Mechanical) of which 1 year must include an appointment in terms of the General Machinery Regulations issued in terms of the Occupational

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Health and Safety Act, 85 of 1993 in charge of installed power of no less than 3,000 kW

- (iv) A Chief or Second Marine Engineer Officer on a vessel with a registered power of no less than 3,000 kW in terms of the Merchant Shipping Act, 57 of 1951.
- (b) In all cases mentioned above, the experience must entail direct involvement in the solution of problems related to the installation, operation and/or maintenance of machinery which requires sound engineering judgement and management.
- (c) Experience gained as an engineer includes engineering drawings and design reviews for compliance with operational requirements, risk assessment, analysis and synthesis of solutions to production related problems, failure analysis and incident investigations, construction methods and construction management, training and personnel development – project execution methodologies, stakeholder management, and operational optimisation, provided that at least two of the required 3 years of experience are directly concerned with the installation, operation and/or maintenance of machinery which require sound engineering judgement and management and which demonstrate the applicant's competence at the required level of broadly defined engineering work.
- (d) In the case of an occupational health and safety inspector legally appointed in terms of either the Occupational Health and Safety Act, 85 of 1993 or the Mines Health and Safety Act, as the case may be, he or she must be a Certificated Engineer with at least 4 years in this appointment.

5.6 Competency standards

The competency standards are summarised below in Table 4, followed by more detailed descriptors for each category of registration.

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Table 4: Summary of competency standards

| Professional Engineer | Technologists/ Certificated Engineers | Technicians |
|--|--|--------------------------------|
| Level descriptor: complex | Level descriptor: broadly defined | Level descriptor: well-defined |
| GROUP A – Engineering Problem Solving (Knowledge-based) <u>Outcome 1:</u> Define, investigate and analyse (<i>level</i>) of engineering problems <u>Outcome 2:</u> Design or develop solutions (<i>level</i>) of engineering problems <u>Outcome 3:</u> Comprehend and apply knowledge: Principles, specialist knowledge, jurisdictional and local knowledge | | |
| GROUP B – Managing Engineering Activities <u>Outcome 4:</u> Manage part or all of one or more (<i>level</i>) of engineering activities <u>Outcome 5:</u> Communicate clearly with others in the course of his/her engineering activities | | |
| GROUP C – Risk and Impact Mitigation <u>Outcome 6:</u> Recognise and addresses the reasonably foreseeable social, cultural and environmental effects of (<i>level</i>) of engineering activities <u>Outcome 7:</u> Meet all legal and regulatory requirements and protect the health and safety of persons in the course of his/her (<i>level</i>) engineering activities | | |
| GROUP D – Act ethically, exercise judgment and take responsibility <u>Outcome 8:</u> Conduct engineering activities ethically <u>Outcome 9:</u> Exercise sound judgment in the course (<i>level</i>) of engineering activities <u>Outcome 10:</u> Be responsible for making decisions on part or all (<i>level</i>) of engineering activities | | |
| GROUP E – Initial Professional Development <u>Outcome 11:</u> Undertake Professional Development activities sufficient to maintain and extend his/her competence. | | |

Table 5: Competency standards

| Professional Certificated Engineer |
|---|
| GROUP A – OUTCOMES: ENGINEERING PROBLEM SOLVING This group of outcomes requires the Candidate to apply appropriate theoretical and practical methods to <i>identify, analyse</i> and <i>solve</i> broadly defined engineering problems. |
| Outcome 1: Define, investigate and analyse <i>broadly defined engineering problems</i> . |
| Competency indicators |
| A definition, investigation into and analysis of <i>broadly defined engineering problems</i> within the competence area typified by the following performance is expected: |

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| <ul style="list-style-type: none"> • Perform or contribute to defining engineering problems, thus leading to an agreed definition of the problems to be solved. • Perform or contribute to investigating engineering problems, including collecting, organising and evaluating information. • Perform or contribute to analysing engineering problems, using conceptualisation, justified assumptions, limitations and evaluation of results. |
| <i>Range Statement</i> |
| The problem may be a design requirement, an applied research and development requirement or a problematic situation in an existing component, system or process. The problem is one amenable to solution by technologies known to the applicant applicable to the competence area. This outcome is concerned with understanding a problem: Outcome 2 is concerned with the solution. |
| Outcome 2: Design or develop sustainable solutions to <i>broadly defined engineering problems</i> . |
| Competency indicators |
| <p>This outcome is normally demonstrated after a problem analysis as defined in Outcome 1. Working systematically to reach a solution to a <i>broadly defined problem</i>, typified by the following performances is expected:</p> <ul style="list-style-type: none"> • Design or develop solutions to <i>broadly defined engineering problems</i>. • Check impacts and sustainability. • Systematically synthesise solutions and alternative solutions or approaches to the problem by analysing designs against requirements, including costs and impacts on outside parameters. • Draw up detailed specification requirements and design documentation for implementation to the satisfaction of the client. |
| <i>Range statement</i> |
| Solutions are those enabled by the technologies in the applicant's competence area. Engineering should look not only to decrease impacts, but also to restore and regenerate through design. |
| Outcome 3: Comprehend and apply the knowledge embodied in widely accepted and applied engineering procedures, processes, systems or methodologies and those specific to the jurisdiction in which he/she practises. |
| Competency indicators |
| <p>This outcome is normally demonstrated during the planning, investigation or operations confined to the competence area:</p> <ul style="list-style-type: none"> • Apply engineering principles, practices, technologies, including the application of GCC level theory in the practice area. • Indicate working knowledge of areas of practice that interact with the practice area to underpin teamwork. • Apply related knowledge of finance, statutory, sustainability, safety and management. |

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| <i>Range Statement</i> |
| <p>Applicable knowledge includes the following:</p> <ul style="list-style-type: none"> • Technological knowledge that is well-established and applicable to the practice area irrespective of location, supplemented by locally relevant knowledge, for example, established properties of local materials. Emerging technologies are adopted from formulations of others. • A working knowledge of interacting disciplines (engineering and other) to underpin teamwork confined to the competence area. • Jurisdictional knowledge includes legal and regulatory requirements as well as locally relevant codes of practice, as required for practice area: law of contract, contract administration, health and safety, environmental, application of sustainable materials and practices, intellectual property, quality management, risk management, maintenance management, regulation, project management or construction management. |
| GROUP B OUTCOMES: MANAGING ENGINEERING ACTIVITIES |
| This group of outcomes requires the Candidate to demonstrate technical leadership and effective interpersonal skills. |
| Outcome 4: Manage part or all of one or more <i>broadly defined engineering activities</i> |
| Competency indicators |
| <p>The display of personal and work process management abilities is expected confined to the competence area:</p> <ul style="list-style-type: none"> • Manage self, people, work priorities, processes, and resources in <i>broadly defined engineering work</i>. • Provide evidence of role in planning, organising, leading and controlling <i>broadly defined engineering activities</i>. • Demonstrate knowledge of conditions and operation of contractors and the ability to establish and maintain professional and business relationships. |
| <i>Range statement</i> |
| See Outcome 5 below |
| Outcome 5: Communicate clearly with others during engineering activities |
| Competency indicators |
| <p>Demonstrates effective communication by providing evidence of the following:</p> <ul style="list-style-type: none"> • Ability to write clear, concise, effective technical, legal and editorially correct reports. • Ability to issue clear instructions to stakeholders using appropriate language and communication skills. • Ability to execute oral presentations using structure, style, language, visual aids and supporting documents appropriate to the audience and purpose. |
| <i>Range statement</i> |
| <p>For Outcomes 4 and 5, management and communication in <i>broadly defined engineering</i> involve:</p> <ul style="list-style-type: none"> • planning the activities • organising the activities • leading the activities |

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| <ul style="list-style-type: none"> implementing the activities controlling the activities. <p>Communication relates to technical aspects and wider impacts of professional work. Audience includes supervisors, peers, subordinates, other disciplines, clients and stakeholders. Audiences confined to the competence area. Appropriate modes of communication must be selected. The Certificated Engineer is expected to perform the communication functions reliably and repeatedly.</p> |
| GROUP C OUTCOMES: RISK AND IMPACT MITIGATION |
| This group of outcomes requires the Candidate to demonstrate recognition of an obligation to society, the profession and the environment and to make a commitment to abide by the professional Code of Conduct |
| Outcome 6: Recognise and address the foreseeable social, cultural, environmental and sustainability effects of <i>broadly defined engineering</i> activities. |
| Competency indicators |
| This outcome is normally displayed while evaluating and planning tasks within the competence area, by typically providing evidence of the following: <ul style="list-style-type: none"> Ability to identify interested and affected parties and their expectations in regard to interactions between technical, social, cultural, environmental and long-term sustainability considerations. Demonstration of measures taken to mitigate the negative effects of engineering activities. |
| Outcome 7: Meet all legal and regulatory requirements and protect the health and safety of persons and adhere to sustainable practices in the course of his or her <i>broadly defined engineering activities</i> . |
| Competency indicators |
| Competency is indicated by the following: <ul style="list-style-type: none"> Identifying applicable legal, regulatory, health and safety requirements and standards and sustainable practices for the <i>broadly defined engineering</i> activity. Stating circumstances where applicant assisted in or demonstrated awareness of the selection of safe and sustainable materials, components and systems and has identified risk and applied risk management strategies. |
| <i>Range statement</i> |
| For Outcomes 6 and 7, impacts and Regulatory requirements include the following: <ul style="list-style-type: none"> Requirements include both explicitly regulated factors and those that arise in the course of particular work. Impacts considered extend over the lifecycle of the project and include the consequences of the technologies applied. Effects to be considered include direct and indirect, immediate and long-term, related to technology used. Safe and sustainable materials, components and systems. Regulatory requirements are explicit for the context and generally. Apply defined, widely accepted risk management strategies. Persons whose health and safety are to be protected are both inside and outside the workplace. |

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| GROUP D OUTCOMES: ACT ETHICALLY, EXERCISE JUDGEMENT, AND TAKE RESPONSIBILITY |
| This group of outcomes requires a Candidate to evaluate the outcomes and impacts of <i>complex engineering activities</i> . |
| Outcome 8: Conduct engineering activities ethically |
| Demonstration of sensitivity to ethical issues and the adoption of a systematic approach to resolving these issues is expected and typified by the following: <ul style="list-style-type: none"> • Confirmation of conversance with the ECSA Code of Conduct for registered persons • Confirmation of operations that are compliant with the ECSA Code of Conduct for registered persons • Demonstration of how ethical problems and affected parties are identified, and how the best solution to resolve the problem is selected. |
| <i>Range statement</i> |
| Ethical behaviour involves the comprehension and application of professional ethics, responsibilities and norms of engineering practice within one's own limits of competence. |
| Outcome 9: Exercise sound judgement in the course of <i>broadly defined engineering activities</i> . |
| Competency indicators |
| Exhibition of judgement is demonstrated by the following: <ul style="list-style-type: none"> • Exercising judgement in arriving at a conclusion within the application of technologies and their interrelationship to other disciplines and technologies. • Considering factors regarding risk, the consequences of the technology applied and the affected parties. |
| <i>Range statement</i> |
| Judgement is expected both within the application of the applicant's technologies, in their wider impacts and when dealing with interfaces to other disciplines and technologies. Judgement in decision-making involves: <ul style="list-style-type: none"> • taking several risk factors into account • significant consequences in a technology application and related contexts • ranges of interested and affected parties with varying needs considered, including needs for sustainability. |
| Outcome 10: Be responsible for making decisions on part or all the <i>broadly defined engineering activities</i> . |
| Competency indicators |
| Responsibility is displayed by the following performance carried out within the competency area: <ul style="list-style-type: none"> • Engineering, social, environment and sustainable development taken into consideration in discharging responsibilities for significant parts of one or more activities. • Advice sought from a responsible authority on matters outside own area of competence. • Academic knowledge of at least GCC level combined with past experience used in formulating decisions. |
| <i>Range statement</i> |
| The applicant is expected to demonstrate adequately discharging responsibility for significant parts of one or more <i>broadly defined engineering activities</i> . |

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| GROUP E OUTCOMES: CONTINUING PROFESSIONAL DEVELOPMENT |
| This outcome requires a Candidate to demonstrate a commitment to lifelong learning. |
| Outcome 11: Undertake sufficient professional development activities to maintain and extend competence. |
| Competency indicators |
| Self-development is managed by the following: <ul style="list-style-type: none"> • Adopting strategy independently to enhance professional development. • Showing awareness of philosophy regarding professional development. |
| <i>Range statement</i> |
| Professional development involves: <ul style="list-style-type: none"> • taking ownership of own professional development • planning own professional development strategy • selecting appropriate professional development activities • recording professional development strategy and activities while displaying independent learning ability. |

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REVISION HISTORY

| Revision number | Revision date | Revision details | Approved by |
|-----------------|-------------------|---|---------------|
| Draft A | 08 April 2020 | Merging of R-02-STA-PE/PT/PCE/PN | RPS BU |
| Rev 0 | 06 July 2020 | The R-02-PE, R-02-PT, R-02-PCE and R-02-PN are combined into R-02-STA-PE/PT/PCE/PN Knowledge component and summarised competency tables have been added. Alignment to the Policy and Standards Development Framework on ECSA Policies | RPS Executive |
| Rev 1 | 16 July 2020 | Approval | RPSC |
| Rev 1 | 20 August 2020 | Ratification | Council |
| Rev2 | 30 September 2022 | R-02-STA-PCE carved out of merged document as per Rev 0 | |

The Competency Standard for:

Registration in Professional Categories as PCE

Revision 1 dated 20 August 2020 consisting of 22 pages has been reviewed for adequacy by the Business Unit Manager and is approved by the Executive: Research, Policy and Standards (RPS).

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Business Unit Manager

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Date

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Executive: RPS

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Date

This definitive version of this policy is available on our website.

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