Engineering Council

The UK Standard for Professional Engineering Competence and Commitment Contextualised for Higher-Risk Buildings (UK-SPEC HRB)

First edition

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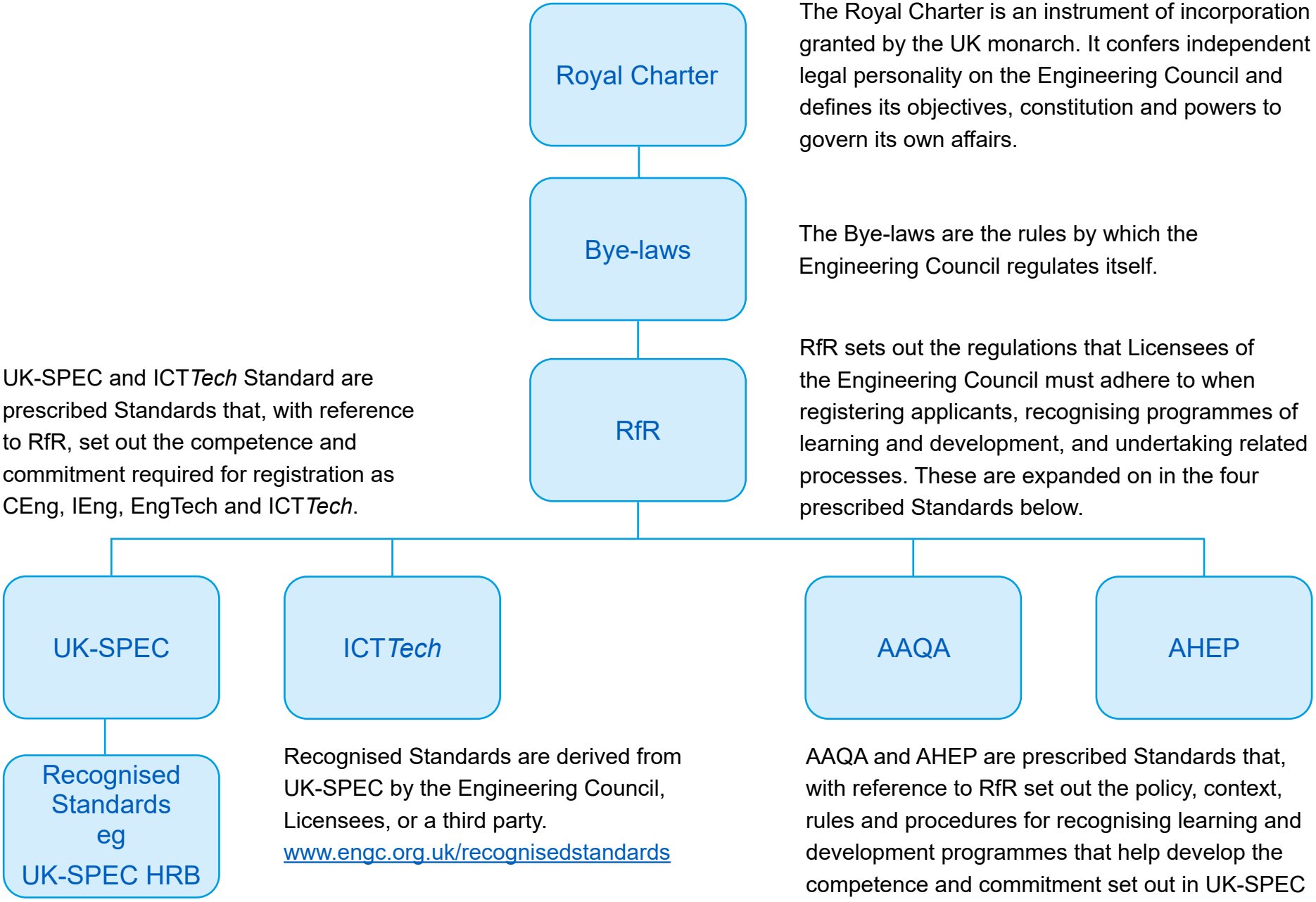
Hierarchy of regulations and standards

The Engineering Council is the UK's regulatory body for the engineering profession. It operates under a Royal Charter and is governed by a Board that represents UK Licensees as well as individuals from industries and sectors with an interest in the regulation of the profession.

This document is one in a series of closely related publications:

- **Regulations for Registration (RfR)**
- **Regulations for Licensing (RfL)**
- **The UK Standard for Professional Engineering Competence and Commitment (UK-SPEC)**
- **Information and Communications Technology Technician Standard (ICT*Tech* Standard)**
- **Approval and Accreditation of Qualifications and Apprenticeships (AAQA)**
- **Accreditation of Higher Education Programmes (AHEP)**

The Engineering Council publishes these documents on behalf of the UK engineering profession, with whom they were developed and are kept under review. The relationship between these publications is:



The Engineering Council also publishes policy statements, guidance for institutions and guidance for individuals. These, along with all the publications listed above, are available on the Engineering Council website: www.engc.org.uk

Contents

Glossary
At the end of UK-SPEC HRB there is a glossary that explains some of the terms used.

Foreword

Following the Grenfell Tower tragedy in 2017, Dame Judith Hackitt, commissioned by the UK Government, undertook an independent review of UK building regulations and fire safety: 'Building a Safer Future'. This report identified inconsistency in the processes and standards for assuring the skills, knowledge, experience and behaviours of those working on higher-risk buildings (HRBs), constituting a major flaw in the current regulatory system.

In response, a Competence Steering Group was set up under the auspices of the Industry Response Group and subsequently published two reports – Raising the Bar (2018) and Setting the Bar (2020). These reports led to development of the BS 8670. This code of practice sets core building safety criteria for bodies that assess the competence of designers, contractors, fire risk assessors, building managers and specialist technical or corporate roles including engineers/technicians working on higher-risk buildings. Dame Judith's report informed drafting of building safety legislation which led to the Building Safety Act 2022. The intention is to ensure that everyone undertaking design work or building work is competent to do their work in a way that ensures compliance with building regulations.

In response to these reports, the Engineering Council developed UK-SPEC HRB as a Recognised Standard designed to assess the competence and commitment of individual engineers and technicians working on higher-risk buildings in the UK. UK-SPEC HRB incorporates the criteria from BS 8670 and sets out a sector-specific competence framework consisting of a core document and Discipline Annexes. Demonstrating competence could involve registration against the core framework only, or a combination of the Discipline Annexes: Fire Engineering, Structural Engineering, Building Services Engineering and Facade Engineering. See: www.engc.org.uk/uk-spec-hrb

Welcome

The purpose of UK-SPEC HRB

The Building Safety Act 2022 sets out the statutory requirements for building owners to appoint competent people to undertake work on higher-risk buildings. This forms part of the safety case which must be presented at gateway points during the building approval process and maintained through the life cycle of the building. This includes work that is carried out while the building is occupied.

This document is the UK Standard for Professional Engineering Competence and Commitment for Higher-Risk Buildings (UK-SPEC HRB). It is an extension of the UK Standard for Professional Engineering Competence and Commitment (UK-SPEC) and can be read alongside that document.

The primary purpose of UK-SPEC HRB is to explain the competence and commitment requirements that people must meet and demonstrate to be registered in each of these registration categories:

- **Engineering Technician HRB**
- **Incorporated Engineer HRB**
- **Chartered Engineer HRB**

This document also explains:

- Why professional registration is important
- How to achieve professional registration
- What engineers and technicians must do to maintain professional registration, including:
  - the requirement to maintain and enhance competence
  - the obligation to act with integrity and in the public interest
  - membership of a Licensee

The primary purpose of UK-SPEC HRB is to set out how UK-SPEC should be applied for people who undertake engineering work in the higher-risk buildings sector. It sets out threshold standards of competence and commitment that people who undertake engineering work on higher-risk buildings should meet, the routes onto the HRB Engineering Council Register and requirements for periodic revalidation of competence.

Who UK-SPEC HRB is for

Many different users will find this document useful. However, it has been written primarily for these audiences:

- Individuals who are thinking about undertaking engineering work on higher-risk buildings
- Individuals who undertake engineering work on higher-risk buildings and are thinking about becoming professionally registered
- Licensees and Professional Affiliates through which engineers and technicians who undertake work on higher-risk buildings become professionally registered
- Employers of engineers and technicians
- People responsible for the education or training of engineers and technicians

Licensee

Throughout this document the term ‘Licensee’ is used to describe the engineering institutions that have been licensed by the Engineering Council board to assess individuals for professional registration. To become a Licensee, an organisation must pass a rigorous process demonstrating, to the satisfaction of the Engineering Council Board, that they are competent to perform this task and to regulate the conduct of their members. Additionally, Licensees can also be licensed to approve or accredit programmes of learning to specific standards. Licensees are sometimes known as Licensed Professional Engineering Institutions, or PEIs.

What is professional registration?

Professional registration verifies that an individual can meet the engineering and technological needs of today, while also anticipating the needs of, and impact on, future generations.

Both in the UK and overseas, professional registration gives employers, government and society confidence in the engineering industry. In this way, professional registration offers safeguarding assurances.

Registration demonstrates that an engineer or technician has reached a set standard of knowledge, understanding and occupational competence. It also demonstrates an individual's commitment to professional standards, to developing and enhancing through Continuing Professional Development (CPD) as well as revalidation of competence.

UK-SPEC HRB covers three professional registration categories which are set out in Table 1 on page 7.

People who gain further qualifications or experience over the course of their careers can be assessed for another registration title. Many people continue to develop their competence to enable them to move from Engineering Technician to Incorporated Engineer or Chartered Engineer.

Why register?

Benefits for individuals: recognition, career development, earning potential

As set out in the Building Safety Act, there is a statutory requirement for Accountable Persons to appoint competent individuals to undertake work on HRBs. Registration against UK-SPEC HRB is a means to demonstrate competence to work in this environment and commitment to undertake such work in a safe and ethical manner. Professional registration sets individual engineers and technicians apart from those who are not registered. Gaining a professional title establishes a person's proven knowledge, understanding and competence to a set standard and demonstrates their commitment to developing and enhancing competence.

Registration increases a person's earning potential and establishes credibility with peers across the profession.

Maintaining registration requires continued membership of a Licensee. Licensees, in turn, can help registrants find development opportunities through exposure to new developments, training or networking opportunities. In addition, the criteria of the UK-SPEC HRB provides a useful framework for CPD, particularly for engineers and technicians aiming for a professional registration title.

Further benefits for individuals are available at:
www.engc.org.uk/benefits

Table 1: Overview of professional registration titles

Title	Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
Descriptor	Applies proven techniques and procedures to solve practical engineering problems. Applies safe systems of work.	Maintains and manages applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation.	Develops solutions to engineering problems using new or existing technologies, through innovation, creativity and change. May be accountable for complex systems with significant levels of risk.
Key attributes	1. Contribution to either the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services 2. Supervisory or technical responsibility 3. Effective interpersonal skills in communicating technical matters 4. Commitment to professional engineering values	1. The theoretical knowledge to solve problems in developed technologies using well-proven analytical techniques 2. Successful application of their knowledge to deliver engineering projects or services using established technologies and methods 3. Contribution to project and financial planning and management together with some responsibility for leading and developing other professional staff 4. Effective interpersonal skills in communicating technical matters 5. Commitment to professional engineering values	1. The theoretical knowledge to solve problems in new technologies and develop new analytical techniques 2. Successful application of the knowledge to deliver innovative products and services and/or take technical responsibility for complex engineering systems 3. Responsibility for financial and planning aspects of projects, sub-projects or tasks 4. Leading and developing other professional staff through management, mentoring or coaching 5. Effective interpersonal skills in communicating technical matters 6. Commitment to professional engineering values

Benefits for employers: assurance of quality

Employers of professionally registered engineers and technicians can be assured that they have:

- had their competence and credentials independently assessed
- had their credentials verified to an internationally recognised standard, and
- made a commitment to their CPD

Employing registered professionals can help mitigate against risks and liabilities, as registrants are governed by a Code of Professional Conduct.

Maintaining registration requires continued membership of a Licensee and a commitment to CPD. This means employers can be reassured that registered employees are developing and enhancing their competence and will be exposed to new developments in their profession.

UK-SPEC

Some employers find the framework of the UK-SPEC a useful basis for their own organisational needs, such as to structure CPD. Others rely on achievement of registration to demonstrate an employee's readiness for promotion. In some cases, both in the UK and internationally, the awarding of contracts will require evidence that organisations employ professionally registered engineers.

Further benefits for employers are available at:
www.engc.org.uk/employers

International context

The Engineering Council is committed to supporting its professionally registered engineers and technicians working in other countries. The professional titles of the Principal Register, EngTech, IEng and CEng are recognised widely around the world. Professional registration, as defined in UK-SPEC, reflects the requirements of global engineering.

Engineers who have developed their professional engineering competence in countries outside of the United Kingdom are welcome to join the Engineering Council Registers, subject to meeting the assessment criteria. For further information see:
www.engc.org.uk/international

What is engineering competence?

Competence is defined as a professional's ability to carry out engineering tasks successfully and safely within their field of practice. This includes having the individual skills, knowledge and understanding, personal behaviour and approach, to be able to work collaboratively with others to achieve the intended outcomes. Competence includes the ability to make professional judgments and an awareness of the limits of one's own ability and knowledge in order to seek assistance when required.

Each registration title requires demonstrations of competence in five broad areas:

AA. Knowledge and understanding
BB. Design, development and solving engineering problems
CC. Responsibility, management and leadership
DD. Communication and interpersonal skills
EE. Professional commitment

What is professional commitment?

Registered engineering professionals are required to demonstrate a personal and professional commitment to society, to the environment and to their profession. As part of demonstrating overall competence, it is mandatory to show that they have adopted a set of values and conduct that maintains and enhances the reputation of the profession.

This includes:

- Maintaining public and employee safety
- Undertaking work in a way that protects the environment and contributes to sustainable development
- Complying with codes of conduct, codes of practice and the legal and regulatory framework
- Managing, applying and improving safe systems of work
- Carrying out the CPD necessary to maintain and enhance competence in relation to duties and responsibilities
- Exercising responsibilities in an ethical manner
- Recognising inclusivity and diversity
- Adopting a security-minded approach
- Actively participating within the profession

The Engineering Council has published a CPD Code for Registrants, (see page 118), as well as guidance on risk, sustainability, whistleblowing and security (see pages 119-120).

Ethical standards

Together with the Royal Academy of Engineering, the Engineering Council developed The Statement of Ethical Principles. This document outlines how members of the profession should conduct themselves in their working habits and relationships. The values it is based on should apply in every situation in which engineers and technicians exercise their judgment.

The Statement of Ethical Principles is available at:
www.engc.org.uk/ethics

Further information on the required Standards is available from a variety of sources. Each Licensee will have its own Code of Professional Conduct, in line with the framework on Professional and Ethical Behaviour on page 119 of this document, and supporting guidance.

Routes to registration using UK-SPEC HRB

How to become professionally registered – UK-SPEC HRB

HRB registration is open to all engineers and technicians who:

- can satisfy the requirements for underpinning knowledge and understanding, skills, behaviours and experience
- can demonstrate competence and commitment to meet the necessary standard
- are members of a Licensee licensed to award HRB registration

What are the requirements for HRB registration?

Through UK-SPEC HRB, the Engineering Council sets the standards which need to be met for HRB registration as Engineering Technician HRB, Incorporated Engineer HRB and Chartered Engineer HRB. The Licensee then assesses an applicant's competence and commitment against those standards for HRB registration.

The Licensee will be able to provide details of their process for HRB registration and revalidation, including typical timescales.

The list of institutions licensed for HRB registration by the Engineering Council is available at:
www.engc.org.uk/professionalregistrationguide

How are applicants assessed

Once a person is confident that they meet all the criteria for professional registration, they can apply for assessment through their chosen Licensee. The assessment process is known as a Professional Review. The Licensee will provide a detailed description of their specific requirements and a format for the submission of documented evidence.

Applicants shall submit formal documented evidence of any relevant qualifications, experience and training and show how this relates to the appropriate competence and commitment as set out in UK-SPEC HRB and/or the Discipline Annexes.

For all HRB registration titles, the Professional Review process has two components

- a review of documentary evidence
- an interview

There are several routes to HRB registration

- one for those who are already on the Engineering Council's Principal Register as CEng, IEng, EngTech or ICTTech and wish to add HRB registration
- another for those who are not registered and wish to apply for both Principal and HRB registration at the same time
- and another for those who are not registered and wish to apply for HRB registration only

There is a further process for an HRB registrant looking to apply for Principal registration.

A Principal registrant (green route)

A Principal registrant applying for HRB registration will already have completed a full professional review and been approved by the Licensee's responsible committee.

The registrant will apply for HRB registration and be assessed against the Engineering Council's Recognised Standard, UK-SPEC HRB or one of its Discipline Annexes: Fire, Structural, Building Services or Facades. The assessment will be a Professional Review as described on page 19. Successful candidates whose applications are approved by the Licensee's responsible committee will be admitted to the HRB Register in addition to their existing Principal registration on payment of the initial HRB registration fee.

A non-registrant Licensee member/non-member (red and yellow route)

A non-registrant could apply for either of these two options:

1. HRB and Principal registration – non-registrants who are eligible via their membership of a Licensee may request both HRB and Principal registration. Applicants will be assessed against the core UK-SPEC HRB competences or those of the Fire, Structural, Building Services or Facades Discipline Annexes, along with any Licensee discipline-specific competences for Principal registration. The assessment will be a Professional Review. Successful applicants approved by the Licensee's responsible committee will be admitted to both the Principal and HRB Registers upon payment of the Principal and HRB initial registration fees.

2. HRB registration only – non-registrants who are eligible via their membership of a Licensee may request HRB registration only. Applicants will be assessed against the core UK-SPEC HRB competences or those of the Fire, Structural, Building Services or Facades Discipline Annexes. The process is similar to option 1; however, upon payment of the HRB initial registration fee the registrant will be admitted to the HRB Register only.

A HRB registrant applying for Principal registration

As UK-SPEC HRB fully meets the requirements of UK-SPEC, no further assessment is required for admission to the Principal Register, though the registrant may need to demonstrate that they meet any additional discipline-specific requirements of a Licensee. Successful applicants approved by the Licensee's responsible committee (if an assessment is required by the Licensee) will be admitted to the Principal Register in addition to their existing HRB registration upon payment of the initial Principal registration fee.

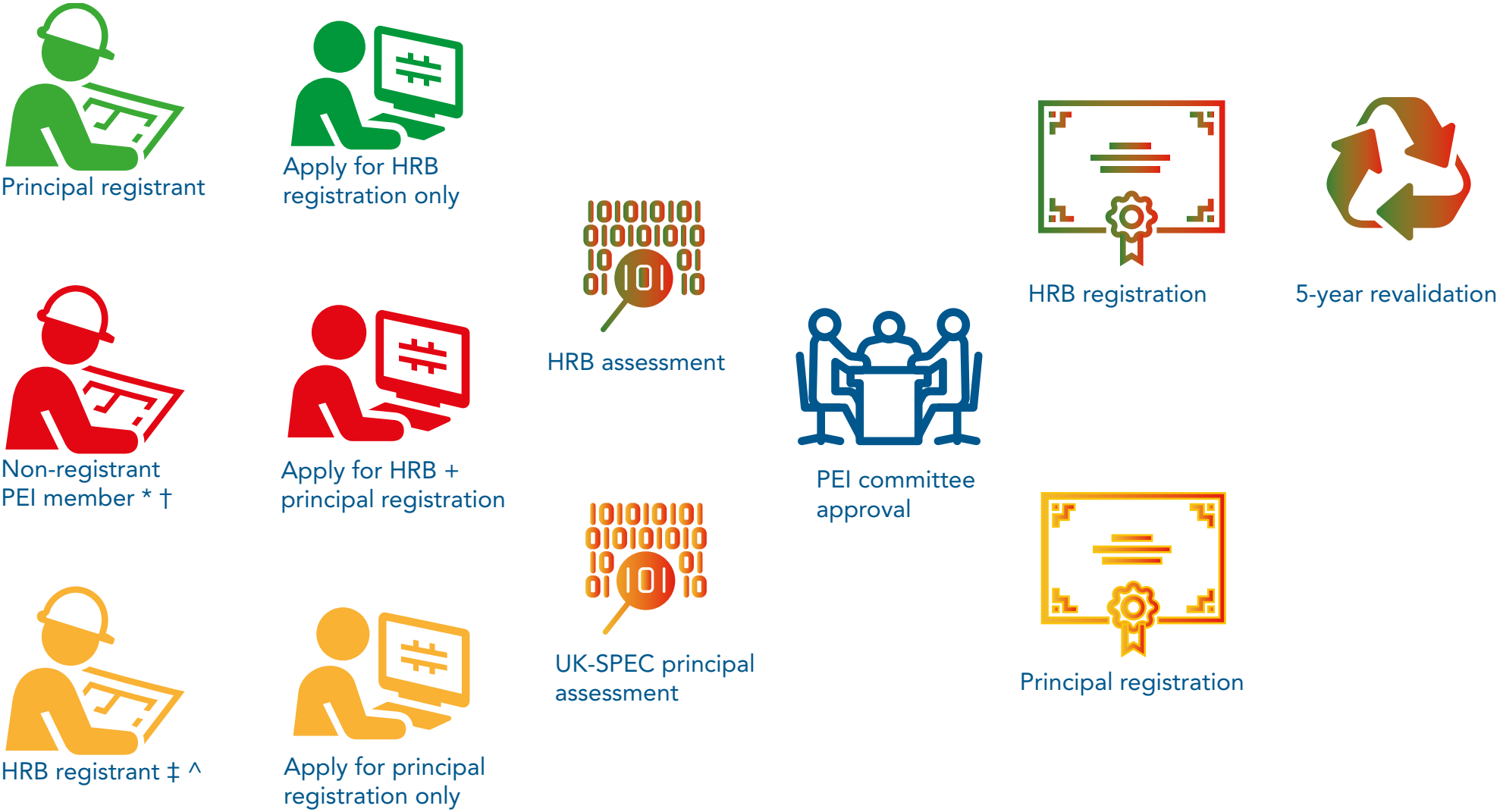
Discipline Annexes

Additional competence tables have been developed to be used alongside UK-SPEC HRB for assessment of discipline-specific criteria. Applicants can be assessed against the core competences as set out in this document, and/or the competences detailed in the four Discipline Annexes:

- Fire Engineering
- Structural Engineering
- Building Services Engineering
- Facades Engineering

The Annexes are available as separate documents to download at: www.engc.org.uk/uk-spec-hrb

Figure 1: Routes to HRB registration



* If not already a member of a Licensee, the Licensee assesses for membership, and also competence for registration using UK-SPEC HRB

† A non-registrant could opt to apply for HRB/Principal or both

‡ The HRB registrant would have already been assessed for UK-SPEC HRB and opted to join the HRB Register only

^ No further assessment is required for admission to the Principal Register, subject to meeting any additional discipline-specific requirements of a Licensee

Discipline-specific requirements

A Licensee may have additional discipline-specific requirements where:

- The Licensee's discipline-specific Standard for Principal registration, derived from UK-SPEC, includes requirements not covered by UK-SPEC HRB, such as demonstration of competence in other regulatory, disciplinary, occupational or environmental contexts (eg a Chartered Engineer (CEng) may need to demonstrate competence to work on bridges which would not be covered by UK-SPEC HRB).
- The HRB registrant is applying to a different Licensee for Principal registration with varying discipline-specific membership requirements.

Meeting the requirements for registration

Knowledge, understanding and skills form an essential part of competence. This provides the necessary foundation of underpinning logic and analytical capabilities. Knowledge, understanding and skills ensure that decisions are based on a full understanding of engineering practices and standards, rather than relying on instructions.

Formal education is one way of demonstrating the necessary underpinning knowledge and understanding (see Recognised Qualifications, pages 16–17), but it is not the only way (see Individual Assessment, page 18).

Figure 2: Assessment process

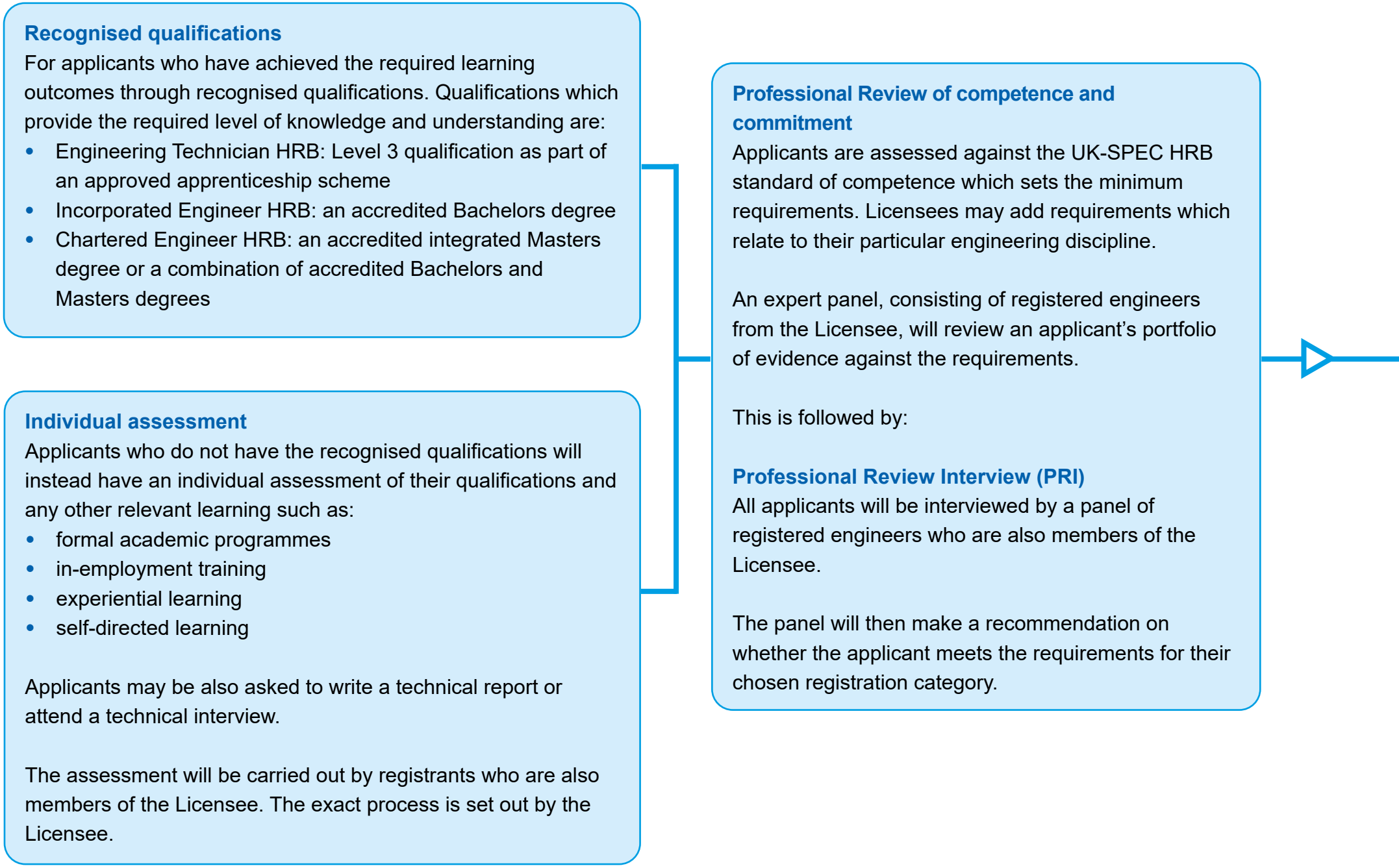


Figure 2 (continued)

Professional registration

The recommendation from the Professional Review is reviewed by the Licensee's relevant committee. The applicant will achieve professional registration if:

- The expert panel recommends that the applicant has met the requirements
- All are satisfied that all stages of the process have been completed, and
- The Licensee's relevant committee endorses the recommendation.

The applicant then becomes a registrant and is able to use the relevant post-nominal.

As a condition of continued registration, the individual commits to:

- Maintain their competence through CPD and membership of their Licensee, and
- Adhere to their Licensee's Code of Professional Conduct.

If an applicant has been unsuccessful the Licensee will provide some guidance on what further learning and/or competence development would be beneficial to achieve registration.

When all the above steps are completed to the satisfaction of the Licensee's relevant committee, the applicant achieves professional registration. They commit to maintain their CPD and membership of their Licensee and to adhere to their Licensee's Code of Professional Conduct.

Recognised qualifications

The underpinning knowledge and understanding for each registration category can be developed from recognised qualifications that deliver the appropriate learning outcomes.

The recognised qualifications for each registration category are set out in Table 2. The learning outcomes are set out in detail in the Engineering Council publications Accreditation of Higher Education Programmes (AHEP) and the Approval and Accreditation of Qualifications and Apprenticeships (AAQA) Standards.
See: www.engc.org.uk/standards

Table 2: Recognised qualifications

Engineering Technician HRB One of the following:	**Incorporated Engineer HRB** One of the following:	**Chartered Engineer HRB** One of the following:

• Successful completion of an apprenticeship or other work-based learning programme approved by a Licensee
• Alongside appropriate working experience, holding a qualification, approved by a Licensee, in engineering or construction set at either:
  ▸ level 3 (or above) in the Regulated Qualifications Framework or National Qualifications Framework for England and Northern Ireland
  ▸ level 6 (or above) in the Scottish Credit and Qualifications Framework
  ▸ level 3 (or above) in the Credit and Qualifications Framework for Wales
• Alongside appropriate working experience, holding equivalent qualifications or apprenticeships accredited or approved by a Licensee, or at an equivalent level in a relevant national or international qualifications framework
	• An accredited Bachelors or honours degree in engineering or technology
	• An accredited Higher National Certificate (HNC) or Higher National Diploma (HND) in engineering or technology started before September 1999
	• An HNC or HND started after September 1999 (but before September 2010 in the case of the HNC) or a Foundation Degree in engineering or technology, plus appropriate further learning to degree level
	• A National Vocational Qualification (NVQ) or Scottish Vocational Qualification (SVQ) at level 4 that has been approved by a Licensee, plus appropriate further learning to degree level
	• Equivalent qualifications or apprenticeships accredited or approved by a Licensee, or at an equivalent level in a relevant national or international qualifications framework
		• An accredited Bachelors degree with honours in engineering or technology, plus either an appropriate Masters degree or engineering doctorate accredited by a Licensee, or appropriate further learning to Masters level
		• An accredited integrated MEng degree
		• An accredited Bachelors degree with honours in engineering or technology started before September 1999
		• Equivalent qualifications or apprenticeships accredited or approved by a Licensee, or at an equivalent level in a relevant national or international qualifications framework

The Engineering Council maintains a publicly accessible recognised course search database, which is available at: www.engc.org.uk/courses

Individual assessment

Many potential registrants have not had formal training to the required level but are able to demonstrate they have acquired the necessary underpinning knowledge through substantial work experience. Applicants who have acquired their underpinning knowledge and understanding through experiential learning or other qualifications can submit the relevant information to their Licensee for an initial assessment.

This process includes assessment of the applicant's prior learning and underpinning knowledge needed to successfully perform their role. Applicants should submit information covering their education, career history and training record. It may also be helpful for applicants to include evidence of employer recognition of their competences and relevant skills.

If the Licensee considers, after this initial assessment, that it needs additional evidence of knowledge and understanding it will advise the applicant on the nature and extent of this. An applicant can demonstrate knowledge and understanding in a number of ways, such as:

- Successfully completing further qualifications, either in whole or in part
- Providing a record of having completed work-based or experiential learning
- Writing a technical report, based on experience, which demonstrates the applicant's knowledge and understanding of engineering principles, or
- Any combination of these.

Preparing for registration

Pages 23–117 of this document set out the competence and commitment Standards for registration as an Engineering Technician HRB, Incorporated Engineer HRB or Chartered Engineer HRB. Engineers seeking registration should review the competence and commitment statements and use the examples to help them identify where they already have an appropriate level of competence, as well as what evidence they can present to demonstrate this. They should also identify areas where they currently lack the appropriate competence, in order to formulate plans to develop to the required level.

Pages 23–117 also include some examples of the kind of evidence which would contribute to demonstrating competence and commitment to the required Standards. However, the list of examples is only for guidance; it is not exhaustive, and the examples are not requirements for achieving professional registration.

For all categories, those seeking registration after completing their early career training should present a detailed record of their professional development, responsibilities and experience. To enable applicants to provide the best evidence for the Professional Review, this record should be verified by supervisors or mentors.

Professional Review: assessing competence and commitment

To become professionally registered, applicants must have their competence and commitment assessed through a Professional Review, overseen by the Licensee. This peer review process is carried out by registrants who are competent and trained to carry out this kind of assessment.

Applicants are assessed against the Standards listed in pages 23–117 of this document, which may be adapted by the Licensee to relate specifically to the particular technologies or industries it is concerned with. There is no prescribed time period or minimum age requirement for the development of competence and commitment. The length of time it takes depends on many factors such as a person's prior qualifications or experience, their job role, as well as personal circumstances such as career breaks or part time working.

Scrutiny of qualifications

The first stage of the Professional Review is an assessment of the documented evidence which the applicant has submitted. The applicant's Licensee will specify the requirements for this submission. The Licensee will examine the examples of evidence and assess how they meet the underpinning knowledge, understanding and competence requirements.

Applicants will need to submit evidence in support of their application such as their:

- Educational record and qualifications
- Professional qualifications awarded by other national, regional or international authorities
- Structured or other professional development
- Areas of responsibility, management and leadership
- Evidence of effective interpersonal skills
- A plan for future professional development

Professional Review

After the submitted evidence has been reviewed, the Licensee will decide whether the applicant is ready to proceed to Professional Review. The Licensee will be able to advise applicants how to best present their evidence of training and experience. If there are shortfalls in evidence, Licensees will usually be able to suggest ways in which the applicant can address them. This may involve further learning, training or additional experience.

Once the submitted evidence has been accepted as a basis for the review, the next stage is a Professional Review Interview (PRI). This is mandatory for all applicants.

When the Professional Review has been completed, the peer reviewers will make a recommendation to the Licensee's designated committee. The committee will then make a decision on whether the applicant has demonstrated that they meet the required standards. A positive decision will result in registration of the applicant as an Engineering Technician HRB, Incorporated Engineer HRB or Chartered Engineer HRB. Where the applicant has been unsuccessful the Licensee will provide feedback to help the applicant overcome any shortfalls in competence.

Retention of the title requires:

- Continued membership of either:
  - a Licensee licensed for that title or
  - a Professional Affiliate which has a registration agreement with a Licensee licensed for that title,
- Payment of an annual fee
- Undertaking and recording Continuing Professional Development (CPD): see page 118
- Revalidation of competence against UK-SPEC HRB every five years as a minimum: see page 20

Maintaining Registration (revalidation of competence)

Revalidation

The recommendation to periodically revalidate the competence levels of UK-SPEC HRB registrants was set out in the Building a Safer Future Report:

To ensure greater robustness in levels of competence, […] competence levels should be reassessed and reaccredited on a defined periodic basis.

This recommendation was later reinforced in the Setting the Bar Report:

Recommendation 19:

Assessment and revalidation for engineers

- The Engineering register should incorporate the contextualised standards requiring assessment and re-validation based on the identified levels of higher-risk buildings […].

- Revalidation is also recommended as a core requirement for building safety competence in BS 8670: Built Environment
- Registrants must revalidate their UK-SPEC HRB registration at least every five years to maintain HRB registration
- If not renewed five years after initial registration or last revalidation, a registrant's entry on the HRB Register will lapse; though any entry on the Principal Register would not be affected
- Registrants are encouraged to contact their Licensee in suitable time ahead of their next UK-SPEC HRB revalidation to begin the process
- The UK-SPEC HRB revalidation process assesses registrants against the same competences as initial UK-SPEC HRB registration, covering the same competence groups [AA-EE].
- Registrants seeking revalidation will be asked to submit a portfolio of evidence demonstrating that they have maintained their knowledge, understanding, and competence relevant to their work on higher-risk buildings
- Registrants are encouraged to record evidence of the maintenance and enhancement of their higher-risk building engineering practice during each five-year HRB registration period, as this will simplify the revalidation process
- This portfolio may re-use historical evidence of underpinning knowledge and understanding submitted for their initial HRB registration assessment or previous revalidations; but evidence of ongoing competence must cover the period of practice since registration or most recent revalidation only (typically the five-year period prior to revalidation)
- The portfolio of evidence should include a continuing professional development (CPD) record specific to HRB competence, showing any structured or unstructured learning and development during the five years since initial HRB registration assessment or last revalidation
- The CPD record must show evidence that the registrant has planned, recorded, and reflected upon the efficacy of their learning and development specific to HRB practice

Revalidation interviews

Registrants whose portfolios are considered to marginally satisfy the requirements of UK-SPEC HRB competences AA-EE will be invited to attend an interview. In addition, a proportion of registrants whose portfolios do show all the required evidence will also be interviewed, as a quality control measure. Therefore, all UK-SPEC HRB revalidation registrants should be prepared to be invited to interview as part of the revalidation process. The reason for the interview will not be disclosed.

Revalidation application outcomes

A registrant can expect one of two outcomes from their revalidation application:

1. Confirmation that competence has been met against UK-SPEC HRB and the registrant has been revalidated and retained on the HRB Register.
2. Removal/lapsing from the Register where ongoing competence is not evidenced, or where there is evidence of significant concerns as to that registrant's competence, and any shortfall cannot be reasonably expected to be addressed through compensatory measures within a reasonable time scale.

The Engineering Technician HRB Standard

Engineering Technicians HRB apply proven techniques and procedures to the solution of practical engineering problems.

Engineering Technicians HRB shall demonstrate:

- Engineering knowledge and understanding to apply technical and practical skills
- Evidence of their contribution to the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services
- Supervisory or technical responsibility
- Effective interpersonal skills in communicating technical matters
- The ability to operate in accordance with safe systems of work and to demonstrate appropriate understanding of the principles of sustainability
- Commitment to professional engineering values

An Engineering Technician on the HRB Register will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the context, nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (AA1–EE5), at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in those areas of limited experience as a minimum requirement, while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Engineering Technician level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Engineering Technician HRB registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks would be useful.

† Candidates must show they meet all the competences, however, it is not expected that applicants will necessarily meet all the listed HRB-specific criteria. They will be expected to demonstrate competence against a substantial proportion of the scope, using a variety of sources and types of evidence, wherever this is relevant to their role. As part of their continuing professional development (CPD), successful applicants have an obligation to remain alert to any changes in their role or responsibilities and ensure the appropriate underpinning knowledge and understanding are updated accordingly. This is applicable throughout the document where “wherever relevant, applicants shall demonstrate the ability to:” is mentioned.

Applicants shall provide evidence from the HRB-specific criteria when developing their portfolio across the AA1-EE5 competences. Licensees’ Professional Review assessors may request further evidence across any or all of the criteria.

Competence		Scope	
AA. Knowledge and understanding **Engineering Technicians shall use engineering knowledge and understanding to apply technical and practical skills.** This competence is about having knowledge of fire, structural and life safety, legislation, technologies, standards and practices relevant to higher-risk buildings (HRBs) and having evidence of maintaining and applying this knowledge.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Review and select appropriate fire, structural and building life safety systems and principles throughout the building life cycle of HRBs*.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others	• Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Evaluating potential methods of carrying out an engineering task and selecting the most appropriate solution • Recognising a difficulty and then identifying an approach to resolve it • Identifying an improvement in a technique, procedure, process or method • Interpreting and carrying out test procedures	**Applicants shall demonstrate underpinning knowledge and understanding of:** • The building as a system and how the technical interfaces contribute to the functionality and safety of the building and its occupants / residents • The interrelationship of design and specification with fire performance • Key features and principles of passive and active protection (including suppression systems) **Wherever relevant, applicants shall demonstrate the ability† to:** • Apply relevant fire safety principles and practices in the engineering of HRBs • Apply fundamental knowledge of fire science, (including key aspects of the fire performance of materials) in the engineering and specification of HRBs • Integrate key principles of human behaviour and fire escape design into the engineering and arrangement of escape provision in HRBs • Integrate and coordinate relevant passive and active fire protection systems into the engineering components of HRBs • Integrate and coordinate compartmentation and structural fire protection into the engineering of HRBs, with particular reference to measures which prevent the spread of flame and smoke • Integrate and coordinate fire-fighting access requirements and provision of fire-fighting facilities into the engineering design and layout of HRBs • Integrate new engineering approaches, theories or techniques into engineering practice while ensuring safe outcomes * See Glossary: ‘building life cycle’ † See p5

Competence		Scope	
AA. Knowledge and understanding	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Use appropriate scientific, technical, engineering and information management principles to integrate fire, structural and building life safety systems throughout the building life cycle of HRBs.	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Collaboration and system integration	• Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria

• Conducting technical research and development across all aspects of development / design / application / integration of HRB fire safety, structural and building life safety systems
• Developing systems and processes for the design / application / integration of HRB fire safety, structural and building life safety systems and considering new or evolving technology
• Conducting complex and / or non-standard technical analyses on the development / design / application / integration of HRB fire safety, structural and building life safety systems.
• Developing solutions involving complex or multidisciplinary technology in relation to HRB fire safety, structural and building life safety systems
• Developing and evaluating continuous improvement systems on HRB fire safety, structural and building life safety systems, including any related life critical sub-systems
	Applicants shall demonstrate underpinning knowledge and understanding of:
	• The process by which different aspects of building safety should be successfully integrated for all life safety components during the life cycle of the HRB
	• The critical safety engineering principles relevant to structure, public health and building services
	• Fire, building services, life safety and structural engineering principles relevant to maintaining the integrity of the building fire strategy
	• The benefits of multi-disciplinary and multi-organisational collaboration in achieving a well performing and safe HRB
	
	Wherever relevant, applicants shall demonstrate the ability to:
	• Evaluate and integrate new technology safely into the engineering design of HRBs, considering:
	  ▸ Building life cycle
	  ▸ Buildability
	  ▸ Maintenance and refurbishment
	• Map out and execute the interfaces of all life safety components throughout the life cycle of the HRB
	• Recognise when advice from others including specialist professionals is needed, obtain this, and ensure it is integrated effectively into the engineering design of the HRB
	• Co-ordinate the engineering, specification and assessment of building fabric including where necessary commissioning, collaborating with, and integrating the work of other specialist building professionals to achieve safe performance throughout the building life cycle
	• Integrate new engineering approaches, theories or techniques into engineering practice while ensuring safe outcomes
	• Undertake statistically sound appraisal of data to underpin safe engineering outcomes
	• Understand original design intent and principles and maintain these when making minor or major modifications to an HRB

Competence		Scope	
BB. Design, development and solving engineering problems **Engineering Technicians shall contribute to the design, development, manufacture, construction, commissioning, decommissioning, operation or maintenance of products, equipment, processes, systems or services in relation to HRBs.** This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Identify problems and apply appropriate theoretical and practical methods to design, construct, commission, operate, maintain, decommission and recycle building engineering processes, systems, services and product, in order to comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs	Construction legislation relevant to higher-risk buildings (HRBs) including: **Construction Legislation** • The Building Act 1984 • The Building Safety Act 2022 and Regulations • Building regulations • Approved documents • Approved Document 7: Materials and Workmanship • Building regulations (procedural) • Local acts / enactments • Government communications / circular letters • Sustainable and Secure Buildings Act 2004 • Regulatory Reform (Fire Safety) Order 2005 • Construction (Design and Management) Regulations 2007 • Management of Health and Safety at Work Regulations • Health and Safety at Work Act 1974 • Gas Safety (Installation and Use) Regulations 1998	• Relevant case law • Contract law **Related Guidance** Authoritative guidance as typically published by institutions, industry bodies and individuals including Collaborative Reporting for Safer Structures UK (CROSS-UK). • Royal Institute of British Architects (RIBA) plan of work • Building Services Research and Information Association (BSRIA) plan of work • Civil, criminal, and case law • Contract law • Law of agency • Employment law • The Housing Acts 1985,1988, 1996, 2004 • Housing Health and Safety Rating System • Equalities Act 2010 • Town and Country Planning Act 1990 • Housing and Regeneration Act 2008 • Licensing legislation

Examples of evidence	HRB specific criteria
• Identifying projects (for technical improvements to products, processes, or systems that are needed to undertake an engineering task within the development / design / application / integration) in regard to HRB fire safety, structural and building life safety systems • Preparing specifications on the development / design / application / integration of HRB fire safety, structural and building life safety system, and taking account of functional and other requirements • Establishing user requirements for improvements in HRB fire safety, structural and building life safety systems • Reviewing specifications and tenders to identify technical issues and potential improvements, with specific focus on elements concerning the development / design / application / integration of HRB fire safety, structural and building life safety systems. These reviews must also consider, contribute, and innovate towards the continuation of the golden thread of information • Conducting technical risk analysis on HRB fire safety, structural and building life safety systems, and identifying mitigation measures • Considering and implementing new and emerging technologies within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • The respective responsibilities of roles specified in the regulations and the relationship of their own role to that of the duty holder and other professions, trades or engineering disciplines Wherever relevant, applicants shall demonstrate the ability to: • Meet or exceed requirements set out in relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • Recognise how the statutory or legal requirements of other roles relate to the role of the engineer where these could impact on building safety • Advise others on what needs to be done to comply with relevant statutory requirements

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Identify, organise and apply relevant standards, testing, assessment, site inspection and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle of HRBs.	• British and international product standards • Testing standards, procedures, and interpretation of results • Good practice specification • Product characteristics and performance • System, component or assembly testing and performance • Prototyping / sample panel and testing • Maintenance requirements • Maintenance testing and commissioning of building systems and services

Examples of evidence	HRB specific criteria
• Ensuring that the application of the design within HRB fire safety, structural and building life safety systems, results in the appropriate practical outcome • Implementing design solutions and taking account of critical constraints. This includes due concern for safety, sustainability, and disposal or decommissioning, within HRB fire safety, structural and building life safety systems • Identifying and implementing lessons learned • Evaluating existing designs or processes within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying faults or potential improvements including risk and life cycle considerations • Actively learning from feedback to improve future design solutions and establish best practice within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant standards, testing, assessment and maintenance procedures for building materials, products, components, assemblies and systems • Methods and practice of building maintenance Wherever relevant, applicants shall demonstrate the ability to: • Apply this underpinning knowledge and understanding effectively as part of the engineering process to ensure safety throughout the building life cycle of HRBs • Apply this underpinning knowledge and understanding, ensuring the building performs safely as a system • Conduct testing and verify quality and suitability of delivered / procured products and materials

Competence		Scope	
CC. Responsibility, management and leadership **Engineering Technicians shall accept and exercise personal responsibility.** This competence is about the ability to plan and manage the applicant's own work effectively and efficiently. It is also about the ability to consider and identify improvements to maintain quality in their HRB work.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1a. Work reliably and effectively without close supervision, to contribute to or fulfil roles, responsibilities and duties relating to HRBs	• Duties and responsibilities of key roles / duty holders including client, contractor, building owner / manager, building safety manager, occupant / resident • Joint Competent Authority (JCA) / Regulator • Overarching competence body • Local authority • Relevant statutory regulators • Profession / trade regulators • Fire and rescue services • Through-life management and maintenance **Understanding of** • Golden thread of building information • Safety management systems • Safety cases • Health and safety files • Fire and Emergency Files • Design / construction, as-built / as-maintained information • Building safety strategies • Building maintenance information and scheduling	• Testing and commissioning information • Life cycle and replacement data • Building installer / constructor / maintainer competence requirements • Regulation 38 of the Building Control requirements • HRB records and certificates • As-built information • Building Information Modelling (BIM)

Examples of evidence	HRB specific criteria
• Completing challenging tasks successfully within your area of work • Identifying issues which fall outside of your current knowledge and seeking advice • Identifying standards and codes of practice relevant to a new task	**Wherever relevant, applicants shall demonstrate underpinning knowledge and understanding of:** • How to explain and comply with the duties of an engineer in relation to HRBs • How to explain the roles and responsibilities of other key duty holders and their interactions with the role of an engineer working on HRBs • How to work effectively with other key duty holders • How to act as, or engage effectively with, the Principal Designer or Principal Contractor of an HRB • Integration of management and maintenance criteria in regards to engineering activities to ensure safe outcomes throughout the building life cycle of HRBs • Challenging others where duties are not being effectively met **Wherever relevant, applicants shall demonstrate the ability to:** • Create, maintain or use all documents (and their content) to ensure HRB safety • Competence and needs of building safety managers and owners

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1b. Use appropriate information management principles to manage, distribute and maintain information which is critical to ensuring that HRBs are built, operated and maintained to be safe throughout the building life cycle	• As 1a
	2. Challenge unacceptable behaviour or practice or where duties are not being effectively met. Raise, report, escalate or flag risks to safety with managers and duty holders	• Whistleblowing policies • Public Interest Disclosure Act 1998 • Public duty to report • Public liabilities • Company or organisational reporting and escalation policies and procedures

Examples of evidence	HRB specific criteria
• As 1a	Applicants shall demonstrate underpinning knowledge and understanding of: • How to develop, manage, distribute and maintain information about the engineering of HRBs which is critical to ensuring that they are engineered to be safe, built to be safe, operated safely and maintained to be safe throughout the building life cycle • How to develop and communicate clearly expressed engineering strategies to meet building safety requirements • How to comply with requirements to prepare and submit relevant documentation as part of the safety management system, safety case, Fire and Emergency File or Health and Safety plan • How to utilise suitable information management tools to ensure accurate design and as-built information are developed and issued • How to manage changes to engineering information in order to ensure an accurate set of as-built information is available at key gateway stages • How to identify what information is needed from other parties and understand and apply that information where relevant to the role of the engineer, including operation and management documents required to operate the building safely
• Fully understanding drawings, permits to work, instructions or other similar documents after appropriate checking, and identifying issues • Inspecting work carried out by others • Checking the status of equipment, the work environment and facilities and taking appropriate actions before commencing work	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with professional and ethical duties to raise concerns relating to public safety • Effectively raise safety concerns with colleagues and where necessary escalate these concerns through management chains • Identify if and when it is necessary to utilise whistleblowing procedures under the Public Interest Disclosure Act and how to do so • Explain and act on any other duties to raise concerns about life safety within an HRB

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3a. Effectively supervise or work within competent project teams which include duty holders, to ensure safe outcomes. Maintain appropriate project and control documentation	• Project management and control • Sequencing of work • Assembling and appointing teams • Effective management practice / procedures for engineering of HRBs

Examples of evidence	HRB specific criteria
• Ensuring that the scope of a task is clear before accepting and/or allocating it to others • Querying any aspect of a task which is not clear and/or providing an explanation if a query is raised by others • Learning from your own experience and/ or providing constructive feedback when supervising or working with others	**Applicants shall demonstrate underpinning knowledge and understanding of:** • What competence frameworks and qualifications exist • Change management and change control techniques • Quality management techniques **Wherever relevant, applicants shall demonstrate the ability to:** • Integrate requirements for building safety into project planning and management activities • Assess the additional competence required within engineering or project teams and ensure suitable expertise is procured • Apply quality management, control or audit procedures in order verify that building safety measures have been carried out • Explain and comply with relevant procedural requirements, submissions and processes • Create and maintain appropriate project and control documentation • Establish quality criteria for engineering work and objectively evaluate outcomes against those criteria • Complete competence self-assessment records and learn from that process; show examples of quality assurance or management procedures to ensure competence of self / staff / specialists or other organisations • Use competence scoring or assessment techniques; involving competence assessment of individuals

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3b. Recognise the limits of competence of self and others. Identify when to seek advice from more competent people and use appropriate evidence and experience in the management of soft hazards	**People** • Competence and resource **Process** • Understanding, validation and communication of assumptions • Flow-through of information • Specialist, Analysis and Software tool validation and verification • Conceptual design review, checking and peer review • Responsibility for the design when split between more than one designer • Single point of responsibility • Change control • Site inspection / monitoring **Product** • Checks on product origin, certification and compliance

Examples of evidence	HRB specific criteria
• As 3a	Wherever relevant, applicants shall demonstrate the ability to: • Identify limits of competence of individuals or organisations involved in the engineering, construction or maintenance of HRBs • Identify suitable mitigating actions to manage risk • Explain what competence is and how this relates to building safety • Identify when and how to assess, or request evidence of competence from, other project team members • Explain and comply with duties to ensure competence relating to the engineering of HRBs • Identify the need to seek advice from others with specialist competences and how to procure that advice • Effectively raise concerns about the competence of individuals or organisations if this is of concern • Mitigate any residual risk relating to competence

Competence		Scope
DD. Communication and interpersonal skills **Engineering Technicians shall use effective communication and interpersonal skills.** This is the ability to work with all stakeholders appropriately and constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Communicate effectively with occupants / residents, the public and with others, orally and in writing	• Requirements / obligations to communicate, consult with and respond to occupants / residents or people otherwise affected by buildings / building work • Communication through media relevant to role (orally, written text or drawn) • Communication of technical complex information to non-technical audiences • Effective communication within project and client teams
	2. Work effectively with colleagues, clients, suppliers or the public	• Effective working applicable across the building life cycle of HRBs
	3. Demonstrate personal and social skills and awareness of diversity and inclusion issues	• Personal and social skills applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Contributing to meetings and discussions • Preparing communications, documents and reports on technical matters • Exchanging information and providing advice to technical and non-technical colleagues	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with duties to communicate with clients, occupants / residents and other people or organisations involved in, or affected by, projects on HRBs • Write reports, letters, email or give presentations in a manner which can be clearly understood by non-technical people • Clearly identify and effectively communicate responsibilities and issues relating to HRB safety within design, engineering or project teams • Explain complex technical issues to non-technical audiences • Promote and actively engage in collaborative working across disciplines • Understand challenges and requirements of other disciplines • Read and understand technical documents / drawings and convey details to others • Be inclusive, promote and welcome diversity of thought / ideas • Write clear guidance for end users
• Contributing constructively as part of a team • Successfully resolving issues in discussions with team members, suppliers, clients and/or others • Persuading others to accept suggestions or recommendations • Identifying, agreeing and working towards collective goals	Applicants shall demonstrate underpinning knowledge and understanding of: • Principles and value of competence • Competence assessment techniques • Roles and responsibilities for advising on and ensuring competence • Procurement and management of specialist competence • Managing residual risk
• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion	

Competence		Scope
EE. Personal and professional commitment **Engineering Technicians shall demonstrate commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.** This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with all stakeholders. An Engineering Technician should set a standard and example to others with regard to professionalism.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Demonstrate understanding of ethical considerations relating to the occupants / residents of HRBs and apply these to self and others in practice	• Obligation to consult / listen to the occupant / resident's voice • Duty of care to occupants / residents • Consideration of diversity and inclusion including differential needs eg emergency egress • Adhering to codes of conduct
	2a. Demonstrate understanding of ethical considerations relating to the occupants / residents of HRBs and apply these to self and others in practice	• Legislation and guidance that applies to HRBs (referencing examples in the scope of BB1) • Demonstration of the principles underpinning the Setting the Bar report to improve competence and drive culture change

Examples of evidence	HRB specific criteria
• Demonstrating compliance with your Licensee's Code of Professional Conduct • Working within all relevant legislative and regulatory frameworks, including social and employment legislation	Applicants shall demonstrate underpinning knowledge and understanding of: • Specific ethical principles in engineering practice • How to act with honesty, accuracy, respect, integrity, responsibility, and within the limits of their capability in order to build trust • Respect concerns and issues raised by occupants / residents and respond appropriately • Apply duty of care to occupants / residents and people living or working in and around buildings • Take account of the different needs of older and disabled people in accessing, and ability to escape from, HRBs • Act in accordance with professional or company Code of Conduct • Act in accordance with the Royal Academy of Engineering and the Engineering Council's joint Statement of Ethical Principles, available on the Engineering Council website: https://www.engc.org.uk/ethics
• Providing evidence of applying current safety requirements, such as risk assessment and other examples of good practice you adopt in your work • A sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • The respective responsibilities of roles specified in regulations and the relationship of their own role to that of the duty holder and other professions, trades or engineering disciplines Wherever relevant, applicants shall demonstrate the ability to: • Meet or exceed requirements set out in relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • Recognise how the statutory or legal requirements of other roles relate to the role of the engineer where these could impact on building safety • Advise others on what needs to be done to comply with relevant statutory requirements

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2b. Understand the risks relevant to HRBs and contribute to risk management frameworks and safe systems of work	• Definition of HRB • Critical risk factors in HRBs • Safety case development • Safety case review • Fire risk strategy • Construction (Design and Management) Regulations 2015 • Health and safety file • Harmful materials • Control of Substances Hazardous to Health (COSHH) regulations • Building management and maintenance for building and occupant / resident safety
	2c. Understand statutory processes and procedures applicable to HRBs	• Gateway process and stages for HRBs • Role of the Joint Competent Authority (JCA) • Listening to the occupant / resident's voice and associated engagement

Examples of evidence	HRB specific criteria
• As 2a	Applicants shall demonstrate underpinning knowledge and understanding of: • How and why HRBs are defined and the relevance to engineering activities • The importance and purposes of safety management systems • Hazard identification and risk assessment methodologies • The specific engineering risks relevant to each type of HRB, including typical critical modes of failure and consideration of maintenance and replacement cycles • How these risks should be managed through the design process, including through commissioning or undertaking of work by other specialist people Wherever relevant, applicants shall demonstrate the ability to: • Contribute to, and work with, safety management systems for HRBs • Lead or contribute to the development, modification and management of the safety case • Lead, carry out or contribute to hazard identification and risk assessment • Execute their duties and responsibilities in accordance with the safety case
• As 2a	Applicants shall demonstrate underpinning knowledge and understanding of: • Statutory processes and procedures • Occupant / resident engagement channels Wherever relevant, applicants shall demonstrate the ability to: • Advise clients, project team members and others on duties and procedural requirements relating to the engineering of an HRB • Comply with relevant engineering development activities in order to demonstrate compliance with building safety requirements to the JCA at differing gateway stages • Engage positively with the JCA and its constituent bodies • Engage and communicate with occupants / residents and the public

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Understand the principles of sustainable development and apply them in their work	• Sustainable development considerations applicable across the building life cycle of HRBs
	4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in HRBs	• CPD applicable across the building life cycle of all HRBs
	5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner	• Ethical considerations applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Recognising how sustainability principles, as described in the Guidance on Sustainability, can be applied in your day-to-day work. This is available on the Engineering Council website: www.engc.org.uk/sustainability • Identifying actions that you can and have taken to improve sustainability	
• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out and recording planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD	Wherever relevant, applicants shall demonstrate the ability to: • Assess the limits of their own competence in relation to the work being undertaken • Identify their own personal development needs and put in place a suitable personal development plan including CPD relevant to HRBs • Engage with a peer review / assessment and feedback process to obtain an external perspective on competence and areas for improvement • Identify the limit of competence of colleagues and take action to assess and manage the development of team members and support improvement where necessary
• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles available on the Engineering Council website: www.engc.org.uk/ethics • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company	

The Incorporated Engineer HRB Standard

Incorporated Engineers HRB maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation.

Incorporated Engineers HRB shall demonstrate:

- The theoretical knowledge to solve problems in established technologies using well-proven analytical techniques
- Successful application of the knowledge to deliver engineering tasks or services using established technologies and methods
- Contribution to the financial and planning aspects of projects or tasks and contribution to leading and developing other professional staff
- Effective interpersonal skills in communicating technical matters
- The ability to specify and operate to safe systems of work and to demonstrate appropriate consideration of the principles of sustainability
- Commitment to professional engineering values

An Incorporated Engineer on the HRB Register will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (AA1–EE5) at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they must demonstrate an appropriate balance of competences to perform their role effectively at Incorporated Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Incorporated Engineer HRB registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks would be useful.

† Candidates must show they meet all the competences, however, it is not expected that applicants will necessarily meet all the listed HRB-specific criteria. They will be expected to demonstrate competence against a substantial proportion of the scope, using a variety of sources and types of evidence, wherever this is relevant to their role. As part of their continuing professional development (CPD), successful applicants have an obligation to remain alert to any changes in their role or responsibilities and ensure the appropriate underpinning knowledge and understanding are updated accordingly. This is applicable throughout the document where “wherever relevant, applicants shall demonstrate the ability to:” is mentioned.

Applicants shall provide evidence from the HRB-specific criteria when developing their portfolio across the AA1-EE5 competences. Licensees’ Professional Review assessors may request further evidence across any or all of the criteria.

Competence		Scope	
AA. Knowledge and understanding **Incorporated Engineers shall use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.** This competence is about having knowledge of the technologies, standards and practices relevant to HRBs and the applicant's area of practice and having evidence of maintaining and applying this knowledge.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Maintain and extend a sound theoretical approach to the application of relevant fire, structural and building life safety systems, principles, and practices throughout the building life cycle of HRBs*	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others	• Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Formal training related to your role in the application of relevant fire, structural and building life safety systems, as well as the principles and practices that are important throughout the building life cycle of HRBs • Learning and developing the engineering knowledge needed to work in an industry area or discipline where the application of relevant fire, structural and building life safety systems, principles and practices are required • Understanding the current and emerging technology and technical best practice, principles and practices throughout the building life cycle of HRBs in the relevant fire, structural and building life safety systems • Developing a broader and deeper knowledge base through research and experimentation in the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Learning and developing new engineering theories and techniques on the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Recognising, consulting with, updating and applying the golden thread of information on any development / design / application / integration for HRB fire safety, structural and building life safety systems. This will include any related life critical sub-systems	**Applicants shall demonstrate underpinning knowledge and understanding of:** • The building as a system and how the technical interfaces contribute to the functionality and safety of the building and its occupants / residents • The interrelationship of design and specification with fire performance • Key features and principles of passive and active fire protection (including suppression systems) **Wherever relevant, applicants shall demonstrate the ability† to:** • Apply relevant fire safety principles and practices in the engineering of HRBs • Apply fundamental knowledge of fire science, (including key aspects of the fire performance of materials) in the engineering and specification of HRBs • Integrate key principles of human behaviour and fire escape design into the engineering and arrangement of escape provision in HRBs • Integrate and coordinate relevant passive and active fire protection systems into the engineering components of HRBs • Integrate and coordinate compartmentation and structural fire protection into the engineering of HRBs with particular reference to measures which prevent the spread of flame and smoke • Integrate and coordinate fire-fighting access requirements and provision of fire-fighting facilities into the engineering design and layout of HRBs • Integrate new engineering approaches, theories or techniques into engineering practice while ensuring safe outcomes * See Glossary: ‘building life cycle’ † See p30

Competence		Scope	
AA. Knowledge and understanding	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Use a sound evidence-based approach to problem solving to apply relevant principles and technical standards for fire, structural and building life safety systems throughout the building life cycle of HRBs, and support continuous improvement in building safety	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services	• Collaboration and system integration **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria

• Conducting technical research and development across all aspects of development / design / application / integration of HRB fire safety, structural and building life safety systems
• Developing systems and processes for the design / application / integration of HRB fire safety, structural and building life safety systems and considering new or evolving technology
• Conducting complex and / or non-standard technical analyses on the development / design / application / integration of HRB fire safety, structural and building life safety systems.
• Developing solutions involving complex or multidisciplinary technology in relation to HRB fire safety, structural and building life safety systems
• Developing and evaluating continuous improvement systems on HRB fire safety, structural and building life safety systems, including any related life critical sub-systems
	Applicants shall demonstrate underpinning knowledge and understanding of:
	• The process by which different aspects of building safety should be successfully integrated for all life safety components during the life cycle of the HRB
	• The critical safety engineering principles relevant to structure, public health and building services
	• Fire, building services, life safety and structural engineering principles relevant to maintaining the integrity of the building fire strategy
	• The benefits of multi-disciplinary and multi-organisational collaboration in achieving a well performing and safe HRB
	
	Wherever relevant, applicants shall demonstrate the ability to:
	• Evaluate and integrate new technology safely into the engineering design of HRBs taking into account:
	  ▸ Building life cycle
	  ▸ Buildability
	  ▸ Maintenance and refurbishment
	• Map out and execute the interfaces of all life safety components throughout the life cycle of the HRB
	• Recognise when advice from others including specialist professionals is needed, obtain this and ensure it is integrated effectively into the engineering design of the HRB
	• Co-ordinate the engineering, specification and assessment of building fabric including where necessary commissioning, collaborating with, and integrating the work of other specialist building professionals to achieve safe performance throughout the building life cycle
	• Integrate new engineering approaches, theories or techniques into engineering practice while ensuring safe outcomes.
	• Undertake statistically sound appraisal of data to underpin safe engineering outcomes
	• Understand original design intent and principles and maintain these when making minor or major modifications to an HRB

Competence		Scope	
BB. Design, development and solving engineering problems **Incorporated Engineers shall apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products.** This competence is about the ability to identify appropriate methods and approaches to use to undertake a task within their area of practice and to make a significant contribution to the development of a design or process or the maintenance of operations in relation to HRBs.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Identify, review and select appropriate techniques, procedures, and methods to design, construct, commission, operate, maintain, decommission and recycle building engineering processes, systems, services and products, in order to comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs	Construction legislation relevant to higher-risk buildings (HRBs) including: **Construction Legislation** • The Building Act 1984 • The Building Safety Act 2022 and Regulations • Building regulations • Approved documents • Approved Document 7: Materials and Workmanship • Building regulations (procedural) • Local acts / enactments • Government communications / circular letters • Sustainable and Secure Buildings Act 2004 • Regulatory Reform (Fire Safety) Order 2005 • Construction (Design and Management) Regulations 2007 • Management of Health and Safety at Work Regulations • Health and Safety at Work Act 1974 • Gas Safety (Installation and Use) Regulations 1998	• Relevant case law • Contract law **Related Guidance** Authoritative guidance as typically published by institutions, industry bodies and individuals including Collaborative Reporting for Safer Structures UK (CROSS-UK). • Royal Institute of British Architects (RIBA) plan of work • Building Services Research and Information Association (BSRIA) plan of work • Civil, criminal, and case law • Contract law • Law of agency • Employment law • The Housing Acts 1985,1988, 1996, 2004 • Housing Health and Safety Rating System • Equalities Act 2010 • Town and Country Planning Act 1990 • Housing and Regeneration Act 2008 • Licensing legislation

Examples of evidence	HRB specific criteria
• Identifying projects (or technical improvements to products, processes, or systems that are needed to undertake an engineering task within the development / design / application / integration) in regard to HRB fire safety, structural and building life safety systems • Preparing specifications on the development / design / application / integration of HRB fire safety, structural and building life safety systems and taking account of functional and other requirements • Establishing user requirements for improvements in HRB fire safety, structural and building life safety systems • Reviewing specifications and tenders to identify technical issues and potential improvements, with specific focus on elements concerning the development / design / application / integration of HRB fire safety, structural and building life safety systems. These reviews must also consider, contribute, and innovate towards the continuation of the golden thread of information • Conducting technical risk analysis on HRB fire safety, structural and building life safety systems. and identifying mitigation measures • Considering and implementing new and emerging technologies within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • The respective responsibilities of roles specified in the regulations and the relationship of their own role to that of the duty holder and other professions, trades or engineering disciplines Wherever relevant, applicants shall demonstrate the ability to: • Identify, review and select techniques, procedures and methods to undertake engineering tasks • Contribute to the design and development of engineering solutions within an HRB • Implement design solutions and contribute to their evaluation • Establish the static and dynamic life safety systems and their design interfaces • Review the test and commissioning plan • Ensure a co-ordinated life safety solution is achieved

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Contribute to the design and development of engineering solutions through application of relevant standards, testing, site inspection, assessment and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle of HRBs	• British and international product standards • Testing standards, procedures, and interpretation of results • Good practice specification • Product characteristics and performance • System, component or assembly testing and performance • Prototyping / sample panel and testing • Maintenance requirements • Maintenance testing and commissioning of building systems and services

Examples of evidence	HRB specific criteria
• Identifying and agreeing appropriate research methodologies on the development / design / application / integration of HRB fire safety, structural and building life safety systems • Investigating a technical issue within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying potential solutions, and determining the factors needed to compare them • Identifying and conducting physical tests or trials on HRB fire safety, structural and building life safety systems • Conducting technical simulations or analysis with regards to the development / design / application / integration of HRB fire safety, structural and building life safety systems • Preparing, presenting, and agreeing design recommendations, with appropriate analysis of risk on the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then taking account of quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints and opportunities, as well as environmental impact	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant standards, testing, assessment and maintenance procedures for building materials, products, components, assemblies and systems • Methods and practice of building maintenance Wherever relevant, applicants shall demonstrate the ability to: • Apply this underpinning knowledge and understanding effectively as part of the engineering process to ensure safety throughout the building life cycle of HRBs • Apply this underpinning knowledge and understanding to ensure the building performs safely as a system • Conduct testing and verify quality and suitability of delivered / procured products and materials

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Implement design solutions for equipment or processes and contribute to their evaluation	• Design solutions applicable across the life cycle of HRBs

Examples of evidence	HRB specific criteria
• Ensuring that the application of the design within HRB fire safety, structural and building life safety systems, results in the appropriate practical outcome • Implementing design solutions and taking account of critical constraints. This includes due concern for safety, sustainability, and disposal or decommissioning, within HRB fire safety, structural and building life safety systems • Identifying and implementing lessons learned • Evaluating existing designs or processes within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying faults or potential improvements including risk and life cycle considerations • Actively learning from feedback to improve future design solutions and establish best practice within the development / design / application / integration of HRB fire safety, structural and building life safety systems	Applicants shall demonstrate underpinning knowledge and understanding of: • Identifying the resources required for implementation • Implementing design solutions and taking account of critical constraints including due concern for safety and sustainability • Identifying problems during implementation and taking corrective action • Contributing to recommendations for improvement and actively learning from feedback

Competence		Scope	
CC. Responsibility, management and leadership **Incorporated Engineers shall provide technical and commercial management.** This competence is about the ability to plan the applicant's own work and manage or specify the work of others effectively, efficiently and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Incorporated Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also about the ability to consider and identify improvements to quality in relation to HRBs.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1a. Plan the work and resources needed to enable effective implementation of significant engineering tasks or projects in association with, or to fulfil, key roles, responsibilities and duties relating to HRBs	• Duties and responsibilities of key roles / duty holders including client, contractor, building owner / manager, building safety manager, occupant / resident • Joint Competent Authority (JCA) / Regulator • Overarching competence body • Local authority • Relevant statutory regulators • Profession / trade regulators • Fire and rescue services • Through-life management and maintenance **Understanding of** • Golden thread of building information • Safety management systems • Safety cases • Health and safety files • Fire and Emergency Files • Design / construction, as-built / as-maintained information • Building safety strategies • Building maintenance information and scheduling	• Testing and commissioning information • Life cycle and replacement data • Building installer / constructor / maintainer competence requirements • Regulation 38 of the Building Control requirements • HRB records and certificates • As-built information • Building Information Modelling (BIM)

Examples of evidence	HRB specific criteria
• Identifying factors affecting the project implementation • Carrying out holistic and systematic risk identification, assessment and management • Preparing and agreeing implementation plans and method statements • Securing the necessary resources and confirming roles in a project team • Applying the necessary contractual arrangements with other stakeholders (clients, subcontractors, suppliers, etc)	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with the duties of an engineer in relation to HRBs • Explain the roles and responsibilities of other key duty holders and their interactions with the role of an engineer on HRBs • Work effectively with other key duty holders • Act as, or engage effectively with, the Principal Designer or Principal Contractor of an HRB • Integrate understanding of through-life management and maintenance criteria in engineering activities to ensure safe outcomes • Challenge others where duties are not being effectively met Applicants shall demonstrate underpinning knowledge and understanding of: • All documents (and their content) which the engineer must create, maintain or use to ensure HRB safety • Competence and needs of building safety managers and owners

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1b. Contribute to continuous improvement and use appropriate information management principles to manage, distribute and maintain information which is critical to ensuring that HRBs are built, operated and maintained to be safe throughout the building life cycle	• As 1a
	2. Manage and use procedures to challenge unacceptable behaviour or practice where duties are not being effectively met. Raise, report, escalate or flag risks to safety with managers, duty holders and regulators	• Whistleblowing policies • Public Interest Disclosure Act 1998 • Public duty to report • Public liabilities • Company or organisational reporting and escalation policies and procedures

Examples of evidence	HRB specific criteria
• As 1a	Wherever relevant, applicants shall demonstrate the ability to: • Develop, manage, distribute and maintain information about the engineering of HRBs which is critical to ensuring that they are engineered to be safe, built to be safe, operated safely and maintained to be safe throughout the building life cycle • Develop and communicate clearly expressed engineering strategies to meet building safety requirements • Comply with requirements to prepare and submit relevant documentation as part of the safety management system, safety case, Fire and Emergency File or Health and Safety plan • Utilise suitable information management tools to ensure accurate design and as-built information are developed and issued • Manage changes to engineering information in order to ensure an accurate set of as-built information is available at key gateway stages • Identify what information is needed from other parties and understand and apply that information where relevant to the role of the engineer, including operation and management documents required to operate the building safely
• Operating appropriate management systems • Working to the agreed quality standards, programme and budget, within legal and statutory requirements • Managing work teams, coordinating project activities • Identifying variations from quality standards, programme and budgets, and taking corrective action • Evaluating performance and recommending improvements	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with professional and ethical duties to raise concerns relating to public safety • Effectively raise safety concerns with colleagues and where necessary escalate these concerns through management chains • Identify if and when it is necessary to utilise whistleblowing procedures under the Public Information Disclosure Act 1998 and how to do so • Explain and act on any other duties to raise concerns about life safety within an HRB

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3a. Manage competent teams which include duty holders, or the input of others into own work and assist others to meet changing requirements for technical and procedural compliance for safe outcomes	• Project management and control • Sequencing of work • Assembling and appointing teams • Effective management practice / procedures for engineering of HRBs

Examples of evidence	HRB specific criteria
• Agreeing objectives and work plans with teams and individuals • Reinforcing team commitment to professional standards • Leading and supporting team and individual development • Assessing team and individual performance, and providing feedback • Seeking input from other teams or specialists where needed and managing the relationship	**Applicants shall demonstrate underpinning knowledge and understanding of:** • What competence frameworks and qualifications exist • Change management and change control techniques • Quality management techniques **Wherever relevant, applicants shall demonstrate the ability to:** • Integrate requirements for building safety into project planning and management activities • Assess examples of evidence required within engineering or project teams and ensure suitable expertise is procured • Apply quality management, control or audit procedures in order verify that building safety measures have been carried out • Explain and comply with relevant procedural requirements, submissions and processes • Create and maintain appropriate project and control documentation • Establish quality criteria for engineering work and objectively evaluate outcomes against those criteria • Complete competence self-assessment records and learn from that process; show examples of quality assurance or management procedures • Ensure competence of self / staff / specialists or other organisations; • Use competence scoring or assessment techniques; involving competence assessment of individuals

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3b. Identify and manage the limits of competence of self and others and undertake appropriate mitigating actions to manage risk, including how and when to procure specialist advice. Use appropriate evidence and experience in the management of soft hazards	**People** • Competence and resource **Process** • Understanding, validation and communication of assumptions • Flow-through of information • Specialist, Analysis and Software tool validation and verification • Conceptual design review, checking and peer review • Responsibility for the design when split between more than one designer • Single point of responsibility • Change control • Site inspection / monitoring **Product** • Checks on product origin, certification and compliance
	4. Take an active role in continuous quality improvement	• Quality improvement applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• As 3a	Wherever relevant, applicants shall demonstrate the ability to: • Identify limits of competence of individuals or organisations involved in the engineering, construction or maintenance of HRBs • Identify suitable mitigating actions to manage risk • Explain what competence is and how this relates to building safety • Identify when and how to assess, or request evidence of competence from, other project team members • Explain and comply with duties to ensure competence relating to the engineering of HRBs • Identify the need to seek advice from others with specialist competences and how to procure that advice • Effectively raise concerns about the competence of individuals or organisations if this is of concern • Mitigate any residual risk relating to competence
• Ensuring the application of quality management principles by team members and colleagues • Managing operations to maintain quality standards eg ISO 9000, EQFM • Evaluating projects and making recommendations for improvement • Implementing and sharing the results of lessons learned	

Competence		Scope
DD. Communication and interpersonal skills **Incorporated Engineers shall demonstrate effective communication and interpersonal skills.** This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Maintain effective and clear communication with occupants / residents, the public and with others, orally and in writing	• Requirements / obligations to communicate, consult with and respond to occupants / residents or people otherwise affected by buildings / building work • Communication through media relevant to role (orally, written text or drawn) • Communication of technical complex information to non-technical audiences • Effective communication within project and client teams
	2. Clearly present and discuss proposals, justifications and conclusions	• Effective communication applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Contributing to, chairing and recording meetings and discussions • Preparing communications, documents and reports on technical matters • Exchanging information and providing advice to technical and non-technical colleagues • Engaging or interacting with professional networks	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with duties to communicate with clients, occupants / residents and other people or organisations involved in or affected by projects on HRBs • Write reports, letters, emails or give presentations in a manner which can be clearly understood by non-technical people • Clearly identify and effectively communicate responsibilities and issues relating to HRB safety within design, engineering or project teams • Explain complex technical issues to non-technical audiences • Promote and actively engage in collaborative working across disciplines • Understand challenges and requirements of other disciplines • Read and understand technical documents / drawings and convey details to others • Be inclusive, promote and welcome diversity of thought / ideas • Write clear guidance for end users
• Preparing and delivering appropriate presentations • Managing debates with audiences • Feeding the results back to improve the proposals • Contributing to the awareness of risk	Applicants shall demonstrate underpinning knowledge and understanding of: • Principles and value of competence • Competence assessment techniques • Roles and responsibilities for advising on and ensuring competence • Procurement and management of specialist competence • Managing residual risk

Competence		Scope
DD. Communication and interpersonal skills	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues	• Personal and social skills applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion	

Competence		Scope
EE. Personal and professional commitment **Incorporated Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.** This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others. An Incorporated Engineer should set a standard and example to others with regard to professionalism.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Demonstrate understanding of, and the ability to manage, ethical considerations relating to the occupants / residents of HRBs and apply these s in practice	• Obligation to consult / listen to the occupant / resident's voice • Duty of care to occupants / residents • Consideration of diversity and inclusion including differential needs eg emergency egress • Adhering to codes of conduct
	2a. Review and comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs	• Legislation and guidance that applies to HRBs (referencing examples in the scope of BB1) • Demonstration of the principles underpinning the Setting the Bar report to improve competence and drive culture change

Examples of evidence	HRB specific criteria
• Demonstrating compliance with your Licensee's Code of Professional Conduct • Identifying aspects of the Code particularly relevant to your role • Managing work within all relevant legislative and regulatory frameworks, including social and employment legislation	**Wherever relevant, applicants shall demonstrate the ability to:** • Apply understanding of specific ethical principles in engineering practice • Act with honesty, accuracy, respect, integrity, responsibility, and within the limits of their capability in order to build trust • Respect concerns and issues raised by occupants / residents and respond appropriately • Apply duty of care to occupants / residents and people living or working in and around HRB buildings • Take account of differential needs of older and disabled people in accessing, and ability to escape from, HRBs • Act in accordance with professional or company Code of Conduct • Act in accordance with the Royal Academy of Engineering and the Engineering Council's joint Statement of Ethical Principles, available on the Engineering Council website https://www.engc.org.uk/ethics
• Identifying and taking responsibility for your own obligations for health, safety and welfare issues • Managing systems that satisfy health, safety and welfare requirements • Developing and implementing appropriate hazard identification and risk management systems and culture • Managing, evaluating and improving these systems • Applying a sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies	**Applicants shall demonstrate underpinning knowledge and understanding of:** • Relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • The respective responsibilities of roles specified in regulations and the relationship of their own role to that of the duty holder and other professions, trades or engineering disciplines **Wherever relevant, applicants shall demonstrate the ability to:** • Meet or exceed requirements set out in relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • Recognise how the statutory or legal requirements of other roles relate to the role of the engineer where these could impact on building safety • Advise others on what needs to be done to comply with relevant statutory requirements

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2b. Understand the risks relevant to HRBs and contribute to risk management frameworks and safe systems of work	• Definition of HRB • Critical risk factors in HRBs • Safety case development • Safety case review • Fire risk strategy • Construction (Design and Management) Regulations 2015 • Health and safety file • Harmful materials • Control of Substances Hazardous to Health (COSHH) regulations • Building management and maintenance for building and occupant / resident safety
	2c. Understand statutory processes and procedures applicable to HRBs	• Gateway process and stages for HRBs • Role of the Joint Competent Authority (JCA) • Listening to the occupant / resident's voice and associated engagement

Examples of evidence	HRB specific criteria
• As 2a	**Applicants shall demonstrate underpinning knowledge and understanding of:** • How and why HRBs are defined and the relevance to engineering activities • The importance and purposes of safety management systems • Hazard identification and risk assessment methodologies • The specific engineering risks relevant to each type of HRB, including typical critical modes of failure and consideration of maintenance and replacement cycles • How these risks should be managed through the design process, including through commissioning or undertaking of work by other specialist people **Wherever relevant, applicants shall demonstrate the ability to:** • Contribute to, and work with, safety management systems for HRBs • Lead or contribute to the development, modification and management of the safety case • Lead, carry out or contribute to hazard identification and risk assessment • Execute their duties and responsibilities in accordance with the safety case
• As 2a	**Applicants shall demonstrate underpinning knowledge and understanding of:** • Statutory processes and procedures • Occupant / resident engagement channels **Wherever relevant, applicants shall demonstrate the ability to:** • Advise clients, project team members and others on duties and procedural requirements relating to the engineering of an HRB • Comply with relevant engineering development activities in order to demonstrate compliance with building safety requirements to the JCA at differing gateway stages • Engage positively with the JCA and its constituent bodies • Engage and communicate with occupant / resident and the public

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Understand the principles of sustainable development and apply them in their work	• Sustainable development considerations applicable across the building life cycle of HRBs
	4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in HRBs	• CPD applicable across the building life cycle of all HRBs

Examples of evidence	HRB specific criteria
• Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously • Recognising how sustainability principles, as described in the Guidance on Sustainability, can be applied in your day-to-day work. This is available on the Engineering Council website: www.engc.org.uk/sustainability • Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives • Understanding and encouraging stakeholder involvement in sustainable development • Using resources efficiently and effectively • Taking action to minimise environmental impact in your area of responsibility	
• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out and recording planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD	Wherever relevant, applicants shall demonstrate the ability to: Assess the limits of their own competence in relation to the work being undertaken Identify their own personal development needs and put in place a suitable personal development plan including CPD relevant to HRBs Engage with a peer review / assessment and feedback process to obtain an external perspective on competence and areas for improvement Identify the limit of competence of colleagues and take action to assess and manage the development of team members and support improvement where necessary

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner	• Ethical considerations applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles . available on the Engineering Council website: www.engc.org.uk/sustainability • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company	

The Chartered Engineer HRB Standard

Chartered Engineers HRB develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity and technical analysis.

Chartered Engineers HRB shall demonstrate:

- The theoretical knowledge to solve problems in new and established technologies and to develop new analytical techniques
- Successful application of the knowledge to deliver innovative products and services or taking technical responsibility for complex engineering systems
- Responsibility for the financial and planning aspects of projects, sub-projects or tasks
- Leadership and development of other professional staff through management, mentoring or coaching
- Effective interpersonal skills in communicating technical matters
- Understanding of the safety and sustainability implications of their work, seeking to improve aspects where feasible
- Commitment to professional engineering values

A Chartered Engineer on the HRB Register will be able to demonstrate their competence in all of the areas listed, but the depth and extent of their experience and competence will vary with the nature and requirements of their role. They will demonstrate a level of competence and commitment in each area (AA1–EE5), at a level which is consistent with their specific role. It is to be expected that they will have a higher level of competence in some areas than others and their role may provide limited experience in certain areas. However, they need to demonstrate an understanding of, and familiarity with, the key aspects of competence in all areas as a minimum requirement while demonstrating higher levels of competence in those areas which are critical to their role. Overall, they will demonstrate an appropriate balance of competences to perform their role effectively at Chartered Engineer level.

The examples of evidence are intended as guidance to help identify activities that might demonstrate the required competence and commitment for Chartered Engineer HRB registration. They are intended as examples only as the most appropriate evidence will vary with each individual role. The list is not exhaustive and other types of evidence might be valid. There is no requirement to provide multiple examples of evidence for each area of competence, but examples from two or three projects or tasks would be useful.

† Candidates must show they meet all the competences, however, it is not expected that applicants will necessarily meet all the listed HRB-specific criteria. They will be expected to demonstrate competence against a substantial proportion of the scope, using a variety of sources and types of evidence, wherever this is relevant to their role. As part of their continuing professional development (CPD), successful applicants have an obligation to remain alert to any changes in their role or responsibilities and ensure the appropriate underpinning knowledge and understanding are updated accordingly. This is applicable throughout the document where “wherever relevant, applicants shall demonstrate the ability to:” is mentioned.

Applicants shall provide evidence from the HRB-specific criteria when developing their portfolio across the AA1-EE5 competences. Licensees’ Professional Review assessors may request further evidence across any or all of the criteria.

Competence		Scope	
AA. Knowledge and understanding **Chartered Engineers shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems.** This competence is about the ability to understand underpinning technical principles in fire, structural and life safety relevant to the applicant's area of practice and applying them to develop technical solutions. This could involve technical solutions for novel problems or dealing with significant technical complexity. This may involve the integration of a range of technologies and consideration of other factors. This competence requires that an applicant is maintaining and developing their knowledge in their field of practice and not just that required for specific tasks.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Maintain, extend and develop a sound theoretical approach to application of relevant fire, structural and building life safety systems, principles and practices throughout the building life cycle of HRBs*	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others	• Access and facilities for fire and emergency services **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria
• Formal training related to your role in the application of relevant fire, structural and building life safety systems, as well as the principles and practices that are important throughout the building life cycle of HRBs • Learning and developing the engineering knowledge needed to work in an industry area or discipline where the application of relevant fire, structural and building life safety systems, principles and practices are required • Understanding the current and emerging technology and technical best practice, principles and practices throughout the building life cycle of HRBs, in the relevant fire, structural and building life safety systems • Developing a broader and deeper knowledge base through research and experimentation in the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Learning and developing new engineering theories and techniques on the relevant fire, structural and building life safety systems, principles and practices that are important throughout the building life cycle of HRBs • Recognising, consulting with, updating and applying the golden thread of information on any development / design / application / integration for HRB fire safety, structural and building life safety systems. This will include any related life critical sub-systems	**Applicants shall demonstrate underpinning knowledge and understanding of:** • The building as a system and how the technical interfaces contribute to the functionality and safety of the building and its occupants / residents • The interrelationship of design and specification with fire performance • Key features and principles of passive and active fire protection (including suppression systems) **Wherever relevant, applicants shall demonstrate the ability† to:** • Apply relevant fire safety principles and practices in the engineering of HRBs • Apply fundamental knowledge of fire science, (including key aspects of the fire performance of materials) in the engineering and specification of HRBs • Integrate key principles of human behaviour and fire escape design into the engineering and arrangement of escape provision in HRBs • Integrate and coordinate relevant passive and active fire protection systems into the engineering components of HRBs • Integrate and coordinate compartmentation and structural fire protection into the engineering of HRBs with particular reference to measures which prevent the spread of flame and smoke • Integrate and coordinate fire-fighting access requirements and provision of fire-fighting facilities into the engineering design and layout of HRBs • Integrate new engineering approaches, theories or techniques into engineering practice while ensuring safe outcomes * See Glossary: ‘building life cycle’ † See p63

Competence		Scope	
AA. Knowledge and understanding	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Address and develop solutions to complex or challenging building safety problems with significant levels of risk. Apply knowledge and understanding of relevant principles and technical standards to co-ordinate and integrate these into the building design	**Fire Science** • Principles of heat transfer • Properties of materials • Principles of fire chemistry • Principles of fire dynamics **Human Behaviour and Evacuation** • Human behaviour and physiological response to fire • Life safety design concepts and practice **Fire Safety Design and Specification** • Fire protection systems • Passive fire protection systems • Active fire protection systems • Fire detection and alarm systems • Fire suppression systems **Fire Prevention** • Fire performance of materials • Compartmentation and spread of flame • Principles of structural fire protection design • Commissioning and interrogation of specialist analysis by others • Access and facilities for fire and emergency services	• Collaboration and system integration **Structural Safety** • Structural design / fixing of cladding / facade at height • Secondary fixings specification and design • Disproportionate collapse **Protection from Falling or Collision** • Stair safety • Guarding / balustrades • Balconies **Public Health** • Air quality / ventilation • Above ground drainage • Water storage • Combustion appliances **Building Services** • Gas appliances and services • Electrical safety • Mechanical services • Fire integrities **Building Fabric** • Interstitial condensation / corrosion • Maintenance • Glazing and glazing systems

Examples of evidence	HRB specific criteria

• Conducting technical research and development across all aspects of development / design / application / integration of HRB fire safety, structural and building life safety systems
• Developing systems and processes for the design / application / integration of HRB fire safety, structural and building life safety systems and considering new or evolving technology
• Conducting complex and / or non-standard technical analyses on the development / design / application / integration of HRB fire safety, structural and building life safety systems
• Developing solutions involving complex or multidisciplinary technology in relation to HRB fire safety, structural and building life safety systems
• Developing and evaluating continuous improvement systems on HRB fire safety, structural and building life safety systems, including any related life critical sub-systems
	Applicants shall demonstrate underpinning knowledge and understanding of:
	• The process by which different aspects of building safety should be successfully integrated for all life safety components during the life cycle of the HRB
	• The critical safety engineering principles relevant to structure, public health and building services
	• Fire, building services, life safety and structural engineering principles relevant to maintaining the integrity of the building fire strategy
	• The benefits of multi-disciplinary and multi-organisational collaboration in achieving a well performing and safe HRB
	
	Wherever relevant, applicants shall demonstrate the ability to:
	• Evaluate and integrate new technology safely into the engineering design of HRBs taking into account:.
	  ▸ Building life cycle
	  ▸ Buildability
	  ▸ Maintenance and refurbishment
	• Map out and execute the interfaces of all life safety components throughout the building life cycle of HRBs
	• Recognise when advice from others including specialist professionals is needed, obtain this and ensure it is integrated effectively into the engineering design of the HRB
	• Co-ordinate the engineering, specification and assessment of building fabric including where necessary commissioning, collaborating with and integrating the work of other specialist building professionals to achieve safe performance throughout the building life cycle
	• Integrate new engineering approaches, theories or techniques into engineering practice while ensuring safe outcomes
	• Undertake statistically sound appraisal of data to underpin safe engineering outcomes
	• Understand original design intent and principles and maintain these when making minor or major modifications to an HRB

Competence		Scope	
BB. Design, development and solving engineering problems **Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems.** This competence is about the ability to apply engineering knowledge effectively and efficiently to the individual tasks which need to be undertaken in the applicant's role in relation to HRBs.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Take an active role in the identification and definition of project requirements, problems, and opportunities throughout the building life cycle of HRBs	Construction legislation relevant to higher-risk buildings (HRBs) including: **Construction Legislation** • The Building Act 1984 • The Building Safety Act 2022 and Regulations • Building regulations • Approved documents • Approved Document 7: Materials and Workmanship • Building regulations (procedural) • Local acts / enactments • Government communications / circular letters • Sustainable and Secure Buildings Act 2004 • Regulatory Reform (Fire Safety) Order 2005 • Construction (Design and Management) Regulations 2007 • Management of Health and Safety at Work Regulations • Health and Safety at Work Act 1974 • Gas Safety (Installation and Use) Regulations 1998	• Relevant case law • Contract law **Related Guidance** Authoritative guidance as typically published by institutions, industry bodies and individuals including Collaborative Reporting for Safer Structures UK (CROSS-UK). • Royal Institute of British Architects (RIBA) plan of work • Building Services Research and Information Association (BSRIA) plan of work • Civil, criminal, and case law • Contract law • Law of agency • Employment law • The Housing Acts 1985,1988, 1996, 2004 • Housing Health and Safety Rating System • Equalities Act 2010 • Town and Country Planning Act 1990 • Housing and Regeneration Act 2008 • Licensing legislation

Examples of evidence	HRB specific criteria
• Identifying projects (or technical improvements to products, processes, or systems needed to undertake an engineering task within the development / design / application / integration) in regard to HRB fire safety, structural and building life safety systems. • Preparing specifications on the development / design / application / integration of HRB fire safety, structural and building life safety systems, and taking account of functional and other requirements. • Establishing user requirements for improvements in HRB fire safety, structural and building life safety systems. • Reviewing specifications and tenders to identify technical issues and potential improvements, with specific focus on elements concerning the development / design / application / integration of HRB fire safety, structural and building life safety systems. These reviews must also consider, contribute, and innovate towards the continuation of the golden thread of information. • Conducting technical risk analysis on HRB fire safety, structural and building life safety systems, and identifying mitigation measures. • Considering and implementing new and emerging technologies within the development / design / application / integration of HRB fire safety, structural and building life safety systems	**Applicants shall demonstrate underpinning knowledge and understanding of:** • Relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • The respective responsibilities of roles specified in the regulations and the relationship of their own role to that of the duty holder and other professions, trades or engineering disciplines **Wherever relevant, applicants shall demonstrate the ability to:** • Identify, review and select techniques, procedures and methods to undertake engineering tasks • Contribute to the design and development of engineering solutions within an HRB • Implement design solutions and contribute to their evaluation • Establish the static and dynamic life safety systems and their design interfaces • Review the test and commissioning plan • Ensure a co-ordinated life safety solution is achieved

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2. Undertake research, analysis and development to define, refine and apply relevant standards, testing, assessment, site inspection and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle	• British and international product standards • Testing standards, procedures, and interpretation of results • Good practice specification • Product characteristics and performance • System, component or assembly testing and performance • Prototyping / sample panel and testing • Maintenance requirements • Maintenance testing and commissioning of building systems and services

Examples of evidence	HRB specific criteria
• Identifying and agreeing appropriate research methodologies on the development / design / application / integration of HRB fire safety, structural and building life safety systems • Investigating a technical issue within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying potential solutions, and determining the factors needed to compare them • Identifying and conducting physical tests or trials on HRB fire safety, structural and building life safety systems • Conducting technical simulations or analysis with regards to the development / design / application / integration of HRB fire safety, structural and building life safety systems • Preparing, presenting, and agreeing design recommendations, with appropriate analysis of risk on the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then taking account of, quality, safety, reliability, accessibility, appearance, fitness for purpose, cost, security (including cyber security), intellectual property constraints and opportunities, as well as environmental impact	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant standards, testing, assessment and maintenance procedures for building materials, products, components, assemblies and systems • Methods and practice of building maintenance Wherever relevant, applicants shall demonstrate the ability to: • Apply this underpinning knowledge and understanding effectively as part of the engineering process to ensure safety throughout the life cycle of the building • Apply this underpinning knowledge and understanding to ensure the building performs safely as a system • Conduct testing and verify quality and suitability of delivered / procured products and materials

Competence		Scope
BB. Design, development and solving engineering problems	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Can implement engineering tasks and evaluate the effectiveness of engineering solutions	• Engineering solutions applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Ensuring that the application of the design within HRB fire safety, structural and building life safety systems, results in the appropriate practical outcome • Implementing design solutions and taking account of critical constraints. This includes due concern for safety, sustainability, and disposal or decommissioning, within HRB fire safety, structural and building life safety systems • Identifying and implementing lessons learned • Evaluating existing designs or processes within the development / design / application / integration of HRB fire safety, structural and building life safety systems. Then identifying faults or potential improvements including risk and life cycle considerations • Actively learning from feedback to improve future design solutions and establish best practice within the development / design / application / integration of HRB fire safety, structural and building life safety systems.	Applicants shall demonstrate underpinning knowledge and understanding of: • Identifying the resources required for implementation • Implementing design solutions and taking account of critical constraints including due concern for safety and sustainability • Identifying problems during implementation and taking corrective action • Contributing to recommendations for improvement and actively learning from feedback

Competence		Scope	
CC. Responsibility, management and leadership **Chartered Engineers shall demonstrate technical and commercial leadership.** This competence is about the ability to plan the applicant's own work and manage or specify the work of others effectively, efficiently, and in a way which provides leadership at an appropriate level, whether technical or commercial. Leadership is not necessarily about having a formal line management role. In matrix management and other types of organisational structure, where Chartered Engineers are working within complex and varied working relationships, they will provide leadership to achieve objectives. This competence is also, about the ability to consider and identify improvements to quality.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1a. Plan the work and resources needed to enable effective implementation of significant engineering tasks or projects in association with or to fulfil key roles, responsibilities and duties relating to HRBs	• Duties and responsibilities of key roles / duty holders including client, contractor, building owner / manager, building safety manager, occupant / resident • Joint Competent Authority (JCA) / Regulator • Overarching competence body • Local authority • Relevant statutory regulators • Profession / trade regulators • Fire and rescue services • Through-life management and maintenance **Understanding of** • Golden thread of building information • Safety management systems • Safety cases • Health and safety files • Fire and Emergency Files • Design / construction, as-built / as-maintained information • Building safety strategies • Building maintenance information and scheduling	• Testing and commissioning information • Life cycle and replacement data • Building installer / constructor / maintainer competence requirements • Regulation 38 of the Building Control requirements • HRB records and certificates • As-built information • Building Information Modelling (BIM)

Examples of evidence	HRB specific criteria
• Preparing budgets and associated work programmes for projects or tasks • Systematically reviewing the factors affecting the project implementation including safety, sustainability and disposal or decommissioning considerations • Carrying out a task or project risk assessment and identifying mitigation measures • Leading on preparing and agreeing implementation plans and method statements • Negotiating and agreeing arrangements with customers, colleagues, contractors and other stakeholders, including regulatory bodies • Ensuring that information flow is appropriate and effective	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with the duties of an engineer in relation to HRBs • Explain the roles and responsibilities of other key duty holders and their interactions with the role of an engineer on HRBs • Work effectively with other key duty holders • Act as, or engage effectively with, the Principal Designer or Principal Contractor of an HRB • Integrate understanding of through-life management and maintenance criteria in engineering activities to ensure safe outcomes • Challenge others where duties are not being effectively met Applicants shall demonstrate underpinning knowledge and understanding of: • All documents (and their content) which the engineer must create, maintain or use to ensure HRB safety • Competence and needs of building safety managers and owners

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1b. Develop effective approaches and use appropriate information management principles to manage, distribute and maintain information which is critical to ensuring that HRBs are built, operated and maintained to be safe throughout the building life cycle	• As 1a
	2. Develop, manage, maintain and use procedures to challenge unacceptable behaviour or practice where duties are not being effectively met. Raise, report, escalate or flag risks to safety with clients, managers, duty holders and regulators	• Whistleblowing policies • Public Interest Disclosure Act 1998 • Public duty to report • Public liabilities • Company or organisational reporting and escalation policies and procedures

Examples of evidence	HRB specific criteria
• As 1a	Wherever relevant, applicants shall demonstrate the ability to: • Develop, manage, distribute and maintain information about the engineering of HRBs which is critical to ensuring that they are engineered to be safe, built to be safe, operated safely and maintained to be safe throughout the building life cycle • Develop and communicate clearly expressed engineering strategies to meet building safety requirements • Comply with requirements to prepare and submit relevant documentation as part of the safety management system, safety case, Fire and Emergency File or Health and Safety plan • Utilise suitable information management tools to ensure accurate design and as-built information are developed and issued • Manage changes to engineering information in order to ensure an accurate set of as-built information is available at key gateway stages • Identify what information is needed from other parties and understand and apply that information where relevant to the role of the HRB engineer, including operation and management documents required to operate the building safely
• Operating appropriate management systems • Working to the agreed quality standards, programme and budget, within legal and statutory requirements • Managing work teams, coordinating project activities • Identifying variations from quality standards, programme and budgets, and taking corrective action • Evaluating performance and recommending improvements	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with professional and ethical duties to raise concerns relating to public safety • Effectively raise safety concerns with colleagues and where necessary escalate these concerns through management chains • Identify if and when it is necessary to utilise whistleblowing provisions under the Public Interest Disclosure Act 1998 and how to do so. • Explain and act on any other duties to raise concerns about life safety within an HRB

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3a. Lead teams or technical specialisms and assist others, including duty holders and regulators, to meet changing requirements for technical and procedural requirements for safe outcomes	• Project management and control • Sequencing of work • Assembling and appointing teams • Effective management practice / procedures for engineering of HRBs

Examples of evidence	HRB specific criteria
• Agreeing objectives and work plans with teams and individuals • Reinforcing team commitment to professional standards • Leading and supporting team and individual development • Assessing team and individual performance, and providing feedback • Seeking input from other teams or specialists where needed and managing the relationship • Providing specialist knowledge, guidance and input in your specialism to engineering teams, engineers, customers, management and relevant stakeholders	**Applicants shall demonstrate underpinning knowledge and understanding of:** • What competence frameworks and qualifications exist • Change management and change control techniques • Quality management techniques **Wherever relevant, applicants shall demonstrate the ability to:** • Integrate requirements for building safety into project planning and management activities • Assess sub competences required within engineering or project teams and ensure suitable expertise is procured • Apply quality management, control or audit procedures in order to verify that building safety measures have been carried out • Explain and comply with relevant procedural requirements, submissions and processes • Create and maintain appropriate project and control documentation • Establish quality criteria for engineering work and objectively evaluate outcomes against those criteria • Complete competence self-assessment records and learn from that process; show examples of quality assurance or management procedures to ensure competence of self / staff / specialists or other organisations; use competence scoring or assessment techniques; involving in competence assessment of individuals

Competence		Scope
CC. Responsibility, management and leadership	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3b. Define requirements for competence. Identify and manage the limits of competence of self and others. Undertake appropriate mitigating actions to manage risk including developing procedures to procure more specialist advice when necessary. Use appropriate evidence in the management of soft hazards	**People** • Competence and resource **Process** • Understanding, validation and communication of assumptions • Flow-through of information • Specialist, Analysis and Software tool validation and verification • Conceptual design review, checking and peer review • Responsibility for the design when split between more than one designer • Single point of responsibility • Change control • Site inspection / monitoring **Product** • Checks on product origin, certification and compliance
	4. Bring about continuous quality improvement and promote best practice	• Quality improvement applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• As 3a	Wherever relevant, applicants shall demonstrate the ability to: • Identify limits of competence of individuals or organisations involved in the engineering, construction or maintenance of HRBs • Identify suitable mitigating actions to manage risk • Explain what competence is and how this relates to building safety • Identify when and how to assess, or request evidence of competence from, other project team members • Explain and comply with duties to ensure competence relating to the engineering of HRBs • Identify the need to seek advice from others with specialist competences and how to procure that advice • Effectively raise concerns about the competence of individuals or organisations if this is of concern • Mitigate any residual risk relating to competence
• Promoting quality throughout the organisation as well as its customer and supplier networks • Developing and maintaining operations to meet quality standards eg ISO 9000, EQFM • Supporting or directing project evaluation and proposing recommendations for improvement • Implementing and sharing the results of lessons learned	

Competence		Scope
DD. Communication and interpersonal skills **Chartered Engineers shall demonstrate effective communication and interpersonal skills.** This is the ability to work with others constructively, to explain ideas and proposals clearly and to discuss issues objectively and constructively.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Develop procedures and approaches to enable effective and appropriate communications with occupants / residents, the public and with others, orally and in writing	• Requirements / obligations to communicate, consult with and respond to occupants / residents or people otherwise affected by buildings / building work • Communication through media relevant to role (orally, written text or drawn) • Communication of technical complex information to non-technical audiences • Effective communication within project and client teams
	2. Clearly present and discuss proposals, justifications and conclusions	• Effective communication applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Preparing reports, drawings, specifications and other documentation on complex matters • Leading, chairing, contributing to and recording meetings and discussions • Exchanging information and providing advice to technical and non-technical colleagues • Engaging or interacting with professional networks	Wherever relevant, applicants shall demonstrate the ability to: • Explain and comply with duties to communicate with clients, occupants / residents and other people or organisations involved in or affected by projects on HRBs • Write reports, letters, emails or give presentations in a manner which can be clearly understood by non-technical people. • Clearly identify and effectively communicate responsibilities and issues relating to HRB safety within design, engineering or project teams • Explain complex technical issues to non-technical audiences • Promote and actively engage in collaborative working across disciplines • Understand challenges and requirements of other disciplines. • Read and understand technical documents / drawings and convey details to others • Be inclusive, promote and welcome diversity of thought / ideas • Write clear guidance for end users
• Contributing to scientific papers or articles as an author • Preparing and delivering presentations on strategic matters • Preparing bids, proposals or studies • Identifying, agreeing and leading work towards collective goals	Applicants shall demonstrate underpinning knowledge and understanding of: • Principles and value of competence • Competence assessment techniques • Roles and responsibilities for advising on and ensuring competence • Procurement and management of specialist sub competences • Managing residual risk

Competence		Scope
DD. Communication and interpersonal skills	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues	• Personal and social skills applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Knowing and managing own emotions, strengths and weaknesses • Being confident and flexible in dealing with new and changing interpersonal situations • Identifying, agreeing and working towards collective goals • Creating, maintaining and enhancing productive working relationships, and resolving conflicts • Being supportive of the needs and concerns of others, especially where this relates to diversity and inclusion	

Competence		Scope
EE. Personal and professional commitment **Chartered Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.** This competence is about ensuring that the applicant is acting in a professional manner in their work and in their dealings with others. A Chartered Engineer should set a standard and example to others with regard to professionalism.	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 1. Demonstrate leadership in, understanding of, and the ability to manage, complex ethical considerations relating to the occupants / residents of HRBs and apply these in practice	• Obligation to consult / listen to the occupant / resident's voice • Duty of care to occupants / residents • Consideration of diversity and inclusion including differential needs eg emergency egress • Adhering to codes of conduct
	2a. Maintain, extend and contribute to development of good practice in complying with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs	• Legislation and guidance that applies to HRBs (referencing examples in the scope of BB1) • Demonstration of the principles underpinning the Setting the Bar report to improve competence and drive culture change

Examples of evidence	HRB specific criteria
• Demonstrating compliance with your Licensee's Code of Professional Conduct • Identifying aspects of the Code which are particularly relevant to your role • Being aware of the legislative and regulatory frameworks relevant to your role and how they conform to them • Leading work within relevant legislation and regulatory frameworks, including social and employment legislation	Wherever relevant, applicants shall demonstrate the ability to: • Apply understanding of specific ethical principles in engineering practice • Act with honesty, accuracy, respect, integrity, responsibility, and within the limits of their capability in order to build trust • Respect concerns and issues raised by occupants / residents and respond appropriately • Apply duty of care to occupants / residents and people living or working in and around buildings • Take account of differential needs of older and disabled people in accessing, and ability to escape from, HRBs • Act in accordance with professional or company Code of Conduct • Act in accordance with the Royal Academy of Engineering and the Engineering Council's joint Statement of Ethical Principles, available on the Engineering Council website: www.engc.org.uk/ethics
• Identifying and taking responsibility for your own obligations and ensuring that others assume similar responsibility for health, safety and welfare issues • Ensuring that systems satisfy health, safety and welfare requirements • Developing and implementing appropriate hazard identification and risk management systems and culture • Managing, evaluating and improving these systems • Applying a sound knowledge of health and safety legislation, for example: HASAW 1974, CDM regulations, ISO 45001 and company safety policies	Applicants shall demonstrate underpinning knowledge and understanding of: • Relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • The respective responsibilities of roles specified in regulations and the relationship of their own role to that of the duty holder and other professions, trades or engineering disciplines Wherever relevant, applicants shall demonstrate the ability to: • Meet or exceed requirements set out in relevant legislation, regulations, statutory guidance and standards of performance in the engineering of HRBs • Recognise how the statutory or legal requirements of other roles relate to the role of the engineer where these could impact on building safety • Advise others on what needs to be done to comply with relevant statutory requirements

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 2b. Develop effective approaches to risk management and apply knowledge and understanding of specific and complex risks relevant to HRBs to the development and application of risk management frameworks and safe systems of work	• Definition of HRB • Critical risk factors in HRBs • Safety case development • Safety case review • Fire risk strategy • Construction (Design and Management) Regulations 2015 • Health and safety file • Harmful materials • Control of Substances Hazardous to Health (COSHH) regulations • Building management and maintenance for building and occupant / resident safety
	2c. Apply statutory processes and procedures to HRBs	• Gateway process and stages for HRBs • Role of the Joint Competent Authority (JCA) • Listening to the occupant / resident's voice and associated engagement

Examples of evidence	HRB specific criteria
• As 2a	**Applicants shall demonstrate underpinning knowledge and understanding of:** • How and why HRBs are defined and the relevance to engineering activities • The importance and purposes of safety management systems • Hazard identification and risk assessment methodologies • The specific engineering risks relevant to each type of HRB, including typical critical modes of failure and consideration of maintenance and replacement cycles • How these risks should be managed through the design process, including through commissioning or undertaking of work by other specialist people **Wherever relevant, applicants shall demonstrate the ability to:** • Contribute to, and work with, safety management systems for HRBs • Lead or contribute to the development, modification and management of the safety case • Lead, carry out or contribute to hazard identification and risk assessment • Execute their duties and responsibilities in accordance with the safety case
• As 2a	**Applicants shall demonstrate underpinning knowledge and understanding of:** • Statutory processes and procedures • Occupant / resident engagement channels **Wherever relevant, applicants shall demonstrate the ability to:** • Advise clients, project team members and others on duties and procedural requirements relating to the engineering of an HRB • Comply with relevant engineering development activities in order to demonstrate compliance with building safety requirements to the JCA at differing gateway stages • Engage positively with the JCA and its constituent bodies • Engage and communicate with occupants / residents and the public

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 3. Understand the principles of sustainable development and apply them in their work	• Sustainable development considerations applicable across the building life cycle of HRBs
	4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in HRBs	• CPD applicable across the building life cycle of all HRBs

Examples of evidence	HRB specific criteria
• Operating and acting responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously • Providing products and services which maintain and enhance the quality of the environment and community, and meet financial objectives • Recognising how sustainability principles, as described in the Guidance on Sustainability, can be applied in your day-to-day work. This is available on the Engineering Council website: www.engc.org.uk/sustainability • Understanding and securing stakeholder involvement in sustainable development • Using resources efficiently and effectively in all activities • Taking action to minimise environmental impact in your area of responsibility	
• Undertaking reviews of your own development needs • Planning how to meet personal and organisational objectives • Carrying out planned and unplanned CPD activities • Maintaining evidence of competence development • Evaluating CPD outcomes against any plans made • Assisting others with their own CPD	Wherever relevant, applicants shall demonstrate the ability to: • Assess the limits of their own competence in relation to the work being undertaken • Identify their own personal development needs and put in place a suitable personal development plan including CPD relevant to HRBs • Engage with a peer review / assessment and feedback process to obtain an external perspective on competence and areas for improvement • Identify the limit of competence of colleagues and take action to assess and manage the development of team members and support improvement where necessary

Competence		Scope
EE. Personal and professional commitment	To the extent that it is relevant to their role, the applicant shall demonstrate that they: 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner	• Ethical considerations applicable across the building life cycle of HRBs

Examples of evidence	HRB specific criteria
• Understanding the ethical issues that you may encounter in your role • Giving an example of where you have applied ethical principles as described in the Statement of Ethical Principles available on the Engineering Council website: www.engc.org.uk/sustainability • Giving an example of where you have applied or upheld ethical principles as defined by your organisation or company	

Comparison table for professional registration standards

Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
Engineering Technicians HRB apply proven techniques and procedures to the solution of practical engineering problems. Engineering Technicians shall demonstrate: • Engineering knowledge and understanding to apply technical and practical skills • Evidence of their contribution to either the design, development, manufacture, commissioning, decommissioning, operation or maintenance of products, equipment, processes or services • Supervisory or technical responsibility • Effective interpersonal skills in communicating technical matters • The ability to operate in accordance with safe systems of work and to demonstrate appropriate understanding of the principles of sustainability • Commitment to professional engineering values	Incorporated Engineers HRB maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation. Incorporated Engineers shall demonstrate: • The theoretical knowledge to solve problems in developed technologies using well-proven analytical techniques • Successful application of their knowledge to deliver engineering projects or services using established technologies and methods • Contribution to the financial and planning aspects of projects or tasks and to leading and developing other professional staff • Effective interpersonal skills in communicating technical matters • The ability to specify and operate to safe systems of work and to demonstrate appropriate consideration of the principles of sustainability • Commitment to professional engineering values	Chartered Engineers HRB develop solutions to complex engineering problems using new or existing technologies, and through innovation, creativity and technical analysis. Chartered Engineers shall demonstrate: • The theoretical knowledge to solve problems in new and established technologies and to develop new analytical techniques • Successful application of the knowledge to deliver innovative products and services and/or taking technical responsibility for complex engineering systems • Responsibility for the financial and planning aspects of projects, sub-projects or tasks • Leadership and development of other professional staff through management, mentoring or coaching • Effective interpersonal skills in communicating technical matters • Understanding of the safety and sustainability implications of their work, seeking to improve aspects where feasible • Commitment to professional engineering values

Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
The Competence and Commitment Standard for Engineering Technicians HRB For guidance and examples of types of evidence that demonstrate the required competence and commitment for registration as an Engineering Technician HRB, see the table on pages 23–47. Engineering Technicians HRB must be competent throughout their working life, by virtue of their education, training and experience in the following ways:	**The Competence and Commitment Standard for Incorporated Engineers HRB** For guidance and examples of types of evidence that demonstrate the required competence and commitment for registration as an Incorporated Engineer HRB, see the table on pages 49–79. Incorporated Engineers HRB must be competent throughout their working life, by virtue of their education, training and experience in the following ways:	**The Competence and Commitment Standard for Chartered Engineers HRB** For guidance and examples of types of evidence that demonstrate the required competence and commitment for registration as a Chartered Engineer HRB, see the table on pages 81–111. Chartered Engineers HRB must be competent throughout their working life, by virtue of their education, training and experience in the following ways:
AA. Knowledge and understanding **Engineering Technicians HRB shall use engineering knowledge and understanding to apply technical and practical skills.** The applicant shall demonstrate that they: 1. Review and select appropriate fire, structural and building life safety systems and principles throughout the building life cycle of HRBs 2. Use appropriate scientific, technical, engineering and information management principles to integrate fire, structural and building life safety systems throughout the building life cycle of HRBs	AA. Knowledge and understanding **Incorporated Engineers HRB shall use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology**. The applicant shall demonstrate that they: 1. Maintain and extend a sound theoretical approach to the application of relevant fire, structural and building life safety systems, principles, and practices throughout the building life cycle of HRBs 2. Use a sound evidence-based approach to problem solving to apply relevant principles and technical standards for fire, structural and building life safety systems throughout the building life cycle of HRBs, and support continuous improvement in building safety	AA. Knowledge and understanding **Chartered Engineers HRB shall use a combination of general and specialist engineering knowledge and understanding to optimise the application of advanced and complex systems**. The applicant shall demonstrate that they: 1. Maintain, extend and develop a sound theoretical approach to application of relevant fire, structural and building life safety systems, principles and practices throughout the building life cycle of HRBs 2. Address and develop solutions to complex or challenging building safety problems with significant levels of risk. Apply knowledge and understanding of relevant principles and technical standards to co-ordinate and integrate these into the building design

Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
BB. Design, development and solving engineering problems **Engineering Technicians shall contribute to the design, development, manufacture, construction, commissioning, decommissioning, operation or maintenance of products, equipment, processes, systems or services.** The applicant shall demonstrate that they: 1. Identify problems and apply appropriate theoretical and practical methods to design, construct, commission, operate, maintain, decommission and recycle building engineering processes, systems, services and product, in order to comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs 2. Identify, organise and apply relevant standards, testing, assessment, site inspection and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle of HRBs	BB. Design, development and solving engineering problems **Incorporated Engineers shall apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate, maintain, decommission and recycle engineering processes, systems, services and products.** The applicant shall demonstrate that they: 1. Identify, review and select appropriate techniques, procedures, and methods to design, construct, commission, operate, maintain, decommission and recycle building engineering processes, systems, services and products, in order to comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs 2. Contribute to the design and development of engineering solutions through application of relevant standards, testing, site inspection, assessment and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle of HRBs 3. Implement design solutions for equipment or processes and contribute to their evaluation	BB. Design, development and solving engineering problems **Chartered Engineers shall apply appropriate theoretical and practical methods to the analysis and solution of engineering problems.** The applicant shall demonstrate that they: 1. Take an active role in the identification and definition of project requirements, problems, and opportunities throughout the building life cycle of HRBs 2. Undertake research, analysis and development to define, refine and apply relevant standards, testing, assessment, site inspection and maintenance procedures for building materials, products, components, assemblies and systems effectively throughout the building life cycle 3. Can implement engineering tasks and evaluate the effectiveness of engineering solutions

Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
CC. Responsibility, management and leadership	CC. Responsibility, management and leadership	CC. Responsibility, management and leadership
Engineering Technicians shall accept and exercise personal responsibility. The applicant shall demonstrate that they: 1a. Work reliably and effectively without close supervision, to contribute to or fulfil roles, responsibilities and duties relating to HRBs. 1b. Use appropriate information management principles to manage, distribute and maintain information which is critical to ensuring that HRBs are built, operated and maintained to be safe throughout the building life cycle 2. Challenge unacceptable behaviour or practice or where duties are not being effectively met. Raise, report, escalate or flag risks to safety with managers and duty holders 3a. Effectively supervise or work within competent project teams which include duty holders, to ensure safe outcomes. Maintain appropriate project and control documentation 3b. Recognise the limits of competence of self and others. Identify when to seek advice from more competent people and use appropriate evidence and experience in the management of soft hazards	**Incorporated Engineers shall provide technical and commercial management.** The applicant shall demonstrate that they: 1a. Plan the work and resources needed to enable effective implementation of significant engineering tasks or projects in association with, or to fulfil, key roles, responsibilities and duties relating to HRBs 1b. Contribute to continuous improvement and use appropriate information management principles to manage, distribute and maintain information which is critical to ensuring that HRBs are built, operated and maintained to be safe throughout the building life cycle 2. Manage and use procedures to challenge unacceptable behaviour or practice where duties are not being effectively met. Raise, report, escalate or flag risks to safety with managers, duty holders and regulators 3a. Manage competent teams which include duty holders, or the input of others into own work and assist others to meet changing requirements for technical and procedural compliance for safe outcomes 3b. Identify and manage the limits of competence of self and others and undertake appropriate mitigating actions to manage risk, including how and when to procure specialist advice. Use appropriate evidence and experience in the management of soft hazards 4. Quality improvement applicable across the building life cycle of HRBs	**Chartered Engineers shall provide technical and commercial leadership.** The applicant shall demonstrate that they: 1a. Plan the work and resources needed to enable effective implementation of significant engineering tasks or projects in association with or to fulfil key roles, responsibilities and duties relating to HRBs 1b. Develop effective approaches and use appropriate information management principles to manage, distribute and maintain information which is critical to ensuring that HRBs are built, operated and maintained to be safe throughout the building life cycle 2. Develop, manage, maintain and use procedures to challenge unacceptable behaviour or practice where duties are not being effectively met. Raise, report, escalate or flag risks to safety with clients, managers, duty holders and regulators 3a. Lead teams or technical specialisms and assist others, including duty holders and regulators, to meet changing requirements for technical and procedural requirements for safe outcomes 3b. Define requirements for competence. Identify and manage the limits of competence of self and others. Undertake appropriate mitigating actions to manage risk including developing procedures to procure more specialist advice when necessary. Use appropriate evidence in the management of soft hazards 4. Bring about continuous quality improvement and promote best practice

Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
DD. Communication and interpersonal skills **Engineering Technicians shall use effective communication and interpersonal skills.** The applicant shall demonstrate that they: 1. Communicate effectively with occupants / residents, the public and with others, orally and in writing 2. Work effectively with colleagues, clients, suppliers or the public 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues.	DD. Communication and interpersonal skills **Incorporated Engineers shall demonstrate effective communication and interpersonal skills.** The applicant shall demonstrate that they: 1. Maintain effective and clear communication with occupants / residents, the public and with others, orally and in writing 2. Clearly present and discuss proposals, justifications and conclusions 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues	DD. Communication and interpersonal skills **Chartered Engineers shall demonstrate effective communication and interpersonal skills.** The applicant shall demonstrate that they: 1. Develop procedures and approaches to enable effective and appropriate communications with occupants / residents, the public and with others, orally and in writing 2. Clearly present and discuss proposals, justifications and conclusions 3. Demonstrate personal and social skills and awareness of diversity and inclusion issues

Engineering Technician HRB	Incorporated Engineer HRB	Chartered Engineer HRB
EE. Personal and professional commitment **Engineering Technicians shall demonstrate a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.** The applicant shall demonstrate that they: 1. Demonstrate understanding of ethical considerations relating to the occupants / residents of HRBs and apply these to self and others in practice 2a. Demonstrate understanding of ethical considerations relating to the occupants / residents of HRBs and apply these to self and others in practice 2b.Understand the risks relevant to HRBs and contribute to risk management frameworks and safe systems of work 2c. Understand statutory processes and procedures applicable to HRBs 3.Understand the principles of sustainable development and apply them in their work 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in HRBs 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner	EE. Personal and professional commitment **Incorporated Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.** The applicant shall demonstrate that they: 1. Demonstrate understanding of, and the ability to manage, ethical considerations relating to the occupants / residents of HRBs and apply these s in practice 2a. Review and comply with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs 2b.Understand the risks relevant to HRBs and contribute to risk management frameworks and safe systems of work 2c. Understand statutory processes and procedures applicable to HRBs 3. Understand the principles of sustainable development and apply them in their work 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in HRBs 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner	EE. Personal and professional commitment **Chartered Engineers shall demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.** The applicant shall demonstrate that they: 1. Demonstrate leadership in, understanding of, and the ability to manage, complex ethical considerations relating to the occupants / residents of HRBs and apply these in practice 2a. Maintain, extend and contribute to development of good practice in complying with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs 2b.Develop effective approaches to risk management and apply knowledge and understanding of specific and complex risks relevant to HRBs to the development and application of risk management frameworks and safe systems of work 2c. Apply statutory processes and procedures to HRBs 3. Understand the principles of sustainable development and apply them in their work 4. Carry out and record the Continuing Professional Development (CPD) necessary to maintain and enhance competence in HRBs 5. Understand the ethical issues that may arise in their role and carry out their responsibilities in an ethical manner

Continuing Professional Development

Continuing Professional Development (CPD) is essential for maintaining and enhancing the required competence and commitment, as well as for developing new competences. This obligation underpins the value of the professional titles of Engineering Technician HRB, Incorporated Engineer HRB or Chartered Engineer HRB, and enables society to have confidence in the engineering profession.

CPD has several purposes:

- To assure continuing competence in a current job
- To prepare for a different role
- To follow a longer-term career development plan
- To enhance professionalism in a wider context than a specific job role.

More details on the nature, purpose and value of CPD can be found in the CPD Policy Statement. For more information please see: www.engc.org.uk/cpd

CPD Code for Registrants

Engineering professionals should take all necessary steps to maintain and enhance their competence through CPD. In particular, they should:

- Take ownership of their learning and development needs and develop a plan to indicate how they might meet these, in discussion with their employer, as appropriate
- Carry out a variety of development activities, both in accordance with this plan and in response to other opportunities which might arise
- Record their CPD activities
- Reflect on what they have learned or achieved through their CPD activities and record these reflections
- Evaluate their CPD activities against any objectives they have set and record this evaluation
- Review their learning and development plan regularly, following reflection and assessment of future needs
- Support the learning and development of others through activities such as mentoring and sharing professional expertise and knowledge

At Professional Review, all applicants will need to demonstrate how they meet their CPD obligations and show that they understand that this requires an ongoing commitment. Requirements for revalidation of competence can be found on page 20

Sampling registrants' CPD records

The Licensees undertake annual random samples of professionally active registrants' CPD records and provide appropriate feedback, as described in the Engineering Council's Regulations for Registration (RfR).

HRB Registrants who are also on the Principal Register will be subject to CPD sampling. However, it is likely that a CPD record prepared for HRB revalidation would satisfy a random CPD sample, and vice versa.

Registrants who are not professionally active (eg retired or on a career break) may request exemption from a sample. The intention behind CPD sampling is not to police registrants, but to encourage a culture in which registrants will naturally engage in CPD and take ownership of their own learning and development.

Professional and Ethical Behaviour

Statement of Ethical Principles

Engineering professionals work to enhance the wellbeing of society. In doing so they are required to maintain and promote high ethical standards and challenge unethical behaviour.

This Statement of Ethical Principles, published by the Engineering Council and the Royal Academy of Engineering, lists four fundamental principles to guide engineers and technicians in their professional life:

- Honesty and integrity
- Respect for life, law, the environment and public good
- Accuracy and rigour
- Leadership and communication

These express the beliefs and values of the profession and are explained in the Statement of Ethical Principles.

For more information please see: www.engc.org.uk/ethics

Guidance for Licensee Codes of Professional Conduct

All registrants are expected to observe the requirements of the Code of Professional Conduct (the Code) of the Licensee they have joined. This Code of Professional Conduct places a personal obligation on its members to act with integrity and in the public interest, in accordance with the Statement of Ethical Principles.

Each Licensee will have appropriate disciplinary processes in place to address breaches of their Code of Professional Conduct.

For more information please see: www.engc.org.uk/conduct

Guidance on Risk

This guidance, published by the Engineering Council, lists six principles to guide and motivate professional engineers and technicians in identifying, assessing, managing and communicating about risk.

For more information please see: www.engc.org.uk/risk

Guidance on Sustainability

This guidance, published by the Engineering Council, lists six principles to guide and motivate professional engineers and technicians when making decisions for clients, employers and society which affect sustainability.

For more information please see: www.engc.org.uk/sustainability

Guidance on Whistleblowing

This guidance, published by the Engineering Council, explains what whistleblowing is and the processes that engineers and technicians should follow when confronted with a potential whistleblowing situation:

For more information please see: www.engc.org.uk/whistleblowing

Guidance on Security

This guidance, published by the Engineering Council, lists six key principles to guide engineers and technicians in identifying, assessing, managing and communicating issues about security.

For more information please see: www.engc.org.uk/security

The Engineering Council reviews its guidance periodically and welcomes comments about this. Licensees may use this to assist them in developing guidance for their members. For the latest information please see the Engineering Council website: www.engc.org.uk

International Activity

To ensure that professionally registered engineers' skills are recognised internationally, the Engineering Council is active within a number of multilateral mutual recognition agreements with other national engineering bodies. These agreements establish internationally benchmarked standards which allow signatory bodies to recognise each other's academic and professional qualifications, aiding mobility. In particular, the Engineering Council was a founder member of the Washington Accord and has subsequently worked with international partners to develop further agreements. The governance of these sits within the International Engineering Alliance (IEA).

The Engineering Council is a member of:

- The Agreement for International Engineering Technicians (AIET)
- The Dublin Accord (DA)
- The International Engineering Technologists Agreement (IETA)
- The International Professional Engineers Agreement (IPEA)
- The Sydney Accord (SA)
- The Washington Accord (WA)

The Engineering Council is a member of the European Network of Accreditation of Engineering Education (ENAEE), which authorises accreditation and quality assurance agencies to award the EUR-ACE® label to accredited engineering degree programmes. In addition, the Engineering Council works within the European Federation of National Engineering Associations (FEANI) to strengthen the voice of engineers at the European level.

For more information please see: www.engc.org.uk/international

Glossary

AAQA	**Approval and Accreditation of Qualifications and Apprenticeships**. One of the Standards which the **Engineering Council** publishes, along with **AHEP**, **ICT*Tech* Standard**, **RfR** and **UK-SPEC**. AQAA sets out the standards and learning outcomes which must be met for qualifications and apprenticeships to be **approved** for **registration** at all levels, ie **EngTech** or **ICT*Tech***, **IEng** and **CEng**. Previously known as AQAH (Approval of Qualifications and Apprenticeships Handbook). See: www.engc.org.uk/aaqa
Accredited / Accreditation	A process of peer review of a programme in a specified location against published learning outcomes and/or **competences**, including a review of delivery, assessment and facilities. This usually applies to programmes that are not assured externally. This usually involves a visit from a team of professional engineers nominated by **Licensees**. See also: **Approved / Approval**.
AHEP	**Accreditation of Higher Education Programmes**. One of the Standards which the **Engineering Council** publishes, along with **AAQA**, the **ICT*Tech* Standard**, **RfR** and **UK-SPEC**. Working in line with **UK-SPEC**, AHEP sets out the standards for the **accreditation** of higher education programmes in engineering. It also outlines the application process for universities that wish to secure or maintain accreditation of their programmes. Accreditation is carried out by **Licensees** in accordance with these requirements. See: www.engc.org.uk/ahep
AIET	The **Agreement for International Engineering Technicians** is an agreement which works to ensure that professionally registered Engineering Technicians' **competence** is recognised internationally. See International Activity on page 120 or www.ieagreements.org/aiet
Approved / Approval	The process of peer reviewing a programme against published learning outcomes. This involves a review of a qualification or an apprenticeship programme by a number of **professionally registered** engineers. See also: **Accredited / Accreditation**
AQAH	See **AAQA**.

BS 8670	Relates to 'Built environment – Core criteria for building safety in competence frameworks – Code of practice' See: www.bsigroup.com
Building Safety Act 2022 (BSA)	Gives **residents** and **homeowners** more rights, powers, and protections resulting in safer homes. It overhauls existing regulations and makes clear how residential buildings should be constructed, maintained, and made safe. See: www.legislation.gov.uk
Building life cycle	This includes selecting appropriate techniques, procedures and methods to design, construct, commission, operate, maintain, refurbish / repurpose, decommission, demolish and recycle. These can apply to building engineering processes, systems, services and products. This ensures compliance with relevant legislation, regulations, statutory guidance and standards of performance applicable to HRBs.
Building Safety Regulator (BSR)	The BSR oversees the safety and standards of all buildings, helping and encouraging the built environment industry and building control professionals to improve their competence. Leading implementation of the new regulatory framework for higher-risk buildings. See: www.hse.gov.uk/building-safety/regulator.htm
CDM Regulations	**Construction (Design and Management) Regulations 2015**, known as CDM Regulations or CDM 2015, are UK regulations governing construction projects of any type and size. CDM Regulations define responsibilities and place legal duties, enforceable by criminal law, on all parties involved in a construction project.
Chartered Engineer (CEng)	See **Principal Register**.
Chartered Engineer HRB	One of the professional titles available to individuals who meet the required standards of **competence** and **commitment**. See page 81.
Code of Professional Conduct	Every **Licensee** and **Professional Affiliate** which is licensed by the **Engineering Council** will have its own Code of Professional Conduct. One of the requirements of **professional registration** is demonstrating compliance with the appropriate organisation's Code. See page 119.
Commitment	A set of values, rules of conduct, and obligations that maintain and enhance the reputation of the engineering profession and the individual. Demonstrating both **competence** and commitment is part of the requirement to become **professionally registered** with the **Engineering Council**.

Competence	The ability to carry out appropriate tasks to an effective standard. Achieving competence requires the right level of underpinning knowledge, understanding and skill, as well as a professional attitude. Demonstrating both competence and **commitment** is part of the requirement to become **professionally registered** with the **Engineering Council**.
CPD	**Continuing Professional Development.** The systematic acquisition of knowledge and skills, and the development of personal qualities, to maintain and enhance professional **competence** for current and future roles. All members of **Licensees** have an obligation to carry out CPD and to support the learning of others. See: www.engc.org.uk/cpd
Credit and Qualifications Framework for Wales	The Credit and Qualifications Framework for Wales covers learning from the very initial stages (Entry 1, 2 and 3) to the most advanced (Level 8). It is managed by a strategic operational partnership comprising the Welsh Government, Higher Education Funding Council for Wales (HEFCW) and Qualifications Wales.
CROSS	Collaborative Reporting for Safer Structures UK (CROSS-UK) is a confidential reporting system which allows professionals working in the built environment to report on fire and structural safety issues. These are published anonymously to share lessons learned, create positive change, and improve safety.
Discipline Annexes	Discipline Annexes are to be used alongside **UK-SPEC HRB** for assessment of discipline-specific criteria in Fire, Structural, Building Services and Facades engineering. See: https://www.engc.org.uk/uk-spec-hrb
Documented Evidence	The written and documented evidence of experience and qualifications which is submitted for a **Professional Review** when applying for **professional registration.**
Dublin Accord (DA)	An international agreement among the bodies responsible for recognising programmes and qualifications for **Engineering Technicians**. It establishes a benchmark for Engineering Technician education across those bodies, and recognises the equivalence of **accredited** or **approved** Engineering Technician programmes. See International Activity on page 120 or www.ieagreements.org/dublin
Engineering Council	The UK regulatory body for the engineering profession. The Engineering Council sets and maintains internationally recognised standards of professional **competence** and ethics and holds the UK register of professional engineers and technicians.
ENGINEERS EUROPE	Formerly the **European Federation of National Engineering Associations**. The **Engineering Council** is the UK member. See: https://www.engineerseurope.com
Engineering Technician (EngTech)	See **Principal Register**.

Engineering Technician HRB	One of the professional titles available to individuals who meet the required standards of **competence** and **commitment**. See page 23.
EQFM	The **European Quality Foundation Model** for continuous improvement.
EUR-ACE®	A European quality label for recognising **accredited** engineering degree programmes at Bachelors and Masters level. The **Engineering Council** is authorised to award the EUR-ACE® label. See: www.enaee.eu/eur-ace-system
HASAW	**Health and Safety at Work**. Specifically, the 1974 Health and Safety at Work Act, the primary legislation covering occupational health and safety in the UK.
Higher-risk building (HRB)	For a building to qualify as a higher-risk building it will meet either the height (18 metres or higher) or storeys (seven storeys or more) threshold, and will contain at least two residential units, or be a care home or hospital, as specified in the regulations set out at: www.legislation.gov.uk
HNC	**Higher National Certificate**.
HND	**Higher National Diploma**.
ICT*Tech*	Information and Communications Technology Technician. See **Principal Register**.
IEA	**International Engineering Alliance**. A partnership of international organisations across seven agreements that aim to facilitate the recognition of engineering educational qualifications and professional **competence**. See International Activity on page 120 or www.ieagreements.org
IETA	The **International Engineering Technologists Agreement** is an agreement which works to ensure that professionally registered engineering technologists' **competence** is recognised internationally. See International Activity on page 120 or www.ieagreements.org/ieta
Incorporated Engineer HRB	One of the professional titles available to individuals who meet the required standards of **competence** and **commitment**. See page 49.
Incorporated Engineer (IEng)	See **Principal Register**.
Individual Assessment	The route to **professional registration** for individuals without recognised qualifications. See page 14. The other way to achieve professional registration is through **Recognised Qualifications**.
International Professional Engineers Agreement	The International Professional Engineers Agreement is an international agreement for the purposes of recognising substantial equivalence of professional **competence** in engineering. See International Activity on page 120 or www.ieagreements.org/ipea
ISO	The **International Organization for Standardization**. ISO publishes documents such as ISO 45001 the international standard for occupational health and safety and ISO 9000, the international quality standards on quality management and quality assurance.

Joint Competent Authority (JCA)	Consists of local authority building standards, fire and rescue authorities, and the Health and Safety Executive. Proposed by Dame Judith Hackitt in her review of building regulations and fire safety.
Licensee	An engineering membership organisation which is licensed by the **Engineering Council** to assess applicants for **professional registration**. Some Licensees are also licensed to approve or accredit programmes of learning. Licensees are sometimes known informally as Professional Engineering Institutions or PEIs. For a full and current list of Licensees see: www.engc.org.uk/licensees
May	In the context of the requirements set out in the Standards, 'may' indicates there is permission to do something.
National Engineering Bodies	National engineering bodies responsible for regulation of the profession, such as the **Engineering Council**, or the national academy such as the **Royal Academy of Engineering**.
NVQ	**National Vocational Qualification**. NVQs are qualifications developed and **accredited** according to criteria set out nationally, and that are achieved through assessment and training. In Scotland, they are known as Scottish Vocational Qualification (**SVQ**). To achieve an NVQ, applicants must prove they have the ability to carry out their job to the required standard. NVQs are based on National Occupational Standards that describe the 'competencies' expected in any given job role.
Occupant	An individual who occupies a house, office, vehicle on a regular basis. The occupant does not extend to living in or use the space as their own.
Owner/ homeowner	The legal owner or leaseholder of a property or individual dwelling.
PEI (Professional Engineering Institution)	See **Licensee**.
Principal Register	Register of engineers and technicians who have demonstrated, via a peer review process by a **Licensee,** that they have met the profession's Standards of **commitment** and **competence**, assessed against **UK-SPEC** or the ICT *Tech* Standard. Individuals who have been awarded a professional registration title may use the relevant post-nominal, ie **Engineering Technician (EngTech)**, **Incorporated Engineer (IEng)**, **Chartered Engineer (CEng)** or **Information and Communications Technology Technician (ICT *Tech*)**.
Post-nominals	Letters placed after a person's name which indicate that the person holds a certain position, academic degree, professional **accreditation**, office or honour. Examples of engineering post-nominals include those given for **registrants** on the **Principal Register, ICT *Tech***, **EngTech**, **IEng** or **CEng**.

Professional Affiliate	An incorporated body or engineering institution which is closely associated with, but not licensed by, the **Engineering Council**. It **may** enter into an agreement with a **Licensee** to process its members for **professional registration**. For a full and current list of Professional Affiliates see: www.engc.org.uk/affiliates
Professional development	The process by which an individual gains professional **competence**. It **may** take place through formal and informal learning, and workplace training and experience.
Professional registration	The process in which an individual is admitted to the **Engineering Council**'s Register as a **Chartered Engineer HRB**, **Incorporated Engineer HRB**, **Engineering Technician HRB, Engineering Technician (EngTech)**, **Incorporated Engineer (IEng)**, **Chartered Engineer (CEng) or an Information and Communications Technology Technician (ICT*Tech*)**. To achieve professional registration the individual must demonstrate, via a peer review process by a **Licensee**, that they have met the profession's Standards of **commitment** and **competence**. Individuals who have been awarded a professional registration title on the **Principal Register**, **may** use the relevant **post-nominal**.
Professional Review	A peer assessment process to decide whether an individual has met the requirements for **registration**. Professional Review is a holistic assessment of the applicant's **competence** and **commitment** against the relevant sections of **UK-SPEC HRB**. See page 19.
Professional Review Interview	A peer assessment process to assess whether an individual has met the requirements for **professional registration**. It is a holistic assessment of the applicant's **competence** and **commitment** against the relevant sections of **UK-SPEC HRB**. The Professional Review Interview is conducted by suitably qualified **registrants**, who make a recommendation whether the applicant has demonstrated the necessary competencies to achieve professional registration. See page 19.
Recognised Qualifications	Qualifications that are recognised as delivering the appropriate learning outcomes to develop an individual's **underpinning knowledge and understanding** for **professional registration**.
Registrant	An individual who holds a **professional registration** title such as **Chartered Engineer HRB**, **Incorporated Engineer HRB, Engineering Technician HRB, CEng**, **IEng**, **EngTech** or **ICT*Tech***.
Registration	See **Professional Registration**.
Resident	A person who lives somewhere permanently or on a long-term basis.

RfR	**Regulations for Registration**. One of the Standards which the **Engineering Council** publishes, along with **AAQA**, **AHEP**, ICT*Tech* Standard, **UK-SPEC** and **UK SPEC HRB**. **RfR** sets out the rules, for **Licensees**, on the process of awarding **professional registration** titles such as **Chartered Engineer HRB**, **Incorporated Engineer HRB, Engineering Technician HRB, or CEng**, **IEng**, **EngTech** or **ICT*Tech***.
Revalidation	Procedure to periodically revalidate the competence levels of UK-SPEC HRB registrants. See page 16.
Royal Academy of Engineering (RAEng)	The UK's national academy for engineering that works to advance and promote excellence in engineering. RAEng provides analysis and policy support relating to business and education, invests in the UK's research base to underpin innovation, and works to improve public awareness and understanding of engineering. See: www.raeng.org.uk
Royal Charter	A formal document issued by the monarch granting rights and powers to an individual or an organisation.
SCQF	The **Scottish Credit and Qualifications Framework**. For more information see: www.scqf.org.uk
Shall	In the context of the requirements set out in the Standards, 'shall' indicates there is a requirement to do something (ie it is mandatory).
Should	In the context of the requirements set out in the Standards, 'should' indicates a recommendation to do something.
Statement of Ethical Principles	Published by the **Engineering Council** and the **Royal Academy of Engineering.** Engineering professionals **should** read the Statement of Ethical Principles in conjunction with their relevant **Code of Professional Conduct**. See page 119 or www.engc.org.uk/ethics
SVQ	Scottish Vocational Qualification. See also **NVQ.**
Sydney Accord (SA)	An international agreement among the bodies responsible for **accrediting** engineering technologist degree (**IEng**) programmes. It establishes a benchmark for engineering technologist education across those bodies, and recognises the equivalence of **accredited** engineering technologist programmes. See International Activity on page 120 or www.ieagreements.org/sydney
UK-SPEC	**UK Standard for Professional Engineering Competence and Commitment**. This document, which sets out the **competence** and **commitment** requirements for **registration** as an **EngTech**, **IEng** or **CEng**. UK-SPEC is one of the Standards which the **Engineering Council** publishes, along with **AAQA**, **AHEP**, the **ICT*Tech* Standard** and **RfR**.

UK-SPEC HRB	**The UK Standard for Professional Engineering Competence and Commitment Contextualised for Higher-Risk Buildings UK-SPEC HRB**. The document sets out the competence and commitment requirements for registration as an **Engineering Technician HRB**, **Incorporated Engineer HRB** or **Chartered Engineer HRB**. UK-SPEC HRB is one of the Standards the Engineering Council publishes, along with **UK-SPEC**, **AAQA**, **AHEP**, the **ICT*Tech* Standard** and **RfR**.
Underpinning Knowledge and Understanding	The knowledge and understanding of the principles of science, mathematics and engineering theory that are required to form the basis of engineering **competence** at a professional level.
Washington Accord (WA)	An international agreement among the bodies responsible for **accrediting** engineering degree (**CEng**) programmes. It establishes and benchmarks the standard for professional engineering education across those bodies, and recognises the equivalence of **accredited** engineering progrogrammes. See International Activity on page 120 or www.ieagreements.org/washington

Notes

T +44 (0)20 3206 0500
F +44 (0)20 3206 0501
info@engc.org.uk
www.engc.org.uk
Registered Charity: 286142