

# GUIDANCE NOTES

## ENG TECH PROFESSIONAL REGISTRATION

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The first step to completing your Professional Review  
with the Institute of Highway Engineers

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Guidance notes for:

### **Engineering Technician**

(Standard and Individual Route)

Professional Registration



## About this booklet

This set of guidance notes is your first step in gaining Engineering Technician professional registration through the Institute of Highway Engineers. This booklet is essential for both Standard and Individual route EngTech professional review applications. It provides you with information and guidance to ensure the relevant paperwork is completed to the required standard as quickly and easily as possible. Please read this booklet in conjunction with the EngTech application form as the two are designed to go hand in hand.

## Before you begin

In order to obtain Eng Tech registration you will need to be an existing IHE member. Please refer to our website at [www.theihe.org/membership](http://www.theihe.org/membership) if you need to apply for IHE membership.

To gain Engineering Council registration, engineers and technicians prove their competence and commitment in a professional review of their portfolio submission to the IHE. Anyone who meets the competence and responsibility standards can become an EngTech – there's a route to suit all competent technicians.

Many will have a BTEC, NVQ Level 3 (or equivalent) or SVQ Level 6 equivalent qualification. Others will have gained the necessary skills, knowledge and experience through a non-academic route because of their practical experience in the highways industry.

There are many benefits of EngTech registration, these include:

- Tangible evidence to your employer and potential employers of your proven competence as a professional technician.
- Recognition by the worldwide engineering community.
- Ongoing career progression, as you establish your professional credentials within the industry.
- The use of the EngTech MIHE post-nominals after your name.
- Gives you an advantage over those who have no professional registration.
- An important stepping stone in the process to becoming IEng or CEng.

As a professional member of the Institute you'll have the same access to information and networking opportunities as Incorporated and Chartered Engineers and can progress to Fellow EngTech when you have been an EngTech for 5 years and meet the IHE Fellow requirements.

This booklet provides guidance and clarification of the five requirements of Eng Tech standard contained within the UK-SPEC of UK Standard for Professional Engineering Competence laid down by the Engineering Council. These are:

- A. Use engineering knowledge and understanding to apply technical and practical skills.
- B. Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services.
- C. Accept and exercise personal responsibility.
- D. Use effective communication and interpersonal skills.
- E. Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the engineering profession and the environment.

## Completing the application form

To keep your application as clear as possible, we would request the following:

- If completing this form by hand, please write in BLOCK CAPITALS and in black ink.
- Please complete only the relevant fields – We have included guidance as to which sections should be left blank if they are not relevant.
- You should aim to complete this form with as much detail as possible. This will reduce the instances where we need to ask you for more information at a later date.
- Remember to include any required documentation with your application when you see this symbol – Please tick the relevant box on the checklist at the back of the application form.



Please post your completed application form, along with your submission, to:

**Membership, Institute of Highway Engineers, Floor 32–34, 286 Euston Road, London NW1 3DP.**

## And finally

We hope you find the pathway to Engineering Technician application a simple process. The Institute of Highway Engineers is committed to helping you achieve the career benefits that professional registration can bring. Please contact us on: 020 3551 5681 or email us at [professionalreviews@theihe.org](mailto:professionalreviews@theihe.org) if we can provide any assistance or guidance at any stage of your Eng Tech application.

## Section A

In this section we give some general guidance and background to assist you in submitting your EngTech application with the IHE.

### 1. Entry routes and requirements

Before you start compiling your EngTech submission, you will need to establish which route of application you're going to take. Two routes are available, 'standard' and 'individual'. Choosing which one is applicable for you will depend on the training and qualifications you have undertaken so far in your career. Both routes will require you to demonstrate your competency in applying proven techniques to solve problems and supervise works or people.

#### Standard Route

If you have a National Certificate or Diploma in engineering or an equivalent National Vocational Qualifications Framework level 3 qualification such as a NVQ3, ONC or HNC in engineering, and are working at the right level, you should use this route to apply for your EngTech with the IHE. This pathway recognises your previous qualifications and the competency you have demonstrated in achieving these.

Typical level 3 qualifications which are also acceptable include:

- National Diploma or HNC in engineering or construction
- A Foundation Degree in engineering or construction
- A level 3 Diploma in Construction or Engineering with additional maths
- Bath Highways Open Tech Professional Development Diploma (5 units including a project)
- University of Derby Diploma in Asphalt Technology

All NVQ or SVQ level 6 qualifications should be relevant to your field of work and relatively recent. The IHE considers level 3 qualifications these subject areas to be acceptable:

- Transport Technical Support
- Construction Site Supervision
- Built Environment Design
- Laboratory operations
- Plant Supervision
- Site Inspection
- Road Safety (Engineering Pathway)
- Transportation (NTQ)
- Technical Design
- Design & Drafting
- Site Technical Support
- Highway Maintenance
- Specialist Operations
- Contracting Construction Operations

Applicants don't usually get called to interview, however, the IHE reserves the right to interview applicants to maintain the integrity of the Professional Review process.

#### Individual Route

If you have other qualifications which do not fulfil the Standard Route criteria, or none at all, but can demonstrate competence and commitment to the appropriate depth and level through your work experience, then you can be individually assessed. You will need to provide similar documentation as for the Standard Route but you will need to explain more about your work and demonstrate your engineering knowledge.

Typically applicants for this route have:

- Work experience at supervisory level but few or no qualifications
- Level 2 Entry Level qualification in an appropriate engineering discipline
- NC or ND in building
- Nottingham Trent's Highway and Traffic Engineering certificate

Applicants don't usually get called to interview, however, the IHE reserves the right to interview applicants to maintain the integrity of the Professional Review process.

You will need to indicate in the left hand column next to each assessment question where you have met the Engineering Council Learning Outcomes.

## 2. Getting started

### Help and support – Mentors

Getting the right help and support is crucial to ensuring you are successful in achieving EngTech registration.

You are responsible for your own development and pathway to producing your EngTech submission, but support from a colleague or mentor enables you to try out ideas and keep a focus on objectives. Good mentors will try to ensure that the engineers they work with gain confidence and independence as a result of their one-to-one relationship, and are empowered to take full and effective responsibility for themselves.

The Institute of Highway Engineers has produced a short booklet explaining the roles and responsibilities of both mentors and applicants. Please refer to our website at <https://members.theihe.org/page/formsandguidance> for more information.

### Creating your folder

All submissions must be presented in a single ring binder or lever arch folder. You should use file dividers to enable us to easily identify the relevant parts of your evidence folder and cross reference these with the section headings in the EngTech application form.

The coversheet provided in section 1 of the application form must be affixed to the front of your folder.

*Please note: Submissions presented in any other style of folder or binding, or without the coversheet affixed will be returned to you.*

Where required, you should give sufficient evidence using at least two schemes from your work experience to show that you have met the required objectives. No more than half a dozen small evidential documents per question are required and excess evidence is likely to be rejected.

## 3. IHE EngTech workshops

If you would like more help, support and guidance in making your EngTech submission, the IHE offer EngTech workshops throughout the country. These specially tailored workshops comprise two parts and offer one to one mentoring by our experienced team of senior reviewers. Each workshop will guide you through the application process so that by the conclusion of the second workshop you should have not only completed your application in full but also submitted your paperwork for review.

To attend these workshops, you will need to commit to 2 full days away from the office, complete a few simple forms about yourself prior to workshop 1, undertake an hour or so preparation activity prior to workshop 2 and carry out assembly of evidence during the 4-week period between the workshop sessions.

Further detail can be found on the main IHE website.

## Section B

In this section we will guide you through completing the IHE EngTech application form. The application form pulls together your personal details, aims to assess some of your skills and knowledge, as well as providing a checklist for your additional documents.

Guidance on all sections of the application form is detailed below.

### 1. The coversheet

Please complete the coversheet in section 1 at the front of the application form. This must be affixed to the front of your folder.

All submissions must be presented in a single ring binder or lever arch folder. You should use file dividers to enable us to easily identify the relevant parts of your evidence folder. These should cross reference with the relevant sections of this form.

*Please note: Submissions presented in any other style of folder or binding, or without the coversheet attached will be returned to you.*

### 2. Your details

Please complete all fields in this section.

### 3. Current employment details

Please complete all fields in this section.

### 4. Area of specialism

Please tick *one* of the listed categories of highway specialism that best describes the specialist area of your EngTech submission. This information is essential for us to identify reviewers in your field that can assess your submission.

### 5. Route of application

Use this section to indicate whether you hold the necessary qualifications to apply via the Standard Route or if you will be making an application via the Individual Route.

### 6. Your CV

We require an up-to-date copy of your CV covering your employment, academic and training history. This CV should be no more than two pages in length.

### 7. Higher and further education

Please complete this section in chronological order as per the instructions on the application form.

### 8. Your qualifications

We require copies of your certificates for the further and higher education courses you have listed in section 7. These should be authenticated (signed and dated) by either your Line Manager, Proposer or Secunder who can confirm that these are true copies of the original certificates. Do not send us original certificates as these will not be returned to you.

## 9. Career history

Please complete this section in chronological order as per the instructions on the application form.

## 10. Your current job

We require a copy of your current Job Description to be attached with your application. Self employed applicants should produce a one page document describing your direct clients.

## 11. Mapping your organisation

You should supply the IHE with a clear organisation chart that identifies the structure of your organisation. This organigram should be of a hierarchical design and you should clearly highlight your own position on it. Self employed applicants do not need to complete this section.

## 12. Continuing Professional Development

Continuing Professional Development is the systematic maintaining, improving and broadening of your knowledge and skills and the development of personal qualities necessary for the execution of professional duties throughout your working life. Most employers require you to keep a personal CPD record and you can submit this as evidence in your folder. If your employer does not require this, a blank CPD record form can be downloaded from the members area of our website at <https://members.theihe.org/page/MYCAREERPATH> (log in required)

The IHE recommends you record your CPD using the Engineering Council Mycareerpath tool. If you use this, please export your CPD record and print it out. It can then be included in your evidence folder.

Please ensure you submit evidence of Continuing Professional Development *and* demonstrate how you intend to meet your obligations to CPD in the future by submitting a forward plan.

More information on CPD can be found in the members area of our website at <https://members.theihe.org/page/MYCAREERPATH> (log in required).

*This should be essential reading before making your professional review submission.*

## 13. Assessment questions

Competence is the ability to carry out a task to the required standards. To achieve this you will need to demonstrate that you have the level of knowledge and skills required to achieve EngTech registration. Competence is developed by a combination of formal and informal learning, training and experience.

The Engineering Council expect professional registrants to be competent in five broad areas:

- A** Knowledge and understanding
- B** Design and development of processes, systems, services and products
- C** Responsibility, management or leadership
- D** Communication and inter-personal skills
- E** Professional commitment

The three assessment questions are designed to provide you with an opportunity to demonstrate the Engineering Council statement of competence as detailed in the grid we have provided in this booklet. Please read the statements and guidance carefully and bear this in mind as you answer each of the assessment questions. Where you feel you have met an area of the Engineering Council statement of competence in your answer please indicate this in the right hand margin provided.

Your answers to the three assessment questions in the EngTech application form depend on the route you will be applying through.

## **STANDARD ROUTE** (Approved Level 3 Qualifications)

Your formal educational qualifications demonstrate the necessary knowledge that underpins each of the five competences. Therefore, you should aim to complete each question using approximately 500 words per question. Sufficient evidence should be submitted to demonstrate achievement of the competency statements. Not more than half a dozen small evidential documents per question are required.

## **INDIVIDUAL ROUTE** (without exemplifying qualifications)

Applicants without exemplifying qualifications applying via the Individual Route should complete the three questions and demonstrate the use and understanding of engineering principles. Each question should be completed using approximately 750-1000 words. No more than half a dozen small evidential documents per question are required. You will need to indicate in the left hand column next to each assessment question where you have met each Learning Outcome.

As an Individual Route candidate, you will need to demonstrate the educational Learning Outcomes in your submission that Standard Route applicants have achieved by having an exemplifying qualification. These Learning Outcomes are six areas of engineering learning you will need to demonstrate through the three assessment questions and are as follows:

### **1. Science and mathematics**

Engineering is underpinned by science and mathematics.

As an EngTech you will need to demonstrate:

- 1.1 A descriptive, formula-based knowledge and understanding of the scientific principles underpinning relevant current technologies.
- 1.2 Knowledge and understanding of relevant mathematics, including numerical and data analysis, that is necessary to support the application of technical and practical skills.

### **2. Engineering analysis**

Engineering analysis involves the application of engineering concepts and tools to the solution of engineering problems.

Engineering Technicians will need:

- 2.1 To understand the limitations of standard tests and measurements relevant to their field of activity.
- 2.2 Know-how to use the results of engineering analysis for the purpose of developing solutions to well-defined engineering problems.
- 2.3 To apply appropriate solutions to well-defined engineering problems using methods specific to their field of activity.

### **3. Design**

Design at this level involves the awareness of an economically viable product, process or system to meet a defined need.

Engineering Technicians will need:

- 3.1 Awareness of business, customer, and user needs.
- 3.2 Awareness of constraints on the design process including environmental and sustainability limitations, ethical, health, safety, security and risk issues, intellectual property, codes of practice and standards.
- 3.3 Knowledge that supports design for the purpose of developing solutions to well-defined engineering problems.
- 3.4 Know-how to contribute to the design and/or the design process.
- 3.5 Know-how to communicate their work to technical and non-technical audiences.



#### **4. Economic, legal, social, ethical and environmental context**

Engineering activity can have impacts on the environment, on commerce, on society and on individuals. Engineering Technicians therefore need the skills to manage their activities and to be aware of the various legal and ethical constraints under which they are expected to operate, including:

- 4.1 Understanding the need for a high level of professional and ethical conduct in engineering and a knowledge of professional codes of conduct.
- 4.2 Knowledge of the commercial, economic and social context of the engineering processes.
- 4.3 Understanding the requirement for engineering activities to promote sustainable development.
- 4.4 Awareness of relevant legal requirements governing engineering activities, including personnel, health & safety, contracts, intellectual property rights, product safety and liability issues.
- 4.5 Awareness of risk issues, including health & safety and environmental risk.

#### **5. Engineering practice**

This is the practical application of engineering knowledge and skills. This can include:

- 5.1 Know-how to use relevant materials, equipment, tools, processes, or products.
- 5.2 Knowledge of procedures and practices for industry standard operations and processes.
- 5.3 Know-how to use and apply information from technical literature.
- 5.4 Know-how to use appropriate codes of practice and industry standards.
- 5.5 Awareness of quality issues and the potential for continuous improvement.
- 5.6 Awareness of team roles and the ability to work as a member of an engineering team.

#### **6. Additional general skills**

Technicians must have developed transferable skills, additional to those set out in the other learning outcomes, and that will be of value in a wide range of situations, including the ability to:

- 6.1 Apply their skills in problem solving, communication, information retrieval, working with others and the effective use of general IT facilities.
- 6.2 Plan self-learning and improve performance, as the foundation for lifelong learning/CPD
- 6.3 Plan and carry out a personal programme of work.
- 6.4 Exercise personal responsibility, as an individual or as a team member.

Please indicate where you feel you have met each Learning Outcome by indicating in the left hand margin of your answer to each of the assessment questions.

## Statements of Competence and Commitment

In your responses to the three assessment questions you will need to reference all the Statements of Competence and Commitment defined in the Engineering Council UK-SPEC. Over the course of answering the three assessment questions, you should be able to address all fourteen competencies at least once.

The following grid sets out the Engineering Council's Statements of Competence and Commitment with IHE guidance alongside and suggests typical documents you could select to illustrate your experience.

A. Use engineering knowledge and understanding to apply technical and practical skills.		
Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
A1. Review and select appropriate techniques, procedures and methods to undertake tasks.	The reviewers will be looking for evidence that you have the know-how to do the job and were able to go beyond the immediate requirements and to use your initiative and your experience to solve a problem or improve a process. You should be familiar with the techniques, procedures and methods relevant to your work, and be able to show you can use basic engineering principles appropriately.	<ul style="list-style-type: none"> <li>• Knowledge of design/ construction manuals.</li> <li>• Knowledge of methods of measurement.</li> <li>• Knowledge of specifications.</li> </ul>
A2. Use appropriate scientific, technical or engineering principles.	<p>In your submission, show you:</p> <ul style="list-style-type: none"> <li>• Know which procedures to apply to each task.</li> <li>• Use your knowledge to give technical advice.</li> <li>• Identify problems or improvements and can identify possible options, explaining why you picked the 'right one'. You could describe a task or scheme which did not quite work and explain why along with the choices you made and the outcome.</li> <li>• You could refer in your submission to the TAs, TDs, NRSWA, Traffic Sign Regs, IANs, Codes of Practice, Highways Act and other relevant legislation, Conditions of Contract, standard computer programmes etc. relevant to your work.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of asset management techniques and maintaining asset registers.</li> <li>• Preparing drawings using traditional or contemporary techniques.</li> <li>• Knowledge of modelling packages and applications.</li> <li>• Understanding of the principles of data collection and validation.</li> <li>• Knowledge of relevant guidance, policy, legislation and Codes of Practice.</li> </ul>
B. Contribute to the design, development, manufacture, construction, commissioning, operation or maintenance of products, equipment, processes, systems or services.		
Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
B1. Identify problems and apply appropriate methods to identify causes and achieve satisfactory solutions.	<p>In your submission, show you:</p> <ul style="list-style-type: none"> <li>• Have applied your technical expertise at an appropriate level to identify the source of a problem and decided how best to solve it.</li> <li>• Assist in identifying client, user and community requirements.</li> <li>• Carry out surveys.</li> </ul>	<ul style="list-style-type: none"> <li>• Engineering drawings.</li> <li>• Desk top studies.</li> <li>• Model runs.</li> <li>• Specifications.</li> <li>• Risk method statements.</li> <li>• Spreadsheets.</li> </ul>
B2. Identify, organise and use resources effectively to complete tasks, with consideration for cost, quality, safety, security and environmental impact.	<ul style="list-style-type: none"> <li>• Exercise technical judgement and give guidance.</li> <li>• Select appropriate diagnostic tools and methods.</li> <li>• Considered what information, components, people and plant to use.</li> <li>• Manage small schemes and areas of work.</li> <li>• Identify what materials and resources to use.</li> <li>• How to introduce a new method or working.</li> <li>• What precautions you took.</li> <li>• Describe how you have contributed to best practice methods to continuous improvements eg ISO9000.</li> </ul>	<ul style="list-style-type: none"> <li>• Work instructions.</li> <li>• Procurement documents.</li> <li>• Technical calculations.</li> <li>• Road safety audit reports.</li> </ul>

**C. Accept and exercise personal responsibility.**

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
C1. Work reliably and effectively without close supervision, to the appropriate codes of practice.	The reviewers will be looking for evidence of our personal accountability level, and how you personally identified and agreed what had to be done and to what standard on a typical project. They also want to establish how you allocated work, reviewed, progressed and followed up.	<ul style="list-style-type: none"> <li>• Minutes of meetings.</li> <li>• Site notes and instructions.</li> <li>• Site surveys.</li> <li>• Compliance with quality management systems.</li> <li>• Variation orders.</li> </ul>
C2. Accept responsibility for work of self or others.	<p>In your submission, show you:</p> <ul style="list-style-type: none"> <li>• Work efficiently under minimum supervision.</li> <li>• Contribute to planning tasks by identifying and agreeing what had to be done and to what standards on a typical project.</li> </ul>	<ul style="list-style-type: none"> <li>• Programmes of work/ programming works.</li> <li>• Understanding of, and working to, time and budget constraints.</li> </ul>
C3. Accept, allocate and supervise technical and other tasks.	<ul style="list-style-type: none"> <li>• Comply with relevant regulatory and practice requirements.</li> <li>• Make technical decisions and give advice within capabilities.</li> <li>• Take responsibility for your actions within your capabilities, assist, supervise and advise others.</li> <li>• Accept responsibility for completing tasks to time, resources and costs and to quality standards.</li> <li>• Manage yourself.</li> </ul>	<ul style="list-style-type: none"> <li>• Understanding of, and working to, project briefs.</li> <li>• Specifications, drawings and reports.</li> <li>• Appraisals undertaken by your employer.</li> <li>• Written feedback from clients or members.</li> </ul>

**D. Use effective communication and interpersonal skills.**

Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
D1. Use oral, written and electronic methods for the communication in English of technical and other information.	<p>In your submission, show you:</p> <ul style="list-style-type: none"> <li>• Select appropriate ways of communicating eg diagrams, sketches, plans, photographs, internet, audiovisuals, reports.</li> <li>• Communicate fluently verbally and in writing.</li> <li>• Respond effectively and efficiently to received communications.</li> </ul>	<ul style="list-style-type: none"> <li>• Use of correct engineering terminology.</li> <li>• Understanding of delegated responsibilities.</li> <li>• Awareness of contractual obligations.</li> <li>• Use of various media to convey ideas.</li> </ul>
D2. Work effectively with colleagues, clients, suppliers or the public, and be aware of the needs and concerns of others, especially where related to diversity and equality.	<ul style="list-style-type: none"> <li>• Advise and inform others on technical procedures.</li> <li>• Establish and maintain effective working relationships with colleagues, clients and others.</li> <li>• Give clear and accurate instructions.</li> <li>• Take an active part in team meetings.</li> <li>• Meet commitments in an efficient and timely manner.</li> </ul>	<ul style="list-style-type: none"> <li>• Letters, reports, minutes, emails</li> <li>• Drawings, spreadsheets.</li> <li>• Responses to public enquiries.</li> <li>• Work instructions.</li> <li>• Presentation material prepared by you.</li> <li>• Appraisals undertaken by your employer.</li> <li>• Conducting / contributing to public consultations.</li> <li>• Contributing to team / technical meetings.</li> </ul>

E. Make a personal commitment to an appropriate code of professional conduct, recognising obligations to society, the profession and the environment.		
Engineering Council Statement of Competence	IHE Guidance	Examples of evidence
E1. Comply with the Code of Conduct of your institution.	<p>In your submission, show you:</p> <ul style="list-style-type: none"> <li>• Know your organisation's goals and ethos.</li> <li>• Demonstrate your discussion or position on typical ethical challenges.</li> <li>• Behave appropriately and professionally.</li> <li>• Demonstrate integrity.</li> <li>• Base opinions or statements on adequate knowledge and are objective and truthful.</li> <li>• Know the purpose of professional institutions.</li> <li>• Know the duty of an engineer under EC and IHE Codes and Rules of Conduct.</li> <li>• Participate in institution activities particularly supporting your local branch by attending meetings, provide careers/school advice, read journals.</li> <li>• Refer to your company's standing orders, equal opportunities and conduct statements (but do not include them.)</li> <li>• Design or plan safe systems.</li> <li>• Provide evidence of applying current safety requirements.</li> <li>• Select appropriate equipment.</li> <li>• Carrying out risk assessments to identify potential hazards and plan how to deal with them.</li> <li>• Provide examples of good practice.</li> <li>• Work safely and ethically.</li> <li>• Accept responsibility for your own and other's safety.</li> <li>• Are aware of emergency measures.</li> <li>• Show that you have received formal safety instructions relating to your place of work (such as a CSCS safety test in the UK) or an update on safety regulations. An example would be COSHH.</li> <li>• Company safety policy, relevant legislation, codes of practice, transport and road safety good practice.</li> <li>• Assess and control risk to health, safety, society and the environment.</li> <li>• Undertake methodical assessment of risk in specific projects.</li> <li>• Take actions to minimise risk to society or the environments.</li> <li>• Comply with environmental regulations.</li> <li>• Are aware of and adopt, where possible, sustainable practices.</li> <li>• Actively seek to keep up to date by studying new standards or techniques.</li> <li>• Made use of magazines or attended lectures by IHE.</li> <li>• Networking in order to keep abreast of change.</li> <li>• Prepare and maintain a personal action plan.</li> <li>• Keep CPD records of your training and professional development activities.</li> <li>• Give an example of where you have applied ethical principles.</li> <li>• Respect for life, law and the public good.</li> <li>• Responsible leadership.</li> <li>• Listening and informing.</li> </ul>	<ul style="list-style-type: none"> <li>• Knowledge of IHE's Code of Conduct.</li> <li>• Awareness of legal obligations (duty of care).</li> <li>• Awareness of environmental management systems.</li> <li>• Understanding and application of current safety requirements relevant to your own work (e.g. Health &amp; Safety at Work Act 1974, COSHH, CDM 2007, CSCS card, New Roads &amp; Street Works Act 1991, Permits to Dig, Working in Confined Spaces).</li> <li>• Understanding and application of risk assessment methods and actions taken to minimise risk to health, safety, society or the environment.</li> <li>• Environmental awareness.</li> <li>• Active engagement with IHE at a local level CPD record, including reflection on learning.</li> </ul>
E2. Manage and apply safe systems of work.		
E3. Undertake engineering work in a way that contributes to sustainable development.		
E4. Carry out and record CPD necessary to maintain and enhance competence in own area of practice including:		
<ul style="list-style-type: none"> <li>• Undertake reviews of own development needs.</li> <li>• Plan how to meet personal and organisational objectives.</li> <li>• Carry out planned (and unplanned) CPD activities.</li> <li>• Maintain evidence of competence development.</li> <li>• Evaluate CPD outcomes against any plans made.</li> <li>• Assist others with their own CPD.</li> </ul>		
E5. Exercise responsibilities in an ethical manner.		

## 14. Document matrix

Please map how your evidence documents meet the statements of competence in a document matrix. An example of this would be:

Doc No.	Doc Name	Question Number	A1	A2	B1	B2	B3
1	Drawing of roundabout design	3	✓			✓	
2	CAD drawing of approach junction			✓			✓

## 15. Statement by applicant

You must sign and date the declaration in section 15. *We will not accept any application without this declaration signed.*

## 16. Completing your submission

Please follow the guidance in the application form regarding our required format for EngTech submissions.

All submissions must be presented in a single ring binder or leaver arch folder. Any other style of folder or binding, or without the coversheet affixed will be returned to you.

Please send your complete submission and this form to:

**Membership, Institute of Highway Engineers, Floor 32–34, 286 Euston Road, London NW1 3DP.**

*Please note: We reserve the right to reject and return any submission that does not include all of the documents and attachments marked on the checklist at the back of this form, or with sections of this application form incomplete or left blank unless not required.*

## 17. Electronic copy of your submission

Please follow the guidance in the application form and supply us with a digital copy of your EngTech folder and any documents you have submitted on a writeable CD.

## 18. Employer proposal statement

Section 18 details the employer proposal information we require from you. We cannot pass your submission to a reviewer without an employer proposal statement. Self employed applicants should ask a recent Client to complete this section.

## 19. Proposer and seconder

Please ask your proposer and seconder to complete all fields in this section.

## 20. Payment form

The fee required as part of paying for your EngTech application comprises of (2019 rates):  
IHE EngTech professional review fee: £85.00

Engineering Council EngTech registration entry fee (collected on their behalf by the IHE): £17.90  
Please check our website for up-to-date fee information.

An additional upgrade to your membership fee might also be required. If you are currently a Student, Apprentice or Associate member, you will be required to pay the difference between your current annual membership fee and the annual fee for IHE Member grade of £128.00.

If you are a member of the Institute of Traffic Accident Investigators, an additional £65.00 administration fee is required to process your application.

## 21. Checklist

This section provides you with an opportunity to ensure you have included all the applicable documents and paperwork we have asked for. It also helps us to ensure we have received all of your submission when we process your application.

## Section C

In this section we have provided some useful additional documents that will assist you in answering the three assessment questions.

### 1. Code of Conduct

IHE members make a professional commitment to act responsibly with regard to safety and the environment, to act ethically, to maintain and develop their competence and to support new and prospective entrants. All members agree to abide by the IHE **Code of Conduct** which requires:

“Every Corporate Member of the institute at all times to so order his or her conduct as to uphold the dignity and reputation of the profession and to maintain his or her technical and professional competence and to safeguard the public in matters of safety, health and otherwise pertaining to the work of the Institute”.

The Memorandum and Articles provide for disciplinary action if a member is found to have breached the Code. However, the expectation is that members abide by the code because they recognise the duty they owe society and themselves to uphold the standing of their chosen profession.

Copies of IHE's disciplinary procedures and Equal Opportunities policy are available from the office or the website.

The IHE Code is based on Engineering Council (UK) guidance.

- You are obliged as an IHE member to maintain and record **Continuing Professional Development**. Your CPD should be guided by, and recorded in, a Personal Development Plan. More information on CPD and the IHE's guide to planning your development, can be found in the member's area of our website. IHE is required to monitor members' compliance with this obligation by the Engineering Council (UK). Every Professionally Registered member, except those who have declared they are no longer professionally active in the profession, is required to submit a record of their CPD when requested by the Institute as part of an annual sample. Any member who persistently fails to engage with this process will automatically lose their IHE membership.
- IHE is committed to **equality of opportunity** for everyone applying for membership and for the Professional Review and to removing any barriers to applicants and members achieving their full potential. In turn we expect members not to discriminate and to promote equal opportunities.

## **Your Professional Ethics**

Council has adopted the following statement of rules elaborating on the Code of Conduct. The statement is binding on all members.

### **Members are expected to:**

1. Hold paramount the safety, health and welfare of the public and the protection of the environment in the practice of their profession.
2. Maintain and improve their competence:
  - Demonstrate commitment to maintaining professional competence through self managed CPD
  - Take responsibility for and manage their CPD
  - Support the learning and development of others:
  - Be prepared to act as a mentor
  - Encourage employers to support professional development
  - Share professional expertise and knowledge
  - Provide support for the learning of others
  - Contribute to the activities of their professional body
3. Undertake technological tasks for others if qualified by training or expertise and after full disclosure of any pertinent limitations.
4. Accept responsibility for work carried out under their supervision, treat subordinates fairly and without bias and advance their learning and competence.
5. Avoid real or perceived conflicts of interest where possible and disclose them to affected parties when they do exist.
6. Avoid disclosing confidential information acquired in the course of work, without the consent of the parties concerned or unless disclosure is clearly in the public interest, for instance under the Public Interest Disclosure Act.
7. Provide objective and truthful information when giving advice or criticism, making public statements or advertising/publicising services; advice should include clear statements of the impact and consequences of engineering decisions and projects.
8. Reject bribery in all its forms.
9. Be aware of the IHE's Whistleblowing Policy and abide by it at all times.
10. Make systematic assessments of environmental, health and safety risks related to their work and their individual legal liability and inform clients whether or not professional indemnity insurance is held.
11. Report any violations of this code by another member to IHE.
12. Notify the IHE of any convictions of a criminal offence (other than minor Road Traffic Offences) and, any adjudicated bankruptcy e.g. if a Director's Disqualification Order is made against them or if they enter into an Individual Voluntary Arrangement with creditors.
13. Respond promptly to any request from the Institute for comments or information on or documents relating to any disciplinary matter being investigated by a panel appointed by IHE whether in relation to themselves or to another member.

Any member convicted by a court or other competent tribunal of a criminal offence (see 11 above) that, in the opinion of a Disciplinary Panel or Council, renders him unfit to be a member shall be guilty of improper conduct.

The Institute's remit extends to competence, conduct and professionalism, but not to contractual disputes or similar.



## 2. Exemplars

Below are some sample responses to the three assessment questions in section 13 of the EngTech application form. These are exemplars and are not exhaustive, but give you a guide of the response required.

### Question One

Give an example of a project or task where you solved a technical problem, explaining your role and how you selected the appropriate techniques, procedures and methods used. Tell us about any scientific, technical or engineering principles you used and how you reported or made recommendations on what you did for your employer or other people involved such as clients or suppliers. Include anything you did to prevent harm to people, equipment or data.

Engineering Council Learning Outcome Ref. Individual Route ONLY	Your answer	Engineering Council statement of competence Ref.
	<p>When designing and managing a surface dressing section I have to use a range of scientific techniques, procedures and methods drawing on technical and engineering principles. When I do my initial design work I use a combination of my design experience and knowledge (including an understanding of the local climate and its characteristics) and the Road Note 39 design guide.</p> <p>The design process involves understanding the existing scientific characteristics of the road including its existing condition in terms of existing surface hardness and condition. The type and volume of traffic that uses it, the gradient, the amount of shade and the maintenance hierarchy of the road all have an effect on the type of surface dressing specified. Another key indicator that helps to assess the hardness of the existing road is the use of probe tests as discussed in Road Note 39. This includes the use of a road hardness probe and a road surface temperature monitor which when used with Table 7.2.1 in RN39 can help to identify the hardness of the existing surface. The road hardness probe measures the depth that a 4mm semi spherical head penetrates the surface after a load of 340N is applied for 10 seconds. Ten readings from the inside wheel track of the carriageway are taken and the mean of these measurements is used. A surface temperature probe is also used to record the surface temperature as road hardness testing should only be undertaken when surface temperatures are between 15 and 35 C. Ten temperature readings are also taken and the mean calculated, the two readings then enable the designer to use Figure 7.2.2 in Road Note 39 to assess the road hardness category depending on the geographical location of the site within the UK.</p> <p>When I first became involved with this process in my current position it became apparent that there was no structure or procedures in place to assist in the design process. I therefore decided to design and implement some standard forms, documents and procedures.</p> <p>These forms were designed to capture all the information needed whilst on site to enable the job instruction tickets to be created. This not only made the recording of the information quicker and easier but it helped to ensure there was continuity throughout the area with the information being recorded. Since creating these forms I have updated them several times to improve them by making the information clearer and more concise and therefore easier to use.</p>	<p>A2 C1</p> <p>A2</p> <p>A2 C1</p> <p>A1</p> <p>A1</p>
	<b>Description of your supporting documents</b>	
	<p>EV1 Surface Dressing Specification Sheet EV2 Road Note 39 Probe Test Record Sheet</p>	

## Question Two

Give an example of how you have identified, planned, and organised the resources needed to effectively complete a project, explaining how you took into consideration cost, quality, safety and any environmental impact. Remember to think about what equipment was used, how data was gathered and analysed and how you initiated the project to produce the desired outcome.

Engineering Council Learning Outcome Ref. Individual Route ONLY	Your answer	Engineering Council statement of competence Ref.
	<p>Within my current role I am tasked with designing, organising and supervising the delivery of local road resurfacing. I have previously explained the full design procedure, which is carried out prior to any works taking place on the ground however, I am also responsible for the delivery of the scheme. Part of my role is to identify any potential hazards and I am also responsible for maintaining the Construction Phase Health &amp; Safety Plan.</p> <p>My role is focused on delivering the programme as a whole which means I take responsibility for allocating the correct amount of resources to the programme, ensuring that materials and labour are organised and ready for the beginning of the works and completing tasks on time.</p> <p>I am given an estimate/target cost/budget and am required to keep costs within that specified value and identify any variations which are likely to occur at the earliest opportunity. My role also requires me to ensure that the correct amount of plant, making sure the correct quantities of equipment are ordered minimizing the time plant is sat idle. Supporting documents show the bill of quantities I have produced when ordering plant and equipment.</p> <p>I am also responsible for the quality of the work delivered by the gang/team and am required to make decisions on a day-to-day basis as and when problems are identified to ensure that works are completed within timescale, cost and quality. I keep a constant check on the gang's work as each section is completed to ensure the work is up to an acceptable standard.</p> <p>Problems do occur for example, adverse weather particularly affects the delivery of the programme and I have to be aware that the circumstances may exist that will prevent the work from being undertaken. This may necessitate adjusting the length of the working day, timescale etc. I am also aware that any delays may affect future works which are time critical and therefore require a more comprehensive review.</p> <p>If the work has not been up to specification I am responsible for ascertaining why this has occurred. This might involve checking records such as temperature of material, rates of spread etc to determine where the problem may have arisen. I would seek to carry out remedial work as soon as possible.</p> <p>At the end of the works I am responsible for ensuring that all plant and equipment are removed from the site and that the area is left clean and tidy. I undertake an end of scheme final survey to ensure that the work has been undertaken correctly.</p> <p>At the end of the project I organise a meeting with the gang/team where we discuss what went well, what didn't, what we could improve and what action plans need developing for the next job.</p> <p>The supporting documents show some of the work I have done with local businesses around engagement and consultation when implementing a resurfacing programme. I try to deal with any complaint or query within the first 24 hours as this gives the customer a good first impression and shows that we are committed to providing a good level of service.</p>	<p>E2</p> <p>C3</p> <p>C2 D2 C3</p> <p>B2</p> <p>E2</p> <p>D2 C3</p> <p>D1 D2 C3</p>
	<p><b>Description of your supporting documents</b></p>	
	<p>EV3 Surface Dressing Hazard Identification Sheet EV4 Surface Dressing Construction Phase Health &amp; Safety Plan EV5 High Street Banbury resurfacing correspondence</p>	

### Question Three

Give an example of how you have complied with the Institute of Highway Engineer's Code of Conduct (as found in Section C of the accompanying guidance booklet) and how you keep in touch with developments in your technical area and how you have continued to develop your knowledge and skills?

Engineering Council Learning Outcome Ref. Individual Route ONLY	Your answer	Engineering Council statement of competence Ref.
	<p>I have spent time reading and understanding the IHE Code of Conduct to ensure that I understand the responsibilities involved with becoming a professionally recognised engineer and ensure that I comply with these within my role as a Highway Engineer. For example, my current job involves dealing with members of the public on a regular basis and, whilst meeting members of the public, it is extremely important that I remain objective and truthful. I always ensure that any statements I make are accurate in order to ensure that the public are fully aware of and understand what we are doing, how we are doing it and why we are doing it. I always endeavour to conduct myself in an ethical manner and behave in line with the Code of Conduct.</p> <p>I have an annual appraisal with my line manager, which is where we discuss my training and development requirements as well as setting my objectives for the year; I am then measured against these objectives. One of my objectives this year is to ensure that my knowledge and skills are kept up to date by attending regular training courses, reading current engineering literature and researching topics relevant to my field. I therefore receive regular emails and newsletters from IHE and have undertaken multiple training courses. I also maintain a Professional Development Plan, which will assist me in seeking professional registration as an Engineering Technician.</p> <p>Sustainability is something I am always trying to promote and encourage within my organisation. I have therefore been working on sustainability audits when undertaking resurfacing work, particularly with respect to the sourcing of material.</p> <p>In my efforts to help promote the industry I attended my local IHE branch meeting and have been instrumental in organising IHE branch awards. I also use my IHE engagement to support my Continuing Professional Development plan. This is maintained each year to ensure I constantly have targets and goals to reach and ensure my PDP is ongoing.</p>	<p>E1</p> <p>E5</p> <p>E3</p> <p>E5</p> <p>E4</p>
	<b>Description of your supporting documents</b>	
	<p>EV6 Sustainability Audit for Pool Green resurfacing scheme</p> <p>EV7 Professional Development Plan</p> <p>EV8 CPD folder</p> <p>EV9 IHE Branch minutes</p>	