

ENGINEERING COUNCIL UK

UK Standard for Professional Engineering Competence

Chartered Engineer and Incorporated Engineer Standard

regulating the engineering profession



Chartered Engineer and Incorporated Engineer Standard

“ *The UK economy depends on improved business performance, which in turn relies to a great extent on the competence of our engineers and technicians. The UK has a proud engineering heritage, but in an increasingly competitive world our engineering competence must reflect the needs of business and industry for astute and experienced creators and managers of technology.* ”

LORD SAINSBURY OF TURVILLE Parliamentary Under-Secretary of State for Science and Innovation

FOREWORD BY LORD SAINSBURY OF TURVILLE

Parliamentary Under-Secretary of State for Science and Innovation



THE UK ECONOMY DEPENDS ON improved business performance, which in turn relies to a great extent on the competence of our engineers and technicians. The UK has a proud engineering heritage, but in an increasingly competitive world our engineering competence must reflect the needs of business and industry for astute and experienced creators and managers of technology.

Engineers also have a more important role than ever, as technology and the demands which we make of it become increasingly complex, in ensuring that development takes place in a way which does not cause problems for our safety or our health. They have an equally crucial part to play in minimising risk to the environment, and in bringing about sustainable development, not only in the UK but throughout the world.

The Engineering Council^{UK} has in these standards distilled the framework of capability we should expect from our most competent engineers. We have an education system that can deliver the underlying knowledge and understanding. With the establishment of the Sector Skills Councils we have a means to nurture and develop the skills and know-how to exploit these. The SSCs will focus on sectors of strategic and economic importance, and aim to deliver change on a range of skills and productivity priorities.

At the time of writing, four SSCs have already been granted full five-year licences, and the three listed below will find the new UK-SPEC particularly relevant. These are:

- SEMTA (Science, Engineering and Manufacturing Technologies Alliance)
- e-Skills UK (ITEC skills, telecommunications)
- Construction Skills

However, there are also a number of other SSCs in development which we hope will progress to being fully licensed, and several of these represent sectors in which engineering plays a vital role in success. I anticipate that by summer 2004, there will be between 23 and 25 SSCs operating under full five-year licences.

It is my hope that these standards will become the goal for every aspiring professional engineer or engineering technician, that employers will adopt them as a valuable metric for training and developing their staff, and that educators will tailor their programmes to deliver the essential learning and skills they require. In this way we can maintain our extraordinary growth and competitiveness into the 21st Century.

Engineering underwrites our society. With these standards the UK can maintain its strength and assure attractive careers for its practitioners.

DAVID SAINSBURY

THE PURPOSE OF UK-SPEC

This Engineering Council ^{UK} Standard explains the value of becoming recognised as a Chartered Engineer or Incorporated Engineer. It describes the requirements that have to be met for registration, and gives examples of ways of doing this. This standard should enable individuals and employers to find out whether they or their staff can meet the requirements, and explains the steps necessary to achieve national registration. Chartered Engineers and Incorporated Engineers carry many responsibilities, including the need to observe a professional code of conduct. These are described here, together with advice on how to maintain registration.

Finally, advice is given on the relationship of UK-SPEC to its predecessor, known as SARTOR (Standards and Routes To Registration).

Introduction

This standard is published by the Engineering Council ^{UK} [EC^{UK}] on behalf of the United Kingdom engineering profession. EC^{UK} is governed by a Board representing the major professional engineering institutions in the UK, together with individuals representing industries and sectors with an interest in regulation of the engineering profession. Its primary tasks are to maintain the registers of professional engineers and technicians, originally established in the 1960s and 1970s by the former Council of Engineering Institutions and Engineers Registration Board, and to set the standards required for registration. Anyone wishing to be registered must apply through one of the professional engineering institutions licensed by EC^{UK}.

Today's professional engineers

Today's professional engineers demonstrate a personal and professional commitment to society, to their profession, and to the environment.

Chartered Engineers are characterised by their ability to develop appropriate solutions to engineering problems, using new or existing technologies, through innovation, creativity and change. They might develop and apply new technologies, promote advanced designs and design methods, introduce new and more efficient production techniques, marketing and construction concepts, pioneer new engineering services and management methods. Chartered Engineers are variously engaged in technical and commercial leadership and possess effective interpersonal skills.

Incorporated Engineers are characterised by their ability to act as exponents of today's technology through creativity and innovation. To this end, they maintain and manage applications of current and developing technology, and may undertake engineering design, development, manufacture, construction and operation. Incorporated Engineers are variously engaged in technical and commercial management and possess effective interpersonal skills.



I saw the CEng as a gold standard to which to aspire in terms of recognition as a professional engineer. When I pass out my business card at meetings it indicates scaling a hurdle above and beyond any degree . . .

Professor David M Howard, CEng FIEE FIOA MAES,
Head of the Media Engineering Research Group,
Department of Electronics,
University of York

Why Register?

Registration has many benefits for employers, engineers and the UK economy.

Registration sets Chartered Engineers and Incorporated Engineers apart from engineers who are unregistered. It establishes their proven knowledge, understanding and competence. In particular registration demonstrates a commitment to professional standards, and to developing and enhancing competence. So registration as a professional engineer gives an edge to candidates applying for posts, whether or not registration is specified in the job advertisement. Registration links a professional engineer into a professional engineering institution, one which has been assessed by the Engineering Council ^{UK} as capable of providing comprehensive professional development guidance and opportunities, with regular publications and web access to assist in this, and many opportunities to network with colleagues with similar professional interests. It also keeps registered Chartered and Incorporated Engineers abreast of job opportunities and is a regular reminder of their professional standing and their obligations to society.

Employers of registered Chartered or Incorporated Engineers have the assurance of knowing that their employees have had their competence assessed, their credentials verified, and their commitment to continuing professional development established. They will have gained the recognition of their peers as meeting UK and international standards for knowledge and experience. Maintaining registration ensures that they are exposed to new developments in their profession, and provides numerous opportunities to benefit from these. It also means that they are governed by a professional code of conduct, and receive reminders and assistance in determining their obligations under this code.

In some cases evidence of employing registered Chartered or Incorporated Engineers will be necessary for the award of contracts in the UK and internationally.

International Recognition

An increasing number of countries formally recognise the standing of Chartered Engineers and Incorporated Engineers, and in some cases require these qualifications for particular work. Evidence of registration with **EC^{UK}** can prove helpful in applying for jobs and tendering for work in those countries. **EC^{UK}** works closely with other countries' national bodies to further develop recognition of these important categories of engineering professional. Further details are available from **EC^{UK}** licensed professional engineering institutions and from **EC^{UK}** International Department.

What is Competence?

Registration as a Chartered Engineer or Incorporated Engineer is open to everyone who can demonstrate competence to perform professional work to the necessary standards, and commitment to:

- **Maintain that competence**
- **Work within professional codes**
- **Participate actively within the profession.**

Pages 7 to 11 of this document set out the threshold generic competence standards for registration as a Chartered Engineer or Incorporated Engineer. These standards have widespread support and are based on occupational standards developed for the main industries in which engineers are employed. Competence includes the knowledge, understanding and skills which underpin performance. Engineers become competent

through a mixture of education and professional development, traditionally known as the *formation process*. These different elements are described later.

Assessment of Competence

To become registered as Chartered Engineers or Incorporated Engineers applicants must have their competence assessed by professional review. Annex A to this standard lists the professional engineering institutions licensed by **ECUK** to assess applicants. The assessment is by practising engineering professionals, trained in this kind of assessment. Applicants are assessed against the competence standards listed in this document, which however will often have been adapted by the institution to be more representative of the particular technologies or industries which it represents.

The process of assessment starts with a written application made in accordance with the requirements of the particular institution concerned. A detailed description of the format for this will be provided by the institution, but any claim of qualifications, experience or training will need formal documented evidence. In giving details of experience, applicants will need to show how this relates to the required competences.

Following a review of the documented evidence, the institution will decide whether the applicant is ready for a formal interview¹ with the assessors. The institution will be able to advise how best to present evidence of training and experience. Where deficiencies emerge, institutions will usually be able to suggest ways in which they can be addressed (although this

may involve further training or additional experience). On completion of the professional review, a decision will be made by the membership committee of the institution concerned. A positive decision will result in registration of the candidate as a Chartered Engineer or Incorporated Engineer. Retention of the title will require continued membership of the admitting institution or another licensed body and payment of an annual fee.

What needs to be demonstrated?

The following pages list the generic competences that have to be demonstrated in order to achieve registration as a Chartered Engineer or Incorporated Engineer. Candidates who believe they measure up to these, or who wish to work towards them, should approach one of the listed engineering institutions to obtain further details of how to apply for recognition and registration.

¹ The interview will be conducted in English, subject only to the provisions of the Welsh Language Act 1993 and any Regulations which may be made in implementation of European Union directives on free movement of labour.

CHARTERED ENGINEERS

Chartered Engineers must be competent throughout their working life, by virtue of their education, training and experience, to:

A Use a combination of general and specialist engineering knowledge and understanding to optimise the application of existing and emerging technology.

A1 Maintain and extend a sound theoretical approach in enabling the introduction and exploitation of new and advancing technology and other relevant developments.

This could include an ability to:

- Identify the limits of own personal knowledge and skills
- Strive to extend own technological capability
- Broaden and deepen own knowledge base through research and experimentation.

A2 Engage in the creative and innovative development of engineering technology and continuous improvement systems.

This could include an ability to:

- Establish users' needs
- Assess marketing needs and contribute to marketing strategies
- Identify constraints and exploit opportunities for the development and transfer of technology within own chosen field
- Promote new applications when appropriate
- Secure the necessary intellectual property rights
- Develop and evaluate continuous improvement systems.

INCORPORATED ENGINEERS

Incorporated Engineers must be competent throughout their working life, by virtue of their education, training and experience, to:

A Use a combination of general and specialist engineering knowledge and understanding to apply existing and emerging technology.

A1 Maintain and extend a sound theoretical approach to the application of technology in engineering practice.

This could include an ability to:

- Identify the limits of own personal knowledge and skills
- Strive to extend own technological capability
- Broaden and deepen own knowledge base through new applications and techniques.

A2 Use a sound evidence-based approach to problem-solving and contribute to continuous improvement.

This could include an ability to:

- Establish users' requirements for improvement
- Use market intelligence and knowledge of technological developments to promote and improve the effectiveness of engineering products, systems and services
- Contribute to the evaluation and development of continuous improvement systems.

CHARTERED ENGINEERS

B Apply appropriate theoretical and practical methods to the analysis and solution of engineering problems.

B1 Identify potential projects and opportunities.

This could include an ability to:

- Explore the territory within own responsibility for new opportunities
- Review the potential for enhancing engineering products, processes, systems and services
- Use own knowledge of the employer's position to assess the viability of opportunities.

B2 Conduct appropriate research, and undertake design and development of engineering solutions.

This could include an ability to:

- Identify and agree appropriate research methodologies
- Assemble the necessary resources
- Carry out the necessary tests
- Collect, analyse and evaluate the relevant data
- Draft, present and agree design recommendations
- Undertake engineering design.

B3 Implement design solutions, and evaluate their effectiveness.

This could include an ability to:

- Ensure that the application of the design results in the appropriate practical outcome
- Identify the required cost, quality, safety, reliability, appearance, fitness for purpose and environmental impact of the outcome
- Determine the criteria for evaluating the design solutions
- Evaluate the outcome against the original specification
- Actively learn from feedback on results to improve future design solutions and build best practice.

INCORPORATED ENGINEERS

B Apply appropriate theoretical and practical methods to design, develop, manufacture, construct, commission, operate and maintain engineering products, processes, systems and services.

B1 Identify, review and select techniques, procedures and methods to undertake engineering tasks.

This could include an ability to:

- Select a review methodology
- Review the potential for enhancing engineering products, processes, systems and services, using evidence from best practice
- Establish an action plan to implement the results of the review.

B2 Contribute to the design and development of engineering solutions.

This could include an ability to:

- Contribute to the identification and specification of design and development requirements for engineering products, processes, systems and services
- Identify problems and evaluate possible engineering solutions to meet client needs
- Contribute to the design of engineering solutions.

B3 Implement design solutions and contribute to their evaluation.

This could include an ability to:

- Secure the resources required for implementation
- Implement design solutions, taking account of cost, quality, safety, reliability, appearance, fitness for purpose and environmental impact
- Identify problems during implementation and take corrective action
- Contribute to the evaluation of design solutions
- Contribute to recommendations for improvement and actively learn from feedback on results.

CHARTERED ENGINEERS

C Provide technical and commercial leadership.

C1 Plan for effective project implementation.

This could include an ability to:

- Identify the factors affecting the project implementation
- Lead on preparing and agreeing implementation plans and method statements
- Ensure that the necessary resources are secured and brief the project team
- Negotiate the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers, etc.).

C2 Plan, budget, organise, direct and control tasks, people and resources.

This could include an ability to:

- Set up appropriate management systems
- Agree quality standards, programme and budget
- Organise and lead work teams, coordinating project activities
- Ensure that variations from quality standards, programme and budgets are identified, and that corrective action is taken
- Gather and evaluate feedback, and recommend improvements.

C3 Lead teams and develop staff to meet changing technical and managerial needs.

This could include an ability to:

- Agree objectives and work plans with teams and individuals
- Identify team and individual needs, and plan for their development
- Lead and support team and individual development
- Assess team and individual performance, and provide feedback.

INCORPORATED ENGINEERS

C Provide technical and commercial management.

C1 Plan for effective project implementation.

This could include an ability to:

- Identify the factors affecting the project implementation
- Prepare and agree implementation plans and method statements
- Secure the necessary resources and confirm roles in project team
- Apply the necessary contractual arrangements with other stakeholders (client, subcontractors, suppliers, etc.).

C2 Manage the planning, budgeting and organisation of tasks, people and resources.

This could include an ability to:

- Operate appropriate management systems
- Work to the agreed quality standards, programme and budget
- Manage work teams, coordinating project activities
- Identify variations from quality standards, programme and budgets, and take corrective action
- Evaluate performance and recommend improvements.

C3 Manage teams and develop staff to meet changing technical and managerial needs.

This could include an ability to:

- Agree objectives and work plans with teams and individuals
- Identify team and individual needs, and plan for their development
- Manage and support team and individual development
- Assess team and individual performance, and provide feedback.

CHARTERED ENGINEERS

C4 **Bring about continuous improvement through quality management.**

This could include an ability to:

- Promote quality throughout the organisation and its customer and supplier networks
- Develop and maintain operations to meet quality standards
- Direct project evaluation and propose recommendations for improvement.

INCORPORATED ENGINEERS

C4 **Manage continuous quality improvement.**

This could include an ability to:

- Ensure the application of quality management principles by team members and colleagues
- Manage operations to maintain quality standards
- Evaluate projects and make recommendations for improvement.

CHARTERED ENGINEERS AND INCORPORATED ENGINEERS

Both **Chartered Engineers** and **Incorporated Engineers** must be competent throughout their working life, by virtue of their education, training and experience, to:

D **Demonstrate effective interpersonal skills.**

D1 **Communicate in English with others at all levels.**

This could include an ability to:

- Contribute to, chair and record meetings and discussions
- Prepare letters, documents and reports
- Exchange information and provide advice to technical and non-technical colleagues.

D2 **Present and discuss proposals.**

This could include an ability to:

- Prepare and deliver appropriate presentations
- Lead and sustain debates with audiences
- Feed the results back to improve the proposals.

D3 **Demonstrate personal and social skills.**

This could include an ability to:

- Know and manage own emotions, strengths and weaknesses
- Be aware of the needs and concerns of others
- Be confident and flexible in dealing with new and changing interpersonal situations
- Identify, agree and work towards collective goals
- Resolve conflicts and create, maintain and enhance productive working relationships.

E **Demonstrate a personal commitment to professional standards, recognising obligations to society, the profession and the environment.**

E1 **Comply with relevant codes of conduct.**

This could include an ability to:

- Comply with the rules of professional conduct of own professional body
- Work constructively within all relevant legislation and regulatory frameworks, including social and employment legislation.

E2 **Manage and apply safe systems of work.**

This could include an ability to:

- Identify and take responsibility for own obligations for health, safety and welfare issues
- Ensure that systems satisfy health, safety and welfare requirements
- Develop and implement appropriate hazard identification and risk management systems
- Manage, evaluate and improve these systems.

E3 Undertake engineering activities in a way that contributes to sustainable development.

This could include an ability to:

- Operate and act responsibly, taking account of the need to progress environmental, social and economic outcomes simultaneously
- Use imagination, creativity and innovation to provide products and services which maintain and enhance the quality of the environment and community, and meet financial objectives
- Understand and encourage stakeholder involvement.

E4 Carry out continuing professional development necessary to maintain and enhance competence in own area of practice.

This could include an ability to:

- Undertake reviews of own development needs
- Prepare action plans to meet personal and organisational objectives
- Carry out planned (and unplanned) CPD activities
- Maintain evidence of competence development
- Evaluate CPD outcomes against the action plans
- Assist others with their own CPD.

Education

Formal education is the usual, though not the only, way of demonstrating the underpinning knowledge and understanding for professional competence. The following qualifications exemplify the required knowledge and understanding:

Chartered Engineer – an accredited² Bachelors degree with honours in engineering or technology, plus either an appropriate Masters degree accredited or approved by a professional engineering institution, or appropriate further learning to Masters level
or an accredited integrated MEng degree.

Incorporated Engineer – an accredited Bachelors degree in engineering or technology **or** a Higher National Diploma or Foundation Degree in engineering or technology, plus appropriate further learning to degree level.

Applicants who do not have exemplifying qualifications to demonstrate the required knowledge and understanding may do so in other ways, but must clearly demonstrate they have achieved the same level of knowledge and understanding as those with the qualifications.

These ways include:

- Writing a technical report, based upon their experience, and demonstrating their knowledge and understanding of engineering principles
- Taking Engineering Council examinations
- Following an assessed work-based learning programme
- Taking an academic programme specified by the institution to which they are applying.

² Accreditation of degree programmes is carried out by the engineering institutions licensed by **ECUK**. The key criterion in accreditation is the learning outcomes achieved by a programme's graduates.

Applicants should consult the institution to which they are applying for advice on the most appropriate option.

Professional Development

This is the other key part of developing competence. It is how potential Chartered or Incorporated Engineers learn to apply their knowledge and understanding, and begin to apply professional judgement. It can happen at the same time as some of the formal education referred to above, for example through an industrial placement during a higher education course, or alongside part-time study. Many larger employers run well-established graduate training and development schemes. While these schemes are of course geared to the specific needs of their organisations, they are frequently designed to help graduates on the way to registration as a Chartered Engineer or Incorporated Engineer, and may have been accredited by one or more of the engineering institutions.

Other employers may not have schemes of this type. Potential Chartered or Incorporated Engineers in these organisations will need to develop profiles of competence and professional activity to help them prepare for registration. In some cases employers will use occupational standards or competence frameworks in determining job descriptions and staff development, even without a formal scheme, and these may assist in developing a competence profile. Otherwise aspiring registrants should use the competence and commitment statements and seek advice and guidance from the relevant engineering institution, which may be able to put them in touch with a mentor to assist them through the process and help them address any gaps in their development. Sector Skills Councils may be another source of advice.



Achieving Chartered status has been a personal achievement for me. I am proud of this achievement as it is a recognition of my capabilities, technical background and engineering knowledge gained through education, practical experience and training. Professionally, chartership has improved my career options and prospects, leading to the potential for other financial rewards and I have gained a mutual respect with fellow chartered engineers.

Shahana Mirza,
BEng(Hons) CEng
MChemE,
Principal Project
Engineer - Safety, with
Foster Wheeler Energy
Limited



When people ask me about my occupation and I say "Chartered Engineer" I feel really proud. I also like to be able to put the letters after my name. People who believe in real equality and equity might not be impressed, but being registered as a Chartered Engineer certainly impresses the people in power (usually men) – who are the ones a woman often needs to impress!

Jackie Carpenter,
CEng, MD of Energy
21 and Past President
of the Women's
Engineering Society

Anyone seeking registration as a Chartered or Incorporated Engineer should maintain a detailed record of their development, responsibilities and experience, verified by superiors or mentors, to provide best evidence for the Professional Review.

There is no requirement for "time-serving". Demonstration of competence and commitment is the sole criterion for registration.

Maintaining Competence

Candidates applying for registration as Chartered Engineer or Incorporated Engineer will be required to show evidence that they have a plan to continue to maintain their competence. This is an important part of recognition as a Chartered Engineer or Incorporated Engineer. It is for this reason that Chartered or Incorporated Engineers may only obtain and retain registration if they are members of one of the licensed professional engineering institutions. It is important that candidates seeking registration recognise that this will entail obligations and an ongoing commitment.

Professional Behaviour

Chartered Engineers and Incorporated Engineers will be expected to observe the requirements of the Code of Conduct of the professional engineering institution they have joined. Institutions are obliged to respond to allegations of infringement of the code and may suspend or remove membership and registration if proven. Institution Codes of Conduct follow the generic framework detailed here:

Guidelines for Institution Codes of Conduct

Each licensed engineering institution will place a personal obligation on its members to act with integrity, in the public interest, and to exercise all reasonable professional skill and care to:

- 1 Prevent avoidable danger to health or safety.

- 2 Prevent avoidable adverse impact on the environment.

- 3
 - 1) Maintain their competence.
 - 2) Undertake only professional tasks for which they are competent.
 - 3) Disclose relevant limitations of competence.

- 4
 - 1) Accept appropriate responsibility for work carried out under their supervision.
 - 2) Treat all persons fairly, without bias, and with respect.
 - 3) Encourage others to advance their learning and competence.

- 5
 - 1) Avoid where possible real or perceived conflict of interest.
 - 2) Advise affected parties when such conflicts arise.

- 6 Observe the proper duties of confidentiality owed to appropriate parties.

- 7 Reject bribery.

- 8 Assess relevant risks and liability, and if appropriate hold professional indemnity insurance.

- 9 Notify the institution if convicted of a criminal offence or upon becoming bankrupt or disqualified as a Company Director.

- 10 Notify the institution of any significant violation of the institution's Code of Conduct by another member.

Revalidation

The engineering profession does not, at present, require formal revalidation of professional registration. However, steps are being taken to create a voluntary register of those who seek revalidation, and to provide the means to assess and certify continuing competence. Nevertheless, it is recognised that most registrants will not seek revalidation. They are therefore reminded of their professional obligation to maintain their competences up to date, and that they may be removed or suspended from membership and registration if they are found not to have complied.

Where to seek help

A list of professional engineering institutions licensed to register Chartered or Incorporated Engineers at the time of publishing appears at Annex A. An up to date listing of institutions holding these licences may be obtained from the **ECUK** website www.engc.org.uk.

Further help and advice on education and training issues may be obtained from Sector Skills Councils. An up to date list of these may be obtained from www.ssda.org.uk.

If additional advice is required please contact the **ECUK** Registration Department at the address given on the back of this document.

Appeals

Candidates applying for Chartered Engineer or Incorporated Engineer registration are entitled to appeal against the decision of the membership committee of the licensed engineering institution to which they have applied. **ECUK** reviews all licensed institutions and requires that they have robust and effective systems, including procedures to deal fairly and openly with contested membership and registration decisions.

However, **ECUK** is unable to intervene in the decision of a licensed professional engineering institution.

Previous registration standards – SARTOR

The requirements for registration as a Chartered Engineer or Incorporated Engineer were established in the first edition of Standards And Routes to Registration (SARTOR) in 1984, and amended and updated in the second and third editions (1990 and 1997 respectively).

This standard is a direct successor to those documents. Any applicant eligible for registration under the previous standard should have no difficulty in satisfying UK-SPEC.

The main changes to the original requirements have broadened the range of competences embraced, while emphasising responsibilities and obligations undertaken by Chartered or Incorporated Engineers. Most of the competences described in this document can be directly related to those listed in the previous edition of SARTOR (Edition 3, 1997).

Recognition as a Chartered Engineer or Incorporated Engineer

While Chartered Engineers and Incorporated Engineers have different characteristics and profiles of competence, recognition as either is valuable in its own right. However it is recognised that some Incorporated Engineers may wish, because of the way their careers develop, to become Chartered Engineers. Once again, evidence of competence, usually underpinned by documented qualifications, is the normal requirement. Normally there will be a need for further learning and development to meet the standards required, although knowledge and understanding may be demonstrated by means of a technical report.



It is important to move to the new Standard because we need to :

- *consider the holistic notion of engineering and what makes a professionally competent engineer*
- *ensure a balance is established between academic and practical achievement*
- *get away from education for education's sake and training for training's sake*

Jim Watson,
Consultant & Director,
J M Watson &
Associates Ltd

I graduated with an MEng (Europe) in Civil Engineering from the University of Leeds. I then joined Atkins PLC. From day one with Atkins, I have been given major responsibilities, and am being driven by them to achieve chartered status as a way to formally recognise the professionalism of my work. This quality of training and experience can only be found in the UK.

Omar Bustami,
Graduate Engineer
with Atkins PLC

British Computer Society

Established: 1957
1 Sanford Street
Swindon
Wilts SN1 1HJ
Phone: 01793 417417
Fax: 01793 480270
Email: bcsHQ@hq.bcs.org.uk
Website: www.bcs.org.uk

British Institute of Non-Destructive Testing

Established: 1954
1 Spencer Parade
Northampton NN1 5AA
Phone: 01604 630124/5
Fax: 01604 231489
Email: info@bindt.org
Website: www.bindt.org

Chartered Institution of Building Services Engineers

Established: 1897
Delta House
222 Balham High Rd
London SW12 9BS
Phone: 020 8675 5211
Fax: 020 8675 5449
Email: enquiries@cibse.org
Website: www.cibse.org

Chartered Institution of Water and Environmental Management

Established: 1895
15 John Street
London WC1N 2EB
Phone: 020 7831 3110
Fax: 020 7405 4967
Email: admin@ciwem.org.uk
Website: www.ciwem.org.uk

Institution of Agricultural Engineers

Established: 1938
West End Road
Silsoe
Bedford MK45 4DU
Phone: 01525 861096
Fax: 01525 861660
Email: secretary@iagre.org
Website: www.iagre.org

Institution of Civil Engineers

Established: 1818
1-7 Great George St
London SW1P 3AA
Phone: 020 7222 7722
Fax: 020 7222 7500
Email: profdev@ice.org.uk
Website: www.ice.org.uk

Institute of Cast Metals Engineers

Established: 1904
ICME Metalforming Centre
47 Birmingham Road
West Bromwich
West Midlands B70 6PY
Phone: 0121 601 6979
Fax: 0121 601 6981
Email: info@icme.org.uk
Website: www.icme.org.uk

Institution of Chemical Engineers

Established: 1922
165-189 Railway Terrace
Rugby CV21 3HQ
Phone: 01788 578214
Fax: 01788 560833
Email: memserv@icheme.org.uk
Website: www.icheme.org.uk

Institution of Engineering Designers

Established: 1945
Courtleigh
Westbury Leigh, Westbury
Wilts BA13 3TA
Phone: 01373 822801
Fax: 01373 858085
Email Address: ied@ied.org.uk
Website: www.ied.org.uk

IEE

Established: 1871
Michael Faraday House
Six Hills Way
Stevenage
Herts SG1 2AY
Phone: 01438 313311
Fax: 01438 313465
Email: postmaster@iee.org
Website: www.iee.org

Institution of Fire Engineers

Established: 1918
148 Upper New Walk
Leicester LE1 7QB
Phone: 0116 255 3654
Fax: 0116 247 1231
Email: info@ife.org.uk
Website: www.ife.org.uk

Institution of Gas Engineers and Managers

Established: 1863
Charnwood Wing
Ashby Road
Loughborough
Leicestershire LE11 3GR
Phone: 01509 282728
Fax: 01509 283110
Email: general@igem.org.uk
Website: www.igem.org.uk

Institute of Healthcare Engineering & Estate Management

Established: 1943
2 Abingdon House
Cumberland Business Centre
Northumberland Road
Portsmouth PO5 1DS
Phone: 023 9282 3186
Fax: 023 9281 5927
Email: membership@iheem.org.uk
Website: www.iheem.org.uk

Institute of Highway Incorporated Engineers

Established: 1965
20 Queensberry Place
London SW7 2DR
Phone: 020 7823 9093
Fax: 020 7581 8087
Email: secretary@ihie.org.uk
Website: www.ihie.org.uk

Institution of Highways & Transportation

Established:
6 Endsleigh Street
London WC1H 0DZ
Phone: 020 7387 2525
Fax: 020 7387 2808
Email: info@iht.org
Website: www.iht.org

Institution of Incorporated Engineers

Established: 1884
Savoy Hill House
Savoy Hill
London WC2R 0BS
Phone: 020 7836 3357
Fax: 020 7497 9006
Email: info@iie.org.uk
Website: www.iie.org.uk

Institution of Lighting Engineers

Established: 1923

Regent House
Regent Place
Rugby
Warwickshire CV21 2PN

Phone: 01788 576492
Fax: 01788 540145
Email: info@ile.org.uk
Website: www.ile.org.uk

Institute of Materials, Minerals and Mining

Established: 1869

1 Carlton House Terrace
London SW1Y 5DB

Phone: 020 7451 7300
Fax: 020 7839 1702
Email: admin@iom3.org
Website: www.iom3.org

Institute of Marine Engineering, Science and Technology

Established: 1889

80 Coleman Street
London EC2R 5BJ

Phone: 020 7382 2600
Fax: 020 7382 2670
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Website: www.imarest.org

Institution of Mechanical Engineers

Established: 1847

1 Birdcage Walk
London SW1H 9JJ

Phone: 020 7222 7899
Fax: 020 7222 4557
Email: membership@imeche.org.uk
Website: www.imeche.org.uk

Institution of Nuclear Engineers

Established: 1959

1 Penderley Road
London SE6 2LQ

Phone: 020 8698 1500
Fax: 020 8695 6409
Email: inucewh@aol.com
Website: www.inuce.org.uk

Institute of Acoustics

Established: 1974

77A St Peter's Street
St Albans
Herts AL1 3BN

Phone: 01727 848195
Fax: 01727 850553
Email: ioa@ioa.org.uk
Website: www.ioa.org.uk

Institute of Physics & Engineering in Medicine

Established: 1960

Fairmount House
230 Tadcaster Road
York YO24 1ES

Phone: 01904 610821
Fax: 01904 612279
Email: office@ipem.org.uk
Website: www.ipem.org.uk

Institution of Railway Signal Engineers

Established: 1912

Savoy Hill House
Savoy Hill
London WC2R 0BS

Phone: 020 7240 3290
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Website: www.irse.org

Institution of Structural Engineers

Established: 1908

11 Upper Belgrave Street
London SW1X 8BH

Phone: 020 7235 4535
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Website: www.istructe.org.uk

Institution of Water Officers

Established: 1945

4 Carlton Court
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Email: lynn@iwo.org.uk
Website: www.iwo.org.uk

Energy Institute

Established: 1927

61 New Cavendish Street
London W1G 7AR

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Website: www.energyinst.org.uk

Institute of Measurement and Control

Established: 1944

87 Gower Street
London WC1E 6AF

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Email: education@instmc.org.uk
Website: www.instmc.org.uk

Institute of Physics

Established: 1874

76 Portland Place
London W1B 1NT

Phone: 020 7470 4800
Fax: 020 7470 4848
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Website: www.iop.org

Royal Aeronautical Society

Established: 1866

4 Hamilton Place
London W1J 7BQ

Phone: 020 7499 3515
Fax: 020 7499 6230
Email: raes@raes.org.uk
Website: www.raes.org.uk

Royal Institution of Naval Architects

Established: 1860

10 Upper Belgrave Street
London SW1X 8BQ

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Society of Environmental Engineers

Established: 1959

The Manor House
High Street
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Herts SG9 9AB

Phone: 01763 271209
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Website: www.environmental.org.uk

Society of Operations Engineers

Established: 1945

22 Greencoat Place
London SW1P 1PR

Phone: 020 7630 1111
Fax: 020 7630 6677
Email: membership@soe.org.uk
Website: www.soe.org.uk

Welding Institute

Established: 1923

Granta Park
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Cambridge CB1 6AL

Phone: 01223 891162
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Website: www.twi.co.uk

I welcome the development of this new Standard which will:

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Max Jeffery, Learning & Development Leader, JCB Excavators Ltd

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*Mike Coulson, CEng
FIFEE, Recruitment and Development
Manager, BAE
Systems (2000)*

Acronyms used in this standard

CPD	Continuing Professional Development
EC ^{UK}	Engineering Council ^{UK}
NVQ	National Vocational Qualification
SVQ	Scottish Vocational Qualification
SARTOR	Standards And Routes to Registration (the previous registration standard)
UK-SPEC	UK Standard for Professional Engineering Competence (this standard)

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