



CIWEM

The Chartered Institution of
Water and Environmental Management

Evidence Of Attainment Of Mandatory Competences Associate/IEng

EVIDENCE OF ATTAINMENT OF CIWEM MANDATORY COMPETENCES

All applicants presenting themselves for consideration as Associates or Incorporated Engineers are asked to submit evidence of attainment of CIWEM's Mandatory Competences on the following form.

The CIWEM Mandatory Competences give you a way to show your personal contribution. Make sure you show clearly the things you have achieved as your level of attainment and professionalism are being considered. Remember to give all the statement of attainment examples from your own recent personal perspective. (Write in the first person, I did, I was responsible also think about 'where', 'when' and 'how' when compiling your examples).

The form can be completed clearly in long hand or preferably you can type your statements. Each statement should be approximately 100 words or less in length and the font size 11+. A copy of the form is available from the website, www.ciwem.org in Word and pdf Formats.

Please **do not** alter the format, (expand the boxes), make additions or append information to the form as this is used both by the Professional Boards at the initial assessment stage and, if you are invited, by the Interview Panel at the Professional Review Interview to record the outcome of your interview.

If you are invited to attend a Professional Review Interview try to cross reference the examples you give on the form with those given in your career and project report.

Please **ensure** that your Sponsor/Supervisor/Mentor indicates how they have judged your attainment of the competences, (written reports, observation, questioning or other comments).

Also **ensure** that your Sponsor/Supervisor/Mentor signs and dates each statement made and also **signs the last page** to indicate their status.

Applicants who have followed a formal Structured Training Scheme either for CIWEM, or another Professional Body, will still be required to complete the form in full.

Applicants who are already members of another qualifying body will also be required to fully complete the form.

You can provide more than one example for each competence however the information you do provide must be sufficient to meet the competence.

Your example should be quantified wherever possible, e.g. flow volumes, cost etc.

Examples of the type of evidence required, are outlined on the following pages.

To help you complete this form some worked examples are given at appendix A. These are a very small sample and there are bound to be many more examples that you can draw from your own personal experience.

GUIDANCE FOR COMPLETION OF CIWEM 10 MANDATORY COMPETENCES

The Competences are numbered A.1 – C.4 and under each heading there are some examples of areas you may wish to examine to demonstrate your personal attainment of each of the competences.

A.1 Develop a personal knowledge of water and environmental affairs.

Demonstrate an understanding of the historical development of the environmental sector.

Show that you understand the legislation, directives and regulations, including legal and financial, which may impact on your own employer.

Appreciate the impact that a topic such as flooding may have from the public's perspective and maybe that of a private organisation or pressure group.

Show that you understand how the potential impact of emerging technologies and organisational changes may affect your organisation.

A.2 Employ new corporate or personal strategies or policies that address change or development (e.g. legislative, economic or technological)

Implement or assist in research into the changes and developments in the sector in which you work, or related sectors.

Evaluate the findings from above and report on those changes and developments.

From these items show how you would contribute to ways of dealing with these changes and developments in your organisation.

Report on any existing gaps and how you have participated in any research to identify them.

B.1 Work within identified constraints, influences and success factors relevant to the development, improvement and sustainable use of environmental resources.

Contribute to a brief for a task and help to ensure that both the customer and the public will be served by the results.

Understand why client needs and public requirements may differ.

Take part in surveys, mapping or other investigations for a project.

Take part in the examination of the historical, social, ecological context of a project and any changes that might result should the work be carried out.

Understand and apply the regulatory constraints or relevant directives that might influence development.

Assist in identifying the economic or financial implications of the work you are doing.

Recognise any external resources needed to complete the task.

B.2 Apply appropriate solutions

Look at a plan and highlight your personal contribution where problems or gaps have been identified.

Implement the various suggestions delivered as a 'best fit' outcome.

Check that the solution has met the regulatory and legislative requirements and customer expectations.

B.3 Demonstrate the ability to implement and introduce change.

How have you assisted in the development of a plan for a task, monitored its development and made any necessary recommendations for revisions during its implementation?

B.4 Support the operation and continuing maintenance of new systems and services. Monitor and assess their performance.

What have you contributed to ensure a task will be achieved and comply with all the appropriate standards QA, H&S or environmental regulations?

Look at how you helped to draw up a plan for monitoring and maintaining a system or service.

Look at the outputs from the task and any analysis you may have assisted in giving towards recommendations to avoid the repeat of any that were unacceptable.

C.1 Apply professional ethics in your work.

Consider an issue that causes a challenge to your organisation.

Look at how you have assisted in dealing with influences that might affect your team, your employer or the wider community. This might include regulatory and legislative requirements.

C.2 Contribute to the effectiveness and competitiveness of your organisation by efficient management of resources.

Report on the performance of project aspects to which you are contributing. Look at how you can help your company to deploy, monitor, control and organise people and resources to achieve a planned outcome.

C.3 Demonstrate a commitment to the promotion of Health & Safety, quality and sustainable environmental activity through your work (Applicants shall give examples from all three areas).

Show your awareness of your employer's Health & Safety policy and procedures, or the practices appropriate to aspects of your professional activity. Look at how you personally can assist in the adherence to safety requirements.

Show also your awareness of any quality procedures that your employer may have in place.

Look at how you have assisted in promoting the wise use of non-renewable resources through possible waste minimisation and recycling also the benefits you may have observed by the lowest consumption of raw materials and energy and by the adoption of sustainable management practices within your company.

C.4 Demonstrate a commitment to continuing learning and professional development.

Look at how you have improved your personal competence in your current position and how you intend to maintain and improve your knowledge and experience. Look at developing a personal CPD programme for the future.

APPENDIX A

EXAMPLES OF MANDATORY COMPETENCE ATTAINMENT

A.1 Develop a personal knowledge of water and environmental affairs.

Example 1 – I have worked in the water industry for over 20 years as a scientist/engineer. In this time I have experienced the development of the industry from public utility to private company and then the subsequent development of these companies as mergers and acquisitions took place. I have been actively involved in assisting these companies via the work carried out by my employer to meet their legislative obligations such as the Urban Waste Water Treatment Directive and the Bathing Water Directive .

Example 2 – I have attended a wide range of CIWEM meetings and seminars to broaden my knowledge of the water industry. I have also attended the Young Member Study Tour, which included presentations on environmental, financial, wastewater and water supply topics.

My current role involves the provision of new sewers and sewage treatment works to rural communities. This requires me to have a wide understanding of the wastewater business. I have to consider financial long-term costs, planning legislation, local customer concerns, environmental impact of the construction and EA consents for any storm discharges in selecting the preferred options for the schemes.

A.2 Employ new corporate or personal strategies or policies to address change or developments (e.g. legislative, economic or technological).

Example 1 – As part of the AMP3 project, I have contributed to the adoption of a new type of motor starter control system designed to make use of modern serial communications technology and integrated component application. The use of these technologies is incorporated into projects where a review of their benefits shows an economic or technical justification. What was the benefit – cost, efficiency?

Example 2 - I am member of a small engineering team who are required to meet the Company's policy for provision of small sewage treatment works at rural sites to meet the requirements of the Urban Wastewater Treatment Directive. As part of this team I have been responsible for confirming the local requirements for the legislation with the EA. I have also been involved in researching and evaluating the various types of treatment process and manufactures literature to assess effluent quality obtainable, reliability and operational costs.

B.1 Work within the identified constraints, influences and success factors relevant to the development, improvement and sustainable use of environmental resources.

Example 1 – As a member of the team implementing schemes for the AMP3 project, I provide inputs to all stages of a scheme. Early stages include preparation of requirements for site surveys to establish details of the existing infrastructure. I also participate in the preparation of a presentation of the proposed solution to meet the clients brief. This presentation is required to demonstrate that the solution is both economic in terms of capital and operational costs and that it meets all of the client's specified regulatory requirements.

Example 2 - I am a member of a multi-disciplinary team, which provides new sewers and sewage treatment works to rural communities. In the early stages, I assist in appraising the schemes in terms of need, consequences of deferment and factors affecting the project. I assist in surveying and mapping of the physical characteristics of the natural and built environment and undertake ecological survey aspects of the work. I also arrange for discussions with the EA about any discharge consent issues.

Example 3 – I am a member of a multi-disciplinary team, which undertakes the company's scientific monitoring of water supply and wastewater effluents. I was involved in the early stages of assessing the requirements needed for sampling for the Urban Waste Water Treatment Directive. This included assessment of how many sites were involved and their size. It also involved discussion with the EA on what exactly would be their requirements on sampling practice and sample storage.

B.2 Apply appropriate solutions

Example 1 – I prepare specification for control systems designed specifically to meet the functionality requirements of a particular project. I attend factory testing of the control system to ensure that it fulfils the specified requirements and complies with the client's general specifications. I also provide inputs at the commissioning phase to resolve design issues and ensure that defects identified during factory testing are satisfactorily resolved.

Example 2 – I recommend procedures for protecting the environment during and after the construction phase for the appraised options. These include measures to be taken in crossing an SSSI; collecting seeds before excavating or keeping the turf for reinstatement. I assist in the feasibility of implementing these recommendations and the additional cost to the construction project, remedial work and long term maintenance of any conservation areas.

Example 3 – I am responsible for ensuring that the Urban Waste Water Treatment Directive sampling is carried out to comply with the legislative requirements. I have agreed the number of samples to be taken with the EA. I have arranged for sampling machines to be purchased to take samples meeting the EA requirements. This involved discussion with the EA and suppliers of the machines. Subsequently I arranged for trials of machines to assess their performance, reliability, installation requirements and ease of use. From this information I was able to identify and report on the preferred sampling machine for our needs.

B.3 Demonstrate the ability to implement and introduce change.

Example 1 – I have prepared specification documents for tender. These documents include both the client's general requirements and the specific design requirements I have detailed together with items such as conditions of contract, pricing schedules, payment schedules and project programmes. I have reviewed tenders returned against these documents and made recommendations for the award of contracts.

Example 2 – I monitor the environmental aspects of the construction phase when excavating for pipelines and foundations for the treatment works, to ensure no further measures are necessary. I recommend to the construction manager any additional measures needed and halt the construction if any unexpected special needs arise, for example the spawning grounds of the great crested newt.

Example 3 – I assisted in purchasing the sampling machines for UWWTD sampling. I prepared the specification requirements, which the EA had stipulated. I then obtained quotes from suppliers and manufacturers. I considered these quotes with my manager and we selected the best option, taking into account both cost and tested performance information. I subsequently arranged for the machines to be purchased and arranged for any permanent installation at large sites.

B.4 Support the operation and continuing maintenance of new systems and services. Monitor and assess their performance.

Example 1 – Following completion of a contract, I participated in a review of the project to identify both the strengths and weaknesses of the project implementation. On occasions where these reviews have identified weaknesses in the particular specification, I have proposed and implemented changes to these documents to resolve the issues.

Example 2 – After the initial completion of any new small rural works contract, I re-assessed its environmental impact and I recommended any further remedial work necessary. I also prepare a long-term plan for any conservation areas on the sewage treatment works site. I will then visit the completed site on an annual basis to assess progress and make further recommendations on the management of the conservation areas as appropriate.

Example 3 – I currently manage the UWWTD sampling programme. I have arranged for a servicing and repair contract with the manufacturer for the sampling machines. I also organise the sampling staff to take the appropriate number of composite samples. I am responsible for contacting the EA about any variation to the agreed programme or missed samples. I have to re-programme any missed samples and make allowances for bank holidays and staff holidays. I correlate the performance and reliability of all the sampling machines to assess it against the manufacture's specification.

C.1 Apply professional ethics in your work.

Example 1 – I have prepared and delivered a presentation aimed at graduate engineers to highlight to them the problems that can result on site if their designs do not make adequate allowance for the installation of electrical services.

I endeavour to maintain familiarity with current standards and legislation by referencing the source of documents whenever possible. The Europa web site provides excellent access to EU legislation and my employer funds access to the British Standards Online facility. I also receive a number of professional periodicals, which allows me to identify emerging technologies and new equipment.

I have attended seminars given by various professional bodies on engineering topics and allied subjects such as sustainable energy.

Example 2 - I have regular liaison meetings with the Engineers and the EA concerning the environmental impact of schemes, to ensure legislation and EA recommendations are adhered to. I have prepared and delivered a presentation to the Company's CIWEM student group, outlining the environmental aspects and consequences of sewer laying and treatment works construction.

I maintain my environmental knowledge by reading relevant publications and using the Internet. I also attend CIWEM meetings and seminars and other professional presentations.

I have a six-monthly appraisal with my manager to discuss my performance and set new targets to meet.

C.2 Contribute to the effectiveness and competitiveness of your organisation, by efficient management of resources.

Example 1 – In preparing our own proposals for job offers, I have developed manpower budgets for engineering input and prepared construction programmes for all phases of a project. These programmes identify the intensity and duration of engineering activities and how they link with the activities of other disciplines. When contracts are in progress, I have monitored the rate of manpower expenditure against forecast to ensure resource allocations are maintained within budget. I attend project team meetings to report on project progress and raise issues with the rest of the design team that affect design or project implementation.

Example 2 - I am responsible for monitoring and ensuring that sampling machines are in working condition at minimum cost. I also optimise staff costs by maximising utilisation of time coupled with minimum travelling.

In my previous post as an area scientist, I assisted in optimisation of chemical usage. I monitored usage by controlling all ordering of chemicals in the area and recorded all usage on spreadsheets. I used these to recognising variances in performance and to help me predict chemical usage for the forthcoming months for ordering purposes.

C.3 Demonstrate a commitment to the promotion of Health & Safety, Quality and Sustainable environmental activity (Applicants shall give examples from all three areas).

Example 1 – My employer provides regular training on Health & Safety issues and ensures that we are aware of any specific issues relevant to a particular project. For each project we produce a Health and Safety file. This file includes risk assessments associated with elements of the design at all stages from construction through to decommissioning, safety check lists, results of HAZOP studies and actions arising from Health & Safety review meetings. I contribute to all of these items.

Example 2 – I have attended the IOSH managing safely course and am trained in carrying out risk assessments. I am also a trained COSHH assessor and regularly carry out COSHH assessments.

I regularly carry out site audits and as well as highlighting the environmental issues, I identify any health and safety issues, which I report to the design engineer.

In my role I co-ordinate and make recommendations on the environmental impact of schemes. I also promote sustainable use of resources and recycling of materials wherever possible.

Example 3 – I have attended internal health and safety courses and the IOSH Managing Safety course. It is my responsibility to ensure the sampling staff comply with the company's health and safety policy. I have attained certification for confined space entry and attended a course in order to become a Confined Spaces Senior Authorised Person (CSSAP). I have acted as CSSAP now on several occasions and become experienced in assessing contractors method statements and safe working procedures. As Area Scientist, it is also my responsibility to authorise process risk assessments in order to minimise the risk to effluent quality.

C.4 Demonstrate a commitment to continuing learning and professional development.

Example 1 – During a role as assistant resident engineer I chaired site progress meetings between ourselves as the engineer and the contractor and client. In these meetings I determined actions with the various parties necessary to maintain progress and achieve project completion.

My company operates an internal system of professional development review. These reviews are held quarterly and monitor professional development progress, identify training needs and set performance objectives.

Example 2 – I have attended CIWEM Young Members Study Tour and Branch meetings and visits in order to gain a wider knowledge of water and environmental affairs.

I have a six-monthly appraisal with my manager to discuss my personal development and identify any training needs. I have attended a variety of professional training sessions, including courses on presentation skills, time management, health and safety and assertiveness. I have improved my computer skills through training courses, individual learning and discussion with colleagues. I have developed spreadsheets to monitor and optimise use of chemical resources.

I have been involved in site progress meetings with engineers, the EA and contractors.

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	A2) Employ new corporate or personal strategies or policies that address change or development (e.g. legislative, economic or technological).
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To be completed by the candidate only

Mentor/Supervisor/Sponsor: Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ _____
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TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
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Reviewers Comments

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	B1) Work within the identified, influences and success factors relevant to the development, improvement and sustainable use of environmental resources.
To be completed by the candidate only	
Mentor/Supervisor/Sponsor : Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ _____

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Reviewers Comments	

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	B2) Apply appropriate solutions.
To be completed by the candidate only	
Mentor/Supervisor/Sponsor : Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ _____

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Reviewers Comments	

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	B3) Demonstrate the ability to implement and introduce change.
To be completed by the candidate only	
Mentor/Supervisor/Sponsor : Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ _____

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Reviewers Comments	

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	B4) Support the operation and continuing maintenance of new systems and services. Monitor and assess their performance.
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To be completed by the candidate only

Mentor/Supervisor/Sponsor : Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ _____
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TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
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Reviewers Comments

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	C1) Apply professional ethics in your work.
<p>To be completed by the candidate only</p>	
<p>Mentor/Supervisor/Sponsor :</p> <p>Signature: _____</p> <p>Date: _____</p>	<p>Judged attainment by:</p> <p>Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/></p> <p>Observation <input type="checkbox"/> Other (comments) _____</p> <p>_____</p>

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

<p>Demonstrated In:</p> <p>Reports <input type="checkbox"/> Interview <input type="checkbox"/></p>	<p>Decision</p> <p>Pass <input type="checkbox"/> Fail <input type="checkbox"/></p>
<p>Reviewers Comments</p>	

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	C2) Contribute to the effectiveness and competitiveness of your organisation by efficient management of resources.
To be completed by the candidate only	
Mentor/Supervisor/Sponsor : Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ - _____

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Reviewers Comments	

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:

C3) Demonstrate a commitment to the promotion of Health & Safety, quality and sustainable environmental activity (Applicants shall give examples from all three areas).

To be completed by the candidate only

Mentor/Supervisor/Sponsor :

Judged attainment by:

Signature: _____

Written Reports Questioning

Date: _____

Observation Other (comments) _____

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In:

Decision

Reports Interview

Pass Fail

Reviewers Comments

EVIDENCE OF ATTAINMENT OF MANDATORY COMPETENCES

STATEMENT OF ATTAINMENT:	C4) Demonstrate a commitment to continuing learning and professional development.
To be completed by the candidate only	
Mentor/Supervisor/Sponsor : Signature: _____ Date: _____	Judged attainment by: Written Reports <input type="checkbox"/> Questioning <input type="checkbox"/> Observation <input type="checkbox"/> Other (comments) _____ _____

TO BE COMPLETED BY PROFESSIONAL REVIEWERS ONLY

Demonstrated In: Reports <input type="checkbox"/> Interview <input type="checkbox"/>	Decision Pass <input type="checkbox"/> Fail <input type="checkbox"/>
Reviewers Comments	

CANDIDATES NAME _____

NOTES FOR MENTORS/SPONSORS/SUPERVISORS

Full details of the mandatory competences are given as an appendix to this form. It is important that you indicate in the 'judged attainment by' column of the form (Mentor/Sponsor or Supervisor), how you have judged the candidate's attainment of the mandatory competences (e.g. by written reports, observation or questioning). Please sign each competence and this form indicating your status (*delete as applicable).

NAME: _____ *MENTOR/SPONSOR/SUPERVISOR

QUALIFICATIONS: _____

POSITION IN ORGANISATION: _____

SIGNATURE: _____ DATE: _____

NOTES FOR PROFESSIONAL REVIEWERS

It is important that you assess the degree to which the candidate has demonstrated attainment of the mandatory competences in both reports and at interview. Please tick the boxes appropriately and complete your comments on each competence in the box Provided. All Reviewers on the panel must jointly sign this form, on the day of the interview.

RECOMMENDATION

We the undersigned confirm that this Applicant has satisfied/not satisfied* the Institution's requirements and Mandatory Competences and we/we do not* recommend to the Council that the Applicant be admitted to the grade of: *Associate/IEng

REVIEWER COMMENTS

NAME:
CEng/IEng _____

SIGNATURE _____

NAME:
CEng/IEng _____

SIGNATURE _____

NAME
CEng/IEng _____

SIGNATURE _____

DATE _____

April 2006