



Engineering Construction Industry Training Board (ECITB) Standards Setting Body

Assessment Strategy for Engineering Construction Industry SQA Accreditation qualifications RV1.0

Contents

Introduction.....	3
Assessment requirements	3
Realistic working environment and simulation	5
Realistic working environment.....	5
Simulation	5
The roles and requirements of assessors and quality assurers	6
Internal Quality Assurers (IQAs)	6
External Quality Assurers (EQAs)	7
Confirmation of Competence	7
Expert Witness Advisors (EWA's)	7
<i>External quality assurance requirements for awarding bodies</i>	7
Additional information	9
Qualifications covered	9

Introduction

1. As a Standards Setting Body (SSB), ECITB has a responsibility to ensure we provide awarding bodies with a consistent approach to assessment and quality assurance ensuring compliance with SQA Accreditation's regulatory requirements. The key areas this assessment strategy will cover are:
 - assessment requirements
 - the extent to which simulation may be used
 - the assessment environment, including what constitutes a realistic working environment when assessing competence
 - the roles and requirements of assessor and quality assurers
 - external quality assurance requirements for awarding bodies.
2. We have prepared this assessment strategy for awarding bodies wishing to offer qualifications for craft and technical occupations within the engineering construction industry (ECI) and related industry sectors. Throughout this document, the term *qualification* refers to all qualifications accredited by SQA Accreditation.
3. Awarding bodies must use the assessment strategy as the basis for developing and defining the evidence types and assessment methods their providers will use. This includes specifying how the qualification will be internally and externally quality assured.
4. The strategy is based on information and feedback from a range of stakeholders including awarding bodies, employers, training providers, practitioners, training /development staff and assessors/quality assurers with experience of delivering qualifications within the industry. Their views on the most appropriate means of ensuring the effective assessment and quality assurance of the revised qualifications have been actively sought and used.
5. The different occupations covered by the qualifications addressed by this strategy are found widely across different organisations and in relation to a range of different projects. A critical feature of employment in the ECI is the prevalence of fixed term contracts whilst a particular project is in progress. Although some of these contracts may be of several years in length, others are short term. Practitioners need to be flexible and may expect to work for several different contractor organisations, on the premises of a range of clients, over their working life and while studying for the qualification. From the perspective of assessment, centres need to be able to cater for practitioners transferring to new contracts, perhaps bringing with them partially completed portfolios of evidence. It is critical, therefore, that the assessment system in operation provides employers, candidates, assessors and quality assurers with the confidence that the assessment and internal quality assurance decisions taken by any centre are robust and accurate. This assessment strategy provides principles for the Awarding Body (AB) to follow to ensure that centre assessment and quality assurance practice is of a consistently high standard.

Assessment requirements

6. Unless the use of evidence from realistic working environments is permitted in respect of a given unit, we require that evidence of competence must be drawn

from and reflect activity undertaken by the candidate in the workplace. For this assessment strategy, the workplace is defined as the candidate's normal place of work for their occupation. This may be in an office, on site or in a production/fabrication workshop characterised by features such as noise, heat, contiguous plant and equipment, inclement weather conditions, time constraints.

7. We require that the AB develops and updates guidance to Assessors and IQAs on the assessment of the knowledge requirements as specified in the units and criteria.
8. Within the constraints and commercial pressures of the workplace, candidates and assessors should be encouraged to make effective use of all available opportunities for evidence collection in line with the following principles:
 - the evidence must be valid, in that it meets the requirements of the standard
 - the evidence must be capable of being authenticated as the candidate's own work
 - the evidence must be reliable in that the work is consistent over time
 - the evidence must be current in that it is still relevant at the time of assessment
 - the evidence must be sufficient in that it covers all the requirements of the assessment
 - evidence from a range of different sources, work activities and contexts is preferable to multiple instances of evidence of the same type
 - assessors should pay due regard to the cost-effectiveness of using varied sources of evidence when planning assessments with a candidate.
9. The evidence must be such as to demonstrate that the candidate is competent across the entire scope of the unit and over a period of time. Where this scope is extensive, a statement within the unit details those aspects of the scope which **must** be assessed using evidence from candidate performance at work or in a realistic working environment. All other aspects of the scope can be evidenced using information drawn from candidate performance from a range of other assessment methods including expert witness testimony, observation, work products, simulation (if permitted for the unit) or question and answer.

Where evidence from simulation is not permitted, the whole of the candidate's performance evidence must be taken from his/her practice at work or in a realistic working environment.
10. There must be one invigilated online knowledge test per unit set by the AB and marked by its online testing platform that covers all the knowledge required, including knowledge that candidates do not always have the opportunity to demonstrate as part of the observations. Each knowledge assessment criteria must be tested by a minimum of one multiple choice question with a choice of 1 from 4 potential answers. Each question must be worth one mark.

Realistic working environment and simulation

Realistic working environment

11. The use of a realistic working environment as a means of assessing competence is acceptable in relation to those instances where one or more of the following characteristics apply:
 - health and safety could be compromised by seeking workplace evidence
 - the behaviour or situation under which assessment occurs happens infrequently in the workplace
 - the responsibility for the work rests with the candidate, but it is typically either delegated or carried out jointly with another and the candidate has limited opportunity to demonstrate it directly and individually
 - there would be unacceptable commercial or operational risk in securing workplace assessment
 - facilities would need to be placed reasonably, outside of its usual parameters, to allow for assessment to take place
12. Where realistic working environments are permitted, the activity must be designed to reflect the activity as it would be carried out in a typical workplace environment, including:
 - the presence, actions, and capabilities of other interacting personnel
 - the urgency with which the activity must be carried out and the time needed to complete it
 - the number and sequence of actions needed to complete the activity
 - the number and complexity of the factors affecting the activity
 - the skills and knowledge needed to carry out the activity
 - the nature and availability of resources needed to carry out the activity
 - access to references and sources of advice and assistance that could be needed if problems arise
 - the type of documentation to be completed
 - the standards to which the activity must be carried out, including any standard ECI (or related industry) practices and procedures which must be followed
 - the outcomes which the activity will produce
 - access to normal/usual ECI (or related industry) workplace instructions.
13. We require that the AB issues illustrative guidance on the application of these principles within all vocational qualifications covered by this assessment strategy.

Simulation

14. Centre proposals for the use of simulation must be approved by the EQA on behalf of the AB in advance of being used and may be rejected if they fail to allow the candidate to demonstrate the skill being assessed as it would be required in a workplace.

The roles and requirements of assessors and quality assurers

15. Assessors are responsible for:

- assessing candidates' performance against the relevant occupational standards. Therefore, they must have a thorough and up to date technical knowledge of what constitutes effective performance and good working practices in the occupational context addressed by the qualification
- maintaining their continuous professional development (CPD) and providing evidence to the EQA upon request

16. The following characteristics have been highlighted as being those on which centres must select suitable assessors:

- verifiable relevant and sustained recent experience in the relevant sector in a role which calls for the demonstration and/or supervision of the competences contained within the standards to be assessed
- achieved, or be working towards gaining within the required timeframe, an assessor qualification that is recognised by SQA Accreditation
- certification in the relevant qualification/ occupation of which they are assessing, or industry accepted equivalent qualification
- interpersonal skills needed to support and encourage candidates in the planning and collection of suitable evidence
- communication skills needed to maintain clear and appropriate records of the assessment process and to explain assessment requirements to candidates
- sufficient understanding of the Engineering Construction Industry (ECI) (or related industry) working contexts from which evidence may be gained, to enable the cost-effective use of diverse sources of evidence in forming assessment decisions.

17. There may be a requirement to use more than one assessor per candidate to cover the full award. In such situations, ABs must have mechanisms in place to ensure the co-ordination and cohesion of assessment processes.

Internal Quality Assurers (IQAs)

18. IQAs must have direct experience or substantial knowledge of the occupational area for which they are responsible for verifying assessment procedures and decisions. They must also have similar communication and interpersonal skills to those of an assessor. IQAs must have achieved, or be working towards gaining within the required timeframe, an internal quality assurer qualification that is recognised by SQA Accreditation.

19. It is unlikely that an individual who does not have the verifiable relevant and sustained recent experience in a role which calls for the demonstration and/or supervision of the competences contained within the standards to be assessed, would have the necessary occupational, communication or interpersonal skills to be fully effective as an IQA.

20. IQAs are responsible for maintaining their continuous professional development (CPD) and providing evidence to the EQA upon request.

External Quality Assurers (EQAs)

21. EQAs are a crucial component of the quality control system applied by the AB. Their role calls for them to be able to pass on and explain technical and other aspects of best practice to centres. They will evaluate centre assessment and internal quality assurance practices in terms of procedural relevance and occupational validity. Consequently, they must not only possess well developed communication and interpersonal skills, but also have current, sufficient knowledge, skills and understanding of the engineering construction industry. EQAs must have achieved, or be working towards gaining within the required timeframe, an external quality assurance qualification that is recognised by SQA Accreditation.
22. It is therefore unlikely that an individual who does not have significant knowledge and understanding gained in a supervisory or promoted role within the engineering industry would have the necessary occupational, communication or interpersonal skills to be fully effective as an EQA.

Confirmation of Competence

23. ABs need to have in place effective systems for confirming the occupational competence of assessors and internal quality assurers in centres. The systems for monitoring must enable those reviewing CVs to make balanced and objective decisions, using evidence from qualifications, where presented, as well as consideration of the breadth and depth of relevant experience from the workplace.

Expert Witness Advisors (EWA's)

24. EWAs are to be used **only in exceptional circumstances** when it is not possible for the candidate to be directly observed by an Approved Assessor either in person or using video technology. EWAs will make judgements as to whether the candidate has performed a skill to the standards required of the qualification. The AB must ensure centres make clear the difference between a Witness Statement which is supporting evidence assessed by an Assessor against assessment criteria.
25. EWA's must be approved by the AB in advance of any assessment. The EWA must be someone within the candidate's organisation to whom the candidate works and/or reports, i.e. supervisor, lead technician, line manager or person within the project quality chain, project manager, quality control engineer, colleague or workmate etc. The EWA is required to have and demonstrate evidence of:
- Direct experience and competence in the discipline/occupational area at the appropriate to the level that they are observing.
and ideally a
 - qualification in the discipline/occupational area to the level that they are observing.

N.B. expert witness advisers are **not required** to hold **assessor** qualifications

External quality assurance requirements for awarding bodies

26. ABs, through the quality control mechanisms specified within the current SQA Accreditation's Regulatory Principles, must ensure robust, effective control of approved centres assessment processes. This ensures that judgement of what is

valid, authentic, current, reliable, and sufficient evidence is maintained. Our requirements regarding external quality assurance are detailed below:

27. The AB must devise and implement an EQA Strategy which monitors all elements of the internal quality assurance and assessment processes for approved centres.
28. The EQA Strategy will define monitoring activities for all approved centres and qualifications on a risk-based approach using data gathered and reviewed over time.
29. ABs must implement a risk rating system to ensure that EQA interventions can be appropriately targeted to address potential and actual problems in a proactive and effective manner. In support of this, it is also required that EQA reports regarding centres made to the AB are monitored in a systematic manner to enable potential difficulties quickly to be identified and addressed.
30. We require that ABs ensure that high quality systems are in place to enable centres to develop and maintain good practice in the processes of assessment and internal quality assurance. These must include the following:
 - regular monitoring meetings including AB feedback to centres, setting and monitoring action plans to enable continuous improvement
 - general guidance materials based on established good practice
 - a systematic and responsive approach to collecting and responding to centre comments and feedback to inform continuous improvement
 - ensuring that all centres are advised of AB recommendations on dealing with frequently met problems.
31. Approved centres will receive a minimum of one EQA visit in any 12-month period. We require awarding bodies to provide frequent EQA visits for new centres, who were approved within the last 12 months.
32. ABs must require EQAs to complete an EQA Sampling Plan for each Approved Centre. This is used by the EQA to plan and record the risk, frequency and type of external quality assurance monitoring and sampling activities.
33. ABs must require EQAs to plan and carry out monitoring activities as per their EQA Sampling strategy which will:
 - Ensure, through appropriate sampling, that assessment arrangements are fit for purpose and are being delivered in accordance with the requirements specified for each qualification.
 - Ensure the centre is taking all reasonable steps to prevent the occurrence of malpractice or maladministration.
 - Confirm that centres continue to meet the criteria against which they were recognised.
 - Confirm that assessments are conducted by appropriately qualified and occupationally expert assessors.
 - Confirm that assessment decisions are regularly sampled, through internal verification, for accuracy against the national standards.
 - Check that claims for certification are authentic, valid, and supported by auditable records.

- Ensure that the centre is retaining appropriate records of assessment and internal verification decisions for three years after certification.
 - Advise and support centres on the interpretation of national standards, learning outcomes and assessment criteria.
 - Provide centres with up-to-date information and advice in line with regulatory and industry guidance.
 - Advise and support centres on AB requirements and procedures, including equality of access to assessment and appeals against AB decisions.
 - Require the imposition of appropriate sanctions in line with the AB Sanctions Policy, on centres that fail to meet the requirements
- 34.If the AB does not require specific assessment planning arrangements forms and use of AB-supplied assessment recording forms and systems for centres, the centres must submit details of the assessment planning arrangements and assessment recording forms and systems they intend to use to the AB.
- 35.The submitted information must include details of the planned use of realistic working environments and the design of simulations. The EQA must be satisfied that these arrangements, forms, and systems accord with good practice requirements and with the assessment strategy stipulations regarding simulation design and use. Recording forms and systems must be such as to provide accurate and complete information on which to audit assessment and internal quality assurance decision-making.

Additional information

The engineering construction industry is the cornerstone of Britain's energy and process industries. ECI companies design, engineer, construct and decommission some of the biggest infrastructure projects in the country and overseas – and they are central to delivering net zero.

Engineering construction operates across the oil and gas, nuclear and renewables sectors, as well as major process industries, such as chemicals, pharmaceuticals, food processing, water, and waste treatment. Around 190,000 jobs are directly supported by engineering construction.

Related industries include (but are not limited to) aerospace and other military engineering and railways.

Qualifications covered

This Assessment Strategy covers the following qualifications

Sector	Engineering Construction
Qualification Title(s)	

	<p>Diploma in Installing Engineering Construction Plant and Systems – Pipefitting at SCQF Level 6</p> <p>Diploma in Moving Engineering Construction Loads at SCQF Level 6</p> <p>Diploma in Maintaining Engineering Construction Systems – Electrical at SCQF Level 7</p> <p>Diploma in Maintaining Engineering Construction Systems – Mechanical at SCQF Level 7</p> <p>Diploma in Maintaining Engineering Construction Systems – Instrumentation and Controls at SCQF Level 7</p> <p>Diploma in Supporting Engineering Construction Activities at SCQF Level 5</p> <p>Diploma in Supporting the Installation of Engineering Construction Plant and Systems – Pipefitting at SCQF Level 5</p> <p>Diploma in Engineering Construction Design and Draughting at SCQF Level 6</p>
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