



Engineering Construction Industry Training Board

Qualification Information Booklet

Level 4 Diploma

in Managing Welding Operations

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Introduction

This booklet has been developed to provide anyone considering the ECITB Level 4 Diploma in Managing Welding Operations with an introduction to the award currently available through ECITB. This booklet contains a copy of the QCF units within the Managing Welding Operations qualification as well as a summary of the way in which QCF qualifications are constructed; what the process is in achieving the ECITB qualification; and how it is assessed.

Should you have any queries, or require any further information regarding the awards offered by ECITB please contact the Awards and Qualifications Administrator at:

HEAD OFFICE ADDRESS	CONTACT DETAILS
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1. What is an ECITB QCF qualification?

ECITB Qualification Credit Framework qualifications (QCF) are vocational qualifications which are based on the National Occupational Standards (NOS) of that particular sector of industry. NOS are developed by employers and professional bodies in conjunction with the Standard Setting Body and describe what is meant by occupational competence within a particular job role.

All QCF qualifications are structured in such a way that they can be broken down into the following common parts:

- Units;
- Level;
- Credit value;
- Learner outcomes;
- Assessment criteria;
- Assessment requirements.

Each of these parts is further described below.

Units	A qualification is divided into units, each of which describes an activity which the candidate will be expected to perform competently.
Level	The level represents the complexity, autonomy and/or range of achievement expressed within the unit.
Credit value	The credit value represents the learning time being defined as the time taken by learners at the level of the unit, on average, to complete the learning outcomes of the unit to the standard determined by the assessment criteria.
Learner outcomes	Learner outcomes set out what a candidate is expected to know, understand or be able to do as the result of a process of learning.
Assessment Criteria	The assessment criteria within a unit specifies the standard a candidate is expected to meet to demonstrate that the learning outcomes have been achieved.
Assessment requirements	Details any requirements about the way a unit must be assessed.

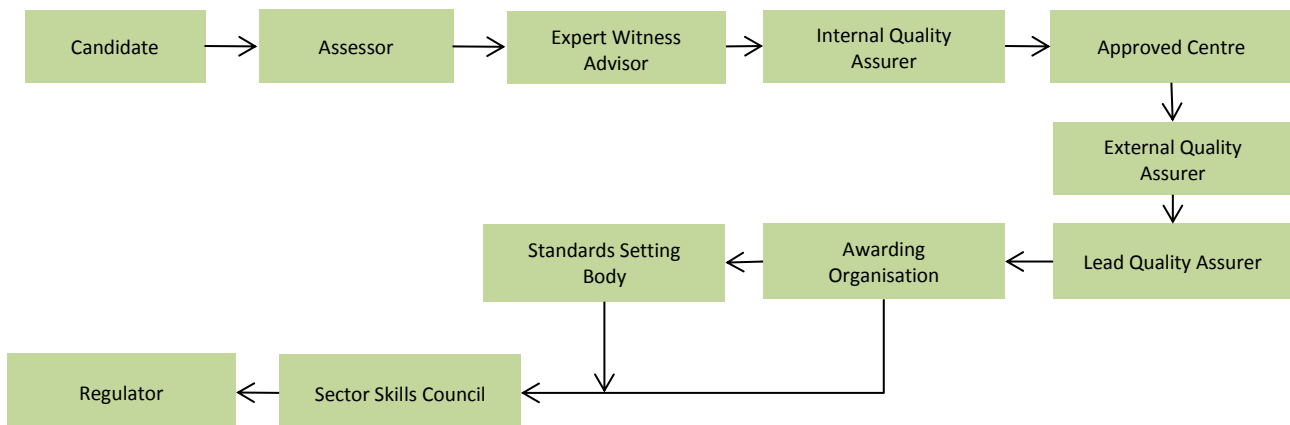
1.1 What is the process involved in achieving a QCF qualification?

Once a candidate has been registered with the awarding organisation, in this case ECITB Awards and Qualifications, they will be ready to begin working towards their qualification. They will then be introduced to the assessor who will offer support and guidance as the candidate progresses through the stages of the qualification. The assessor will firstly introduce the candidate to the other key members of the qualification system. These will include:

- Internal Quality Assurer
- Expert Witness Advisor
- Approved Centre
- Centre Co-ordinator
- External Quality Assurer
- Lead Quality Assurer
- Awarding Organisation
- Standard Setting Body
- Regulator (Office of Qualifications and Examinations Regulation (Ofqual)).

The Assessor will also explain what roles each of these key members will play in assuring the quality of the qualifications system. This is vitally important as it helps to ensure that the assessment of qualifications is valid and reliable and that certificates are only awarded to those candidates who do successfully meet the standards required.

The diagram below illustrates the flow of information between each of the key members.



The following tables summarise the roles which each of the key members perform in quality assuring the regulated qualifications systems, including N/SVQs.

Who's who	What is their role?
<p>Candidates Individuals seeking validation for their achievements and competence.</p>	<ul style="list-style-type: none"> • Show they can perform to the national standards in order to be awarded credit, counting towards a Qualification and demonstrate the specified knowledge, understanding and skills. • Take some responsibility for the quality of evidence provided to assessors.
<p>Assessors Nominated by an approved centre and approved by an awarding organisation to assess a candidate's evidence. In direct contact with candidates. Holds appropriate qualifications as agreed by the regulators such as D32 and D33 or A1.</p>	<ul style="list-style-type: none"> • Judge candidates' evidence against the national standards. • Advise candidates on opportunities to collect evidence. • Ensure that the evidence provided is current. (Up to and including the two year period prior to the portfolio completion date for any unit or qualification) • Decide whether the candidate has demonstrated competence, give feedback on the decision and record it. • Ensure that their assessment practice meets awarding organisation guidance and national standards.
<p>Expert Witness Advisor Nominated by an approved centre and approved by an awarding organisation to carry out direct observation as the exception when an assessor is not available.</p>	<ul style="list-style-type: none"> • Can carry out direct observation of the candidate against the criteria for the mandatory assessor observation of assessment criteria and assessment requirements where the practicalities and costs of having an assessor available to observe the candidate at work prohibitive or impracticable. • The EWA shall meet the criteria for assessor occupational expertise as specified by the ECITB Standards Setting Body Assessment Strategy. • A registered EWA can provide mandatory direct observation of any candidate in the relevant qualification for any approved centre as long as the assessor/EWA procedures are followed.
<p>Internal Quality Assurers Nominated by an approved centre and approved by an awarding organisation to ensure consistency and quality of assessment. Holds V1 and A1 or appropriate qualifications as agreed by the regulators. Works to the ECITB IQA Code of Practice</p>	<ul style="list-style-type: none"> • Work with assessors to ensure the quality and consistency of assessment. • Sample candidate assessments to ensure consistent assessment. • Ensure their own internal quality assurance meets current standards. • Ensure that assessment and verification records and documents are fit for purpose and meet awarding organisation requirements. • Ensure that requests for certificates to the awarding organisation are based on assessments of consistent quality. • Provide support and guidance for the centre's assessors.
<p>Approved Centre Co-ordinators Point of contact for awarding bodies. May take on some Internal Quality Assurer functions, particularly relating to administration.</p>	<ul style="list-style-type: none"> • Act as a contact for the awarding organisation and the External Quality Assurer. • Ensure that there are accurate assessment and verification records for the qualification. • Request certificates and credits from the awarding organisation.

<p>Approved Centres Organisations approved by awarding bodies to assess and verify qualifications.</p>	<ul style="list-style-type: none"> • Comply with regulatory requirements. • Manage assessment and verification on a day-to-day basis. • Have effective assessment practices and internal verification procedures. • Meet awarding organisation requirements for qualification delivery. • Have sufficient competent Assessors and Internal Quality Assurers with enough time and authority to carry out their roles effectively.
<p>Lead Quality Assurer Appointed by the ECITB awarding organisation to manage teams of External Quality Assurers (EQA)</p>	<ul style="list-style-type: none"> • Manage the workload and monitor performance of the External Quality Assurers. • Provide advice and guidance to External Quality Assurers. • Carry out all new centre approvals. • Approve post approval monitoring reports and ensure all actions are implemented. • Approve any recommendations for sanctions on centres. • Resolve disputes. • Approve recommendations for appointment of new assessors and Internal Quality Assurers.
<p>External Quality Assurers Appointed by the ECITB awarding organisation to monitor the work of approved centres. Act as key link between the awarding organisation and approved centres. Hold V2 and A1 or appropriate qualification as agreed with the regulators. Work to the ECITB Code of Practice.</p>	<ul style="list-style-type: none"> • Make sure that decisions on competence are consistent across centres. • Make sure that the quality of assessment and verification meets national standards. • Sample candidate assessments and monitor assessment and verification practices in centres, including interviews with assessors and Internal Quality Assurers and candidates. • Provide advice, guidance and feedback to centres. • Make regular visits to centres and assessment locations. • Ensure that their own verification practice meets V2 and A1 or appropriate qualification as agreed with the regulators.
<p>Awarding Organisations An organisation approved by the regulators to award qualifications.</p>	<ul style="list-style-type: none"> • Ensure the quality and consistency of assessment for qualifications nationally. • Produce guidance for centres. • Appoint, support and develop External Quality Assurers, allocate them to centres and monitor their work. • Approve and monitor centres against the approved centre criteria. • Award credit. • Collect information from centres to inform national decisions about qualification delivery. • Provide information to the regulators.
<p>Standards Setting Bodies (SSB) Develop the national occupational standards on which qualifications are based.</p>	<ul style="list-style-type: none"> • Work with industry to develop National Occupational Standards. • Work with awarding bodies to produce assessment strategies. • Provide information about, and clarification of, the National Occupational Standards.
<p>Sector Skills Councils (SSC)</p>	<ul style="list-style-type: none"> • Accredite qualifications put forward by awarding organisations if they meet the published criteria.

Ofqual

Ofqual is the regulator of qualifications, test and examinations in England, Wales and Northern Ireland.

- Ensure that organisations that offer and deliver qualifications (awarding organisations) have good systems in place, and that they are held to account for their performance.
- Ensure that all qualifications offered by awarding organisations are fair and are comparable with other qualifications.
- Ensure that standards in qualifications, exams and tests are monitored and the findings are reported.
- Ensure that there is fair access to qualifications for all candidates.
- Ensure the quality of marking of exams, tests and other assessments is high, so that learners get the results they deserve.
- Ensure that the qualifications market provides value for money and meets the needs of learners and employers.
- Ensure that debate about important topics, such as standards of exams and qualifications, is encouraged.

1.2 What will be assessed?

Once the candidate has decided with the assessor which route they will take through the qualification, i.e. the units they will work towards, they are ready to begin assessment. Broadly speaking two aspects of the candidate's working practice will be assessed: their performance; and their knowledge and understanding. The assessor will work with the candidate to plan how, when and where evidence will be gathered to cover these aspects.

1.3 How will assessment take place?

There are a variety of methods through which evidence of the candidate's competence and understanding can be gathered. There are also different methods by which to collect performance and knowledge evidence.;

- Direct observation of the candidate's performance by the assessor and/or EWA.
- Testimony from a witness such as a candidate's colleague, this is also observation of the candidate.
- Documentary evidence (*such as permits to work, work specifications etc.*) which relate to work successfully completed by the candidate on a past occasion.
- Demonstration of a task by the candidate at the assessor's request. This is known as 'Simulation'.
- Questioning of the candidate to establish knowledge and understanding requirements.

These options give an assessor and the candidate some flexibility in how they are able to prove competence. However, some of these assessment methods are less reliable and as such their use may be limited within the qualification. If this is the case the guidance contained within the QCF units will provide further clarification. Direct observation of the candidate by the assessor is the most reliable, and often the most straightforward, method of gathering evidence. The approved centre and the assessment team responsible for assessing the candidate will determine whether observation or some of the other assessment methods listed above offer the best assessment solution for each individual candidate.

In relation to evidence of knowledge and understanding there are two main assessment methods:

1. Performance evidence gathered in the course of working towards the unit.
2. Questioning of the candidate.

In some instances, it will be self-evident from the candidate's performance that they have acquired the necessary knowledge and understanding e.g. where the unit requires knowledge of how to carry out a specific task and by carrying it out effectively the candidate demonstrates that they know what to do.

However, knowledge of why something is done in a certain way cannot be demonstrated through performance alone and questioning of the candidate is another assessment method that could be used.

1.4 Simulation requirements

Demonstration, as previously outlined, is one of the assessment methods available to candidates and assessors through which to observe a candidate's competence. However, its use has been limited to certain specific units in which it may be possible to gather the naturally occurring workplace evidence normally required.

Reference needs to be made to the standards to confirm the status of each unit, however, as a rule simulation is only permissible where one or more of the following characteristics apply:

- a) Health and safety could be compromised by seeking workplace evidence.
- b) The behaviour or situation under which assessment occurs happens infrequently in the workplace.
- c) 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.
- d) There would be unacceptable commercial or operational risk in securing workplace assessment.
- e) Facilities would need to be placed in an unacceptable operating state to allow for assessment to take place.

The assessment requirements detail within each unit whether or not simulation is permitted within the assessment for that unit.

Where simulation is permitted, the simulated activity must be designed to reflect the activity as it would be carried out in a typical workplace environment, including:

- a) The presence, actions and capabilities of other interacting personnel.
- b) The urgency with which the activity must be carried out and the time needed to complete it.
- c) The number and sequence of actions needed to complete the activity.
- d) The number and complexity of the factors affecting the activity.
- e) The skills and knowledge needed to carry out the activity.
- f) The nature and availability of resources needed to carry out the activity.
- g) Access to references and sources of advice and assistance that could be needed if problems arise.
- h) The type of documentation to be completed.
- i) The standards to which the activity must be carried out, including any practices and procedures which must be followed.
- j) The outcomes which the activity will produce.
- k) Access to normal/usual workplace instructions.

1.5 Assessment of candidates with particular assessment requirements

Equal Opportunities, Reasonable Adjustments and Special Considerations.

Access to Fair Assessment

ECITB Awards & Qualifications requires approved centres to demonstrate a clear commitment to access to fair assessment, equal opportunities, reasonable adjustments and special considerations and to operate a Fair Assessment Policy in all matters concerning the assessment of candidates for the award of Qualifications and/or certificates or unit credits and in any appeals against approved centre decisions.

The policy must take account of full current legislation in the area of access to fair assessment and equal opportunities.

The approved centre must ensure that relevant staff in the assessment team receives training in the relevant sections of current legislation and that sufficient and appropriate information with regard to the content of this procedure is passed to all members of the approved centre assessment team.

The approved centre must maintain records of assessment and verification decisions, which demonstrate that:

- Assessment decisions only discriminate between candidates on the basis of the competence defined by the National Occupational Standards specified in the qualification.
- Assessment judgements are made regardless of race, gender, disability, nationality, religion, age, sexual orientation, family status or any other irrelevant factor.

Arrangements for candidates with particular assessment requirements

Principles

Approved centres must ensure that there are no unnecessary barriers to assessment, which prevent candidates from effectively demonstrating their attainment. Arrangements for candidates with particular assessment requirements (special arrangements) must also ensure that such candidates are not given, or do not appear to be given, an unfair advantage. Special arrangements are generally not appropriate where the candidate's particular difficulty directly affects performance in the actual attributes that are the focus of assessment.

Approved centres must make special arrangements according to the needs of the individual candidate, reflecting the candidate's usual method of working, the assessment requirements as set out in the specification and any guidelines set down by the regulatory authorities. Any special arrangements must ensure that the validity, reliability and integrity of the assessment are preserved and that certificates accurately reflect candidate attainment.

Approved centres are only required to do what is 'reasonable' in terms of giving access. What is reasonable will depend on the individual circumstances, cost implications and the practicality and effectiveness of the adjustment. As stated above the NOS must be taken into consideration, as must any safety and health implications.

There are two ways in which access to fair assessment can be maintained

1. Through reasonable adjustments.
2. Through special consideration.

Reasonable Adjustments

A reasonable adjustment is any action that helps to reduce the effect of a disability that places the candidate at a substantial disadvantage in the assessment situation.

Reasonable adjustments must not affect the integrity of what needs to be assessed, but may involve:

- Changing standard assessment arrangements, for example allowing candidates extra time to complete the assessment activity.
- Adapting assessment materials, such as providing materials in Braille.
- Providing access facilitators during assessment, such as a sign language interpreter or a reader.
- Re-organising the assessment room, such as removing visual stimuli for an autistic candidate.

Reasonable adjustments will not be taken into consideration during the assessment of the candidates work.

Special Consideration

Special consideration is given following an assessment to candidates who are present for the assessment but may have been disadvantaged by temporary illness, injury or adverse circumstances, which arose at or near the time of assessment.

Special consideration should not give the candidate an unfair advantage neither should its use cause the user of the certificate to be misled regarding a candidate's achievements. The candidate's result must reflect his or her achievement in the assessment and not necessarily his or her potential ability.

Where an assessment requires a competence, criteria or standard to be met fully, it may not be possible to apply special consideration. In some circumstances it may be more appropriate to offer the candidate an opportunity to retake the assessment at a later date or to extend the registration period so that the candidate has more time to complete the assessment activity.

Approved centres must make provision for special consideration to ensure that candidates who suffer temporary illness, injury or indisposition at the time of assessment are treated fairly. Such assessment should be made available to the candidate as soon as is reasonably practical within the guidelines of access to fair assessment. Where this is not possible, the awarding organisation will consider each individual case for special consideration, identifying the minimum requirements for an award to be made.

Procedures

Approved centre assessment team members should refer to the written procedures provided within the ECITB Awards & Qualifications Quality Assurance Procedures Manual for further guidance and information or to their own Approved Centre Operations Manual.

Monitoring and Reporting

The awarding organisation will monitor, evaluate and report annually on the use of special arrangements by its approved centres. Relevant data will be shared with the regulatory authorities on request.

1.6 Recommended prior learning

There is no prior knowledge, attainment or experience required for this qualification. Existing workers are expected to be competent by virtue of their length of service and experience and satisfactory performance in their roles, and will need to achieve the qualification in order to have this competence validated.

1.7 Credit

Credit is awarded to candidates for the successful achievement of the learning outcomes of a unit. The number of credits awarded will be the same as the value of the achieved unit. It is not possible for some credit to be achieved for partial completion of a unit or for candidates be awarded credit when all learning outcomes are not achieved by virtue of any 'compensation' for stronger performance in other areas of learning/achievement.

Credit accumulation is the term used to describe the process of putting a combination of credits to meet the achievement requirements of a qualification. The rules of combination for a qualification determine the requirements for achievement of credits through particular units. Awarding Organisations award qualifications based on this process.

Credit transfer describes the process of using a credit or credits awarded in the context of a different qualification or awarded by a different awarding organisation towards the achievement requirements of another qualification. Credits can only be transferred between qualifications and awarding organisations subject to the rules of combination for the receiving qualification.

1.8 Rules of Combination

Rules of combination specify the credits that need to be achieved through completion of particular units for a qualification to be awarded. All accredited qualifications within the QCF must have a set of rules of combination. Rules of combination set out the credit value of the qualification, credits from mandatory units and credits from optional units, credits from equivalent units and exemptions along with time limits on the process of credit accumulation or exemptions.

Exemptions are detailed within the rules of combination, exemptions set out any exemption from the requirement to achieve credit for units that candidates can claim, based on certificated achievement outside the QCF deemed to be of equivalent value to a QCF unit or units.

Time limits on the process of credit accumulation or exemptions are set out for each QCF unit within the rules of combination. ECITB QCF units have a time limit of 24 months from achievement for use within a QCF qualification.

1.9 Career development within the engineering construction industry

The ECITB's Apprenticeship programme is its main vehicle for recruiting and training young people to meet the future skills requirements of the industry. Qualifications at Levels 2 and 3 are often an integral part of this scheme.

The ECITB provides an alternative training route towards qualifications for those who have not completed an apprenticeship but seek to have their competence validated. Information on this scheme is available on request from ECITB offices.

For more information about career progression you can go to the ECITB website.

2. Qualification Structure

2.1 Level 4 Diploma in Managing Welding Operations

To achieve this qualification, candidates must attain a minimum of 81 credits made up of:

- all NINE of the Mandatory Units (75 credits)
plus
- a minimum of TWO units from the Optional Units (minimum 6 credits)

MANDATORY UNITS – candidates must achieve all NINE units to a total of 75 credits

Ref. Number	Unit Title	Level	Credit
CO - UA1	Contribute to Effective Working Relationships in Engineering Construction	2	3
CO - UA2	Work Safely and Minimise Risk in Engineering Construction	2	4
CO - UA3	Identify and Deal with Hazards and Emergencies in the Engineering Construction Work Environment	3	6
MWO - UA1	Identify and Assess the Hazards Arising from Welding Operations	4	14
MWO - UA2	Review an Engineering Activity to Determine Welding Requirements	4	18
MWO - UA3	Determine and Secure Resource Requirements to Achieve Welding Objectives	5	9
MWO - UA4	Deploy Resources to Welding Activities	5	5
MWO - UA5	Monitor Welding Activities	5	6
MWO - UA6	Solve Problems in Weld Production	4	10

OPTIONAL UNITS – candidates must achieve a minimum of TWO units to attain at least 6 credits.

Ref. Number	Unit Title	Level	Credit
MWO – UA7	Participate in Welding Quality Control and Quality Improvement	4	4
MWO – UA8	Promote Productivity Improvement in Welding Activities	4	3
MWO – UA9	Develop the Welding Team	5	3

2.2 Unit summaries

Mandatory Units

CO – UA1: Contribute to Effective Working Relationships in Engineering Construction

This unit has been designed to assess candidates in being able to establish and maintain productive working relationships, deal with disagreements in an amicable and constructive way so that good relationships are maintained. Keep others informed about work plans or activities which affect them and seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities. Respond in a timely and positive way when others ask for help or information.

CO – UA2: Work Safely and Minimise Risk in Engineering Construction

This unit has been designed to assess learner competence in being able to:

- Work safely at all times, complying with health and safety and other relevant regulations and guidelines
- Call for expert help in the event of contingencies occurring, using warning systems as appropriate
- Take prompt and appropriate action to minimise risk of personal and third party injury as a first priority and then damage to property and equipment
- Follow shutdown and evacuation procedures promptly and correctly
- Deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with organisational policy and procedures

CO – UA3: Identify and Deal with Hazards and Emergencies in the Engineering Construction Work Environment

This unit has been designed to assess learner competence in being able to:

- Work safely at all times, complying with health and safety and other relevant regulations and guidelines
- Recognise industrial processes, tools, equipment and materials that have the potential to cause harm
- Check for hazards in the workplace in line with agreed and approved procedures
- Identify any potential hazards and take appropriate action to minimise the risk from them
- Report any hazards identified and any actions taken

MWO – UA1: Identify and Assess the Hazards Arising from Welding Operations

This unit has been designed to assess learner competence in identifying hazards that are directly related to welding activities in engineering construction and engineering production.

MWO – UA2: Review an Engineering Activity to Determine Welding Requirements

This unit has been designed to assess learner competence in reviewing an engineering activity to determine welding requirements in engineering construction and engineering production.

MWO – UA3: Determine and Secure Resource Requirements to Achieve Welding Objectives

This unit has been designed to assess learner competence in being able to determine and secure resource requirements to achieve welding. The unit is about assessing and recording supply schedules and resource requirements to meet the objectives

MWO – UA4: Deploy Resources to Welding Activities

This unit has been designed to assess learner competence in being able to deploy resources to welding activities in engineering construction and engineering production. The unit is about evaluating the team's technical knowledge and skills and assigning the appropriate skill set along with the selected equipment and consumables to the welding activity.

MWO – UA5: Monitor Welding Activities

This unit has been designed to assess learner competence in monitoring welding activities. This unit is about maintaining an on-going technical and supervisory input to welding in engineering construction and engineering production.

MWO – UA6: Solve Problems in Weld Production

This unit has been designed to assess learner competence in solving welding problems. This unit is about identifying and assessing accurate information on performance problems on welding activities.

Optional Units

MWO – UA7: Participate in Welding Quality Control and Quality Improvement

This unit has been designed to assess learner competence in improving and maintaining quality in welding activities. This unit is about the control of several interactive features of the welding process and monitoring that the required controls are in place and correctly implemented in engineering construction and engineering production.

MWO – UA8: Promote Productivity Improvement in Welding Activities

This unit has been designed to assess learner competence in promoting productivity improvements in welding activities. This unit is about reviewing and evaluating team performance in pursuit of improved productivity in engineering construction and engineering production.

MWO – UA9: Develop the Welding Team

This unit has been designed to assess learner competence in developing a welding team. This unit is about developing and maintaining your own and the team's professional and technical knowledge and skills.

3. Level 4 Diploma in Managing Welding Operations

CO – UA1: Contribute to Effective Working Relationships in Engineering Construction

Title	Contribute to Effective Working Relationships in Engineering Construction
Level	2
Credit value	3
Learning outcomes	Assessment criteria
The learner will:	The learner can:
1. Establish and maintain productive working relationships.	1.1 Develop working relationships with different people in the work environment such as: those for whom they are responsible, those to whom they are responsible, clients, colleagues, other tradespersons, suppliers, security/safety personnel.
2. Deal with disagreements in an amicable and constructive way so that effective relationships are maintained.	2.1 Accept the opinions of others in relation to work activities. 2.2 Review different points of view on work related matters in a positive and constructive way in order to maintain working relationships and productivity. 2.3 Apply mediation (in accordance with the individual's responsibilities) in the event of disagreements between third parties in order to maintain productive working relationships.
3. Keep others informed about work plans or activities which affect them.	3.1 Use appropriate types of communication (formal/informal, written, verbal) to clearly relay important information to others.
4. Seek assistance from others in a polite and courteous way without causing undue disruption to normal working activities.	4.1 Approach workplace colleagues / associates in an appropriate manner and at an appropriate time, in order to seek assistance on work related issues.
5. Respond in a timely and positive way when others ask for help or information.	5.1 Prioritise requests for help and information in relation to wider work activities. 5.2 Clarify requests for help and information to identify exactly what is required. 5.3 Ensure appropriate responses are provided within agreed timescales.
6. Understand the importance of creating and maintaining working relationships.	6.1 Describe the individual's responsibilities for creating and maintaining working relationships and explain why it is important to do so.
7. Understand problems affecting relationships.	7.1 Describe different problems that can affect relationships, and the actions that can be taken to deal with specific difficulties.
8. Understand lines of communication and responsibilities.	8.1 Explain the individual's responsibilities and the responsibilities of others within the work location. 8.2 Describe the lines of communication that exist within the individual's working environment and explain the agreed procedure for passing information.

Additional information about this unit	
Unit purpose and aim(s)	<p>This unit has been designed to assess learner competence in being able to:</p> <ul style="list-style-type: none"> • Establish and maintain productive working relationships. • Deal with disagreements in an amicable and constructive way so that good relationships are maintained. • Keep others informed about work plans or activities which affect them. • Seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities. • Respond in a timely and positive way when others ask for help or information.
Unit expiry date	31/07/2015
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECITB/ECRS 11.04 (CO 1).
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction industry sites. Such methods may include discussions with candidates, the use of witness testimony and the interview of witnesses as part of the assessment process.</p> <p>Competence at level 3 has to be demonstrated with:</p> <ol style="list-style-type: none"> 1. Groups of people with which relationships should be maintained. 2. Methods of Communications. <p>The assessment guidance found in the latest version of ECITB “<i>Assessment Strategy for Craft VQs at levels 2 and 3</i>” must be followed. No mandatory workplace observation is required for Assessment Criteria.</p> <p>Further guidance on this ECITB unit can be found on the <i>Unit Specific Summary Form</i>.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system.	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <ol style="list-style-type: none"> 4. Engineering and manufacturing technologies. 5. Construction, planning and the built environment.
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2010
Unit guided learning hours.	15

CO – UA2: Work Safely and Minimise Risk in Engineering Construction

Title	Work Safely and Minimise Risk in Engineering Construction
Level	2
Credit value	4
Learning outcomes	Assessment criteria
The learner will: 1. Understand health and safety legislation, regulations and safe working practices and procedures.	The learner can: 1.1 Explain the requirements of health and safety legislation. 1.2 Explain the consequences for employers and employees of not fulfilling their legal health and safety responsibilities. 1.3 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes. 1.4 Describe reporting lines and procedures.
2. Understanding personal site safety responsibilities.	2.1 Describe how to recognise health and safety training needs, the procedure for requesting training and who to ask for help in understanding the work instructions. 2.2 Describe how to get information relating to the safe use of equipment and how to ensure the equipment is used safely. 2.3 Describe how to recognise when personal protective equipment should be used and how to select and use the correct equipment for the work to be undertaken. 2.4 Describe different types of vibration injuries and explain how they can be prevented. 2.5 Explain the importance of personal behaviour in maintaining workplace standards. 2.6 Describe the checks which are needed to make sure that portable electrical appliances are safe to use. 2.7 Describe what a safe system for electrical isolation should include and why low voltage is generally safer in relation to health and safety. 2.8 Describe the risks from over head cables and how to control them. 2.9 Describe what must be done when carrying hazardous substances in vehicles. 2.10 Describe where asbestos is likely to be found, what should be done if it is thought to have been found and how it is a risk to health.
3. Understand others site safety responsibility.	3.1 Explain who is responsible for ensuring that equipment is checked and safe to use. 3.2 Describe who is responsible and who must assess the health and safety of people working on a client's site. 3.3 Describe the legal rights and responsibilities of the appointed safety representatives and the powers of the regulatory inspectors.
4. Know first aid procedures.	4.1 Describe the first aid procedures that typically apply in the workplace. 4.2 Describe the aspects of first aid in the workplace that all personnel are expected to know.
5. Understand evacuation procedures.	5.1 Describe how to work safely in an excavation. 5.2 Explain procedures for shutdown and evacuation and state where procedures can be obtained.
6. Understand contingency reporting documentation and systems.	6.1 Describe the contingency reporting documentation and systems that are relevant to workplace activities.
7. Understand appropriate reporting lines and procedures.	7.1 Explain how to comply with the various reporting lines and procedures that apply in the working environment.

Additional information about this unit	
Unit purpose and aim(s)	<p>This unit has been designed to assess learner competence in being able to:</p> <ul style="list-style-type: none"> • Work safely at all times, complying with health and safety and other relevant regulations and guidelines • Call for expert help in the event of contingencies occurring, using warning systems as appropriate • Take prompt and appropriate action to minimise risk of personal and third party injury as a first priority and then damage to property and equipment. • Follow shutdown and evacuation procedures promptly and correctly. • Deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with organisational policy and procedures. <p>In the context of this unit, responsibility is limited to working within an overall risk control strategy which has been developed by safety specialists and which includes detailed criteria for identifying risks together with clearly defined procedures for action which must be followed. In some cases, you may be expected to refer to others for final authorisations, even though you remain responsible for identifying and implementing decisions.</p>
Unit expiry date	31/07/2015
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECITB/ECRS 10.06 (CO 2), ECITB (CO 4).
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from discussions with candidates about work-based activities on suitable engineering construction industry sites. Such methods may include discussions about product evidence and questioning.</p> <p>Competence at level 3 has to be demonstrated with:</p> <ol style="list-style-type: none"> 1. Level and extent of responsibility. 2. Types of contingencies. 3. Actions to be taken. <p>The assessment guidance found in the latest version of ECITB “<i>Assessment Strategy for Craft VQs at levels 2 and 3</i>” must be followed. No mandatory workplace observation is required for Assessment Criteria.</p> <p>Further guidance on this ECITB unit can be found on the <i>Unit Specific Summary Form</i>.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2010
Unit guided learning hours.	20

CO – UA3: Identify and Deal with Hazards and Emergencies in the Engineering Construction Work Environment

Title	Identify and Deal with Hazards and Emergencies in the Engineering Construction Work Environment
Level	3
Credit value	6
Learning outcomes	Assessment criteria
The learner will: 1. Recognise industrial processes, tools, equipment and materials that have the potential to cause harm.	The learner can: 1.1 Identify different hazardous processes, tools, equipment and materials which exist in the work environment. 1.2 Identify hazardous industrial processes associated with particular working environments.
2. Check for and identify potential hazards in the workplace in line with agreed and approved procedures.	2.1 Safely check for potential hazards in accordance with agreed and approved procedures. 2.2 Identify potential hazards in the workplace and report in accordance with approved procedures. 2.3 Minimise potential hazards using the criteria and procedures specified in the risk control strategy.
3. Take appropriate action to minimise the risk from hazards and emergencies.	3.1 Take appropriate action upon identification of a hazard or emergency. 3.2 Call for expert help using warning systems as appropriate. 3.3 Follow shut down and evacuation procedures promptly and correctly. 3.4 Deal safely with hazards and emergencies in accordance with organisational policy and procedures. 3.5 Report in accordance with the overall risk control strategy.
4. Understand health and safety legislation, regulations and safe working practices and procedures.	4.1 Explain the requirements of health and safety legislation. 4.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes. 4.3 Describe reporting lines and procedures.
5. Understand hazard spotting and safety assessment methods and techniques.	5.1 State where information on hazard spotting and safety assessment methods and techniques can be found 5.2 Describe the hazard spotting and safety assessment methods and techniques, which apply in the work location.
6. Understand types of hazards involving processes, tools, equipment and materials.	6.1 Describe common types of hazard associated with processes, tools, equipment and materials. 6.2 State what the individuals' responsibilities are in terms of dealing with and notifying others of hazards.
7. Understand effects of hazards on persons, property and the environment.	7.1 Describe the effects of hazards on persons, property and the environment.
8. Understand actions to minimise risk from hazards.	8.1 Describe the types of actions required to deal with and minimise the risks from different hazards.

Additional information about this unit	
Unit purpose and aim(s)	<p>This unit has been designed to assess learner competence in being able to:</p> <ul style="list-style-type: none"> • Work safely at all times, complying with health and safety and other relevant regulations and guidelines. • Recognise industrial processes, tools, equipment and materials that have the potential to cause harm. • Check for hazards in the workplace in line with agreed and approved procedures. • Identify any potential hazards and take appropriate action to minimise the risk from them. • Report any hazards identified and any actions taken. <p>In the context of this unit, responsibility is limited to working within an overall risk control strategy which has been developed by safety specialists and which includes detailed criteria for identifying risks together with clearly defined procedures for action which must be followed. In some cases, you may be expected to refer to others for final authorisations, even though you remain responsible for identifying and implementing decisions.</p>
Unit expiry date	31/07/2015
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECITB/ECRS 10.04 (CO 3).
Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction industry sites by discussions with candidates. Such methods may include discussions about product evidence and questioning.</p> <p>Competence at level 3 has to be demonstrated with:</p> <ol style="list-style-type: none"> 1. Level and extent of responsibility. 2. Type of hazards and risks arising. 3. Hazard checking methods to be used. 4. The type of workplace and environment 5. Type of action to be taken. <p>The assessment guidance found in the latest version of ECITB “<i>Assessment Strategy for Craft VQs at levels 2 and 3</i>” must be followed. No mandatory workplace observation is required for Assessment Criteria.</p> <p>Further guidance on this ECITB unit can be found on the <i>Unit Specific Summary Form</i>.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system.	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2010
Unit guided learning hours.	30

MWO – UA1: Identify and Assess the Hazards Arising from Welding Operations

Title	Identify and Assess the Hazards Arising from Welding Operations
Level	4
Credit value	14
Learning outcomes	Assessment criteria
The learner will: 1. Prepare work area, materials and equipment.	The learner can: 1.1 Ensure that the work environment, equipment and materials are suitable for the work activities to be undertaken. 1.2 Ensure the work area is prepared to the required standards for the engineering activity to be completed. 1.3 Ensure that arrangements are made to protect other workers from activities likely to disrupt normal working.
2. Identify and assess the hazards arising from welding operations.	2.1 Identify the types of risk arising from the materials, processes, equipment and work environment. 2.2 Obtain accurate information on factors relating to the risks. 2.3 Assess the risks using the appropriate methods. 2.4 Identify regulations and guidelines relating to the risks. 2.5 Identify the risks that arise from welding activities. 2.6 Mitigate the implications of the risks. 2.7 Record information on risks using the appropriate systems 2.8 Ensure that the safety communication about the risks is delivered to the appropriate persons. 2.9 Deal promptly and effectively with problems within your control and report those that cannot be solved.
3. Understand work area, material and equipment preparation for welding activities.	3.1 Describe work area, material and equipment preparation requirements and methods. 3.2 Explain the consequences of incorrectly preparing the work areas, materials and equipment. 3.3 Describe equipment care and control procedure.
4. Understand the terminology, techniques and practices for identifying hazards in welding operations.	4.1 Explain the types of risk that can arise from different welding processes and associated activities and how they can be mitigated 4.2 Describe how to obtain information on the risk. 4.3 Describe the types of assessment method appropriate to different situations. 4.4 Explain methods and procedures for recording and communicating the risks.

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in identifying hazards that are directly related to welding activities in engineering construction and engineering production.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS09
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. However mandatory workplace observation is required for Assessment Criteria 2.8.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	120

MWO – UA2: Review an Engineering Activity to Determine Welding Requirements

Title	Review an Engineering Activity to Determine Welding Requirements
Level	4
Credit value	18
Learning outcomes	Assessment criteria
<p>The learner will:</p> <p>1. Review an engineering activity to determine welding requirements.</p>	<p>The learner can:</p> <p>1.1 Obtain current, accurate and relevant information on the engineering activity. 1.2 Evaluate the welding requirement for the engineering activity. 1.3 Make recommendations for the welding process selection. 1.4 Obtain and interpret the appropriate welding procedure specifications. 1.5 Establish the specified acceptance criteria for the welding activity. 1.6 Consult with welding specialists when required. 1.7 Feedback any suggestions to improve the welding activity. 1.8 Complete welding specific quality documentation. 1.9 Deal promptly and effectively with problems and report those that cannot be solved.</p>
<p>2. Understand the terminology, techniques and practices for reviewing an engineering activity to determine welding requirements.</p>	<p>2.1 Explain the purpose and uses of specifications and welding procedures. 2.2 Describe the characteristics and limitations of different welding processes. 2.3 Explain how to make recommendations for the welding process selection. 2.4 Describe symbols and conventions used for welding information. 2.5 Describe test procedures for detection of defects in weldments. 2.6 Explain organisational quality systems. 2.7 Explain reporting documentation and control procedures.</p>

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in reviewing an engineering activity to determine welding requirements in engineering construction and engineering production.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS01, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. No mandatory workplace observation is required.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	160

MWO – UA3: Determine and Secure Resource Requirements to Achieve Welding Objectives

Title	Determine and Secure Resource Requirements to Achieve Welding Objectives
Level	5
Credit value	9
Learning outcomes	Assessment criteria
<p>The learner will:</p> <p>1. Determine and secure welding resource requirements.</p>	<p>The learner can:</p> <p>1.1 Identify any constraints relevant to the welding activities. 1.2 Establish required welder skills and qualifications. 1.3 Calculate the quantity of resources required to complete the welding objectives. 1.4 Ascertain and secure required welding equipment and consumables. 1.5 Confirm availability of all required services and that they are compatible with selected equipment. 1.6 Specify supply schedules to ensure availability or procurement of required items to meet work requirements. 1.7 Deal promptly and effectively with problems and report those that cannot be solved.</p>
<p>2. Understand the tools, terminology, techniques and practices for determining and securing resource requirements to achieve welding objectives.</p>	<p>2.1 Explain the purpose and uses of information that is required for the welding activity. 2.2 Describe the characteristics and application of different welding processes. 2.3 Explain material types and fabrication behaviour. 2.4 Explain weld joint preparations and configurations. 2.5 Explain welder skills and qualifications. 2.6 Explain organisational procurement procedures.</p>

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in being able to determine and secure resource requirements to achieve welding. The unit is about assessing and recording supply schedules and resource requirements to meet the objectives. In the context of this unit, responsibility is limited to working within detailed specifications and following clearly defined procedures in the form of method statements. In some cases, you may still be expected to refer to others for final authorisation, even though you remain responsible for identifying and implementing decisions.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS02, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. No mandatory workplace observation is required.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	80

MWO – UA4: Deploy Resources to Welding Activities

Title	Deploy Resources to Welding Activities
Level	5
Credit value	5
Learning outcomes	Assessment criteria
<p>The learner will:</p> <p>1. Deploy resources to welding activities.</p>	<p>The learner can:</p> <p>1.1 Evaluate all welder skills and deploy appropriate skills set to welding activities.</p> <p>1.2 Ensure that welding procedure specifications are correctly approved and comply with relevant regulations and standards</p> <p>1.3 Distribute the necessary welding procedure specifications and other documentation to relevant people.</p> <p>1.4 Specify and communicate the factors for a successful welding activity.</p> <p>1.5 Establish that the assigned consumables conform to the requirements.</p> <p>1.6 Deal promptly and effectively with problems and report those that cannot be solved.</p>
<p>2. Understand the tools, terminology, techniques and practices for deploying resources to welding activities.</p>	<p>2.1 Explain the purpose and uses of information that is required for the welding activity.</p> <p>2.2 Explain welding procedure specifications structure and content.</p> <p>2.3 Describe welder skills and qualifications.</p> <p>2.4 Explain different methods of communication.</p>

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in being able to deploy resources to welding activities in engineering construction and engineering production. The unit is about evaluating the team's technical knowledge and skills and assigning the appropriate skill set along with the selected equipment and consumables to the welding activity.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS 03, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. No mandatory workplace observation is required.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	40

MWO – UA5: Monitor Welding Activities

Title	Monitor Welding Activities
Level	5
Credit value	6
Learning outcomes	Assessment criteria
The learner will: 1. Work safely and minimise risk at all times.	The learner can: 1.1 Identify hazards specific to welding. 1.2 Take appropriate action to minimise the risk from hazards. 1.3 Refer safety related matters to appropriate persons as required. 1.4 Ensure work is completed in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations. 1.5 Ensure work is completed in accordance with the requirements of risk assessments and permit to work systems.
2. Ensure the work area, materials and equipment are prepared to ensure safe and effective working.	2.1 Ensure that the work environment, equipment and materials are suitable for the work activities to be undertaken. 2.2 Ensure the work area is prepared to the required standards for the engineering activity to be completed. 2.3 Ensure that arrangements are made to protect workers from activities likely to cause hazards.
3. Monitor welding activities	3.1 Ensure that the specified resources, quality control methods and procedures are implemented correctly. 3.2 Inspect the weld preparation for conformity to specification. 3.3 Ensure the welding operative is suitably qualified to complete the work activity. 3.4 Monitor the welding activity in accordance with procedures. 3.5 Confirm that the welding procedure specification and method of application are being correctly applied. 3.6 Identify any variations which affect welding activities. 3.7 Post-inspect the weld to determine whether the weld conforms to specification. 3.8 Record monitoring in the appropriate system. 3.9 Deal promptly and effectively with problems and report those that cannot be solved.
4. Ensure the work area, materials and equipment are reinstated upon completion of the activity.	4.1 Ensure the correct disposal of waste materials. 4.2 Ensure correct storage of re-usable materials and equipment in accordance with appropriate procedures 4.3 Ensure all necessary documentation is completed in line with organisational procedures.
5. Understand work area, material and equipment preparation and reinstatement requirements for welding activities.	5.1 Describe work area, material and equipment preparation and reinstatement requirements and methods. 5.2 Explain the consequences of incorrectly preparing or reinstating the work areas, materials and equipment. 5.3 Describe the types of equipment used and explain the care and control procedure.
6. Understand the terminology, techniques and practices for monitoring welding activities.	6.1 Explain welding procedure specifications structure and content. 6.2 Explain welding problems. 6.3 Explain material types and properties. 6.4 Explain welding heat treatments. 6.5 Describe symbols and conventions used for welding information. 6.6 Describe Non Destructive Test procedures for detection of defects in weldments. 6.7 Describe reporting lines and procedures.

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in monitoring welding activities. This unit is about maintaining an on-going technical and supervisory input to welding in engineering construction and engineering production. You will monitor the performance of all aspects of welding activities to check that requirements are being met. Where variances are revealed, you will identify and record the nature of the problems involved requiring remedial action.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS 04, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. However mandatory workplace observation is required for Assessment Criteria 3.2 and 3.4.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	40

MWO – UA6: Solve Problems in Weld Production

Title	Solve Problems in Weld Production
Level	4
Credit value	10
Learning outcomes	Assessment criteria
The learner will: 1. Work safely and minimise risk at all times.	The learner can: 1.1 Identify hazards specific to welding. 1.2 Take appropriate action to minimise the risk from hazards. 1.3 Refer safety related matters to appropriate persons as required. 1.4 Ensure work is completed in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations. 1.5 Ensure work is completed in accordance with the requirements of risk assessments and permit to work systems.
2. Ensure the work area, materials and equipment are prepared to ensure safe and effective working.	2.1 Ensure that the work environment, equipment and materials are suitable for the work activities to be undertaken. 2.2 Ensure the work area is prepared to the required standards for the engineering activity to be completed. 2.3 Ensure that arrangements are made to protect workers from activities likely to cause hazards.
3. Solve problems in weld production	3.1 Ensure that problems in weld production are identified and made known to appropriate people. 3.2 Obtain all relevant information relating to the welding problem. 3.3 Identify principal cause of welding problem. 3.4 Suggest the most effective solution to the welding problem. 3.5 Ensure that the specified solution is correctly implemented and monitored within the appropriate quality system. 3.6 Deal promptly and effectively with problems and report those that cannot be solved.
4. Ensure the work area, materials and equipment are reinstated upon completion of the activity.	4.1 Ensure the correct disposal of waste materials. 4.2 Ensure correct storage of re-usable materials and equipment in accordance with appropriate procedures 4.3 Ensure all necessary documentation is completed in line with organisational procedures.
5. Understand work area, material and equipment preparation and reinstatement requirements for welding activities.	5.1 Describe work area, material and equipment preparation and reinstatement requirements and methods. 5.2 Explain the consequences of incorrectly preparing or reinstating the work areas, materials and equipment. 5.3 Describe the types of equipment used and explain the care and control procedure.
6. Understand the tools, terminology, techniques and practices for solving problems in weld production.	6.1 Explain the purpose and use of relevant drawings and specifications 6.2 Explain organisational quality systems. 6.3 Explain material properties. 6.4 Explain the effect of the welding activity on the material. 6.5 Describe Non Destructive Test procedures for detection of defects in weldments. 6.6 Explain weld defects and their causes. 6.7 Explain when to refer to the nominated welding specialist/authority. 6.8 Explain ways of determining the best solution for the problem 6.9 Explain procedures for repair implementation. 6.10 Describe disciplinary processes. 6.11 Explain customer requirements.

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in solving welding problems. This unit is about identifying and assessing accurate information on performance problems on welding activities. It covers the welding technology and supervisory support you will provide in dealing with welding related problems that arise in weld production, often revealed as a result of monitoring activities in engineering construction and engineering production.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS 05
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. No mandatory workplace observation is required.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	80

MWO – UA7: Participate in Welding Quality Control and Quality Improvement

Title	Participate in Welding Quality Control and Quality Improvement
Level	4
Credit value	4
Learning outcomes	Assessment criteria
<p>The learner will:</p> <ol style="list-style-type: none"> 1. Participate in welding quality control and quality improvement. 	<p>The learner can:</p> <ol style="list-style-type: none"> 1.1 Deliver accuracy and attention to detail and work to current quality standards. 1.2 Obtain current, accurate information on the products being quality assured. 1.3 Ensure that the specified quality assurance methods and procedures are identified and implemented. 1.4 Ensure compliance and control of welding support services. 1.5 Record and analyse welder repair rates and rate of NDT coverage. 1.6 Maintain a quality system for materials. 1.7 Ensure that the team is suitably qualified. 1.8 Consult with quality specialists when required. 1.9 Recommend improvements to quality to the appropriate people. 1.10 Deal promptly and effectively with problems within your control and report those that cannot be solved.
<ol style="list-style-type: none"> 2. Understand the terminology, techniques and practices for participating in welding quality control and quality improvement. 	<ol style="list-style-type: none"> 2.1 Explain welding parameters required for quality recording. 2.2 Explain effective ways of monitoring the progress and quality of work of team members against the standards or level of expected performance. 2.3 Describe obstacles to quality improvement and how they can be removed. 2.4 Explain relevant quality standards and organisational systems. 2.5 Describe Quality document systems.

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in improving and maintaining quality in welding activities. This unit is about the control of several interactive features of the welding process and you will be responsible for monitoring that the required controls are in place and correctly implemented in engineering construction and engineering production.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS 06, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. No mandatory workplace observation is required.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from	01/08/2013
Unit guided learning hours.	28

MWO – UA8: Promote Productivity Improvement in Welding Activities

Title	Promote Productivity Improvement in Welding Activities
Level	4
Credit value	3
Learning outcomes	Assessment criteria
<p>The learner will:</p> <p>1. Promote productivity improvement in welding activities.</p>	<p>The learner can:</p> <p>1.1 Set clear performance expectations. 1.2 Review methods and technology as potential solutions to existing productivity improvement barriers. 1.3 Maintain records relating to the welding activity. 1.4 Monitor the supply and use of skills, equipment and consumables to ensure they are being effectively used 1.5 Maintain productivity by forward planning, estimating and procurement of required or depleted resources. 1.6 Ensure the welding schedule is being maintained. 1.7 Feedback on suitability of drawings, information and data. 1.8 Enable suggestions and contributions to be made for the improvement of quality and productivity. 1.9 Observe performance and give feedback and other forms of guidance. 1.10 Recognise and address under-performance. 1.11 Specify and communicate the factors that achieved a successful outcome. 1.12 Consult with planning and commercial specialists as required. 1.13 Capture and report any lessons learnt to the appropriate personnel. 1.14 Deal promptly and effectively with problems within your control and report those that cannot be solved.</p>
<p>2. Understand the terminology, techniques and practices for promoting productivity improvement in welding activities.</p>	<p>2.1 Explain how to set work objectives. 2.2 Describe ways of optimising the team's abilities to maximise potential. 2.3 Explain repair rate analysis. 2.4 Explain how to identify and prioritise critical activities, to maximise the use of available resources. 2.5 Explain how to deal with under-performance of team members and agree ways of improving performance. 2.6 Explain how to review and update plans of work in response to developments and how to reallocate work and resources. 2.7 Explain principles, processes, tools and techniques involved in planning, procurement and cost control.</p>

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in promoting productivity improvements in welding activities This unit is about reviewing and evaluating team performance in pursuit of improved productivity in engineering construction and engineering production.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS 07, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. However mandatory workplace observation is required for Assessment Criteria 1.9 and 1.11.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area</p> <p>4.1 Engineering.</p> <p>Sector/subject areas</p> <p>4. Engineering and manufacturing technologies.</p> <p>5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	25

MWO – UA9: Develop the Welding Team

Title	Develop the Welding Team
Level	5
Credit value	3
Learning outcomes	Assessment criteria
<p>The learner will:</p> <p>1. Develop the welding team.</p>	<p>The learner can:</p> <p>1.1 Maintain confidentiality and discretion with individuals. 1.2 Develop and maintain technical skills and knowledge of own field. 1.3 Evaluate and record team competencies. 1.4 Give praise and recognition and use praise to improve performance. 1.5 Consult regularly with individuals and receive feedback. 1.6 Delegate work effectively. 1.7 Provide development opportunities. 1.8 Organise and deliver training if required. 1.9 Deal promptly and effectively with problems within your control and report those that cannot be solved.</p>
<p>2. Understand the terminology, techniques and practices for developing the welding team.</p>	<p>2.1 Explain how to maintain continuous professional development (CPD). 2.2 Explain how to receive and make effective use of feedback on your performance and the performance of others. 2.3 Explain how to select and successfully apply different methods of communication. 2.4 Describe team attributes. 2.5 Explain how to recognise the achievements and the success of team members. 2.6 Explain effective delegation. 2.7 Explain training and coaching techniques. 2.8 Explain competence frameworks and training development routes. 2.9 Describe your organisation's appraisal and selection systems. 2.10 Describe provision of information and evidence for formal assessment and competence processes.</p>

LEVEL 4 DIPLOMA IN MANAGING WELDING OPERATIONS

Additional information about this unit	
Unit purpose and aim(s)	This unit has been designed to assess learner competence in developing a welding team. This unit is about developing and maintaining your own and the team's professional and technical knowledge and skills. You will achieve this by providing development opportunities to meet the current and future challenges of engineering construction and engineering production.
Unit expiry date	30/06/2018
Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate).	Derived from ECIWS 08, CFAM&LBA3
Assessment requirements or guidance specified by a sector regulatory body (if appropriate).	<p>Assessment of this unit will be by occupationally competent assessors approved by an awarding body. They will gather sufficient evidence of competence from work-based activities on suitable engineering construction sites.</p> <p>The assessment guidance found in the latest version of ECITB" Assessment Strategy for Craft, Technician and Supervisor VQs at levels 2, 3 and 4" must be followed. However mandatory workplace observation is required for Assessment Criteria 1.5.</p> <p>Further guidance on this ECITB unit can be found on the Unit Specific Summary Form.</p>
Support for the unit from a SSC or other appropriate body (if required).	ECITB
Location of the unit within the subject/sector classification system	<p>Second-tier sector/subject area 4.1 Engineering.</p> <p>Sector/subject areas 4. Engineering and manufacturing technologies. 5. Construction, planning and the built environment.</p>
Name of the organisation submitting the unit.	ECITB
Availability for use	Shared
Unit available from.	01/08/2013
Unit guided learning hours.	25



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