ENERGY & ENVIRONMENT AWARDS

Skills for a greener world

Qualification Specification

EEA Level 1 Certificate in Network Construction Operations (Water)
610/6066/5

EEA Level 1 Certificate in Network Construction Operations (Gas)
610/6455/5

October 2025 v1

Contents

Updates to this Specification

Since the first publication of this Qualification Specification, the following updates have been made.

1 Qualification Overview

At a Glance Qualification Summary

Qualification Titles / Min. Guided Learning Hours (GLH) and Total Qualification Time (TQT) / Credit Value	Level 1 Certificate in Network Construction Operations (Water) **98 GLH 155 TQT 16 Credits** Level 1 Certificate in Network Construction Operations (Gas) **105 GLH 155 TQT 16 Credits** **Important note re GLH and TQT: The design of the Energy & Environment Awards qualifications and the component units are designed to enable the transferability of units across qualifications within the Level 1 Certificate in Network Construction Operations suite. Once a learner has achieved a component unit in one of the qualifications they are exempt from completing that unit again, within a second qualification.*
RQF Level	1
Entry requirements	Learners must be 16 years of age or above.
Assessment requirements	These qualifications are assessed by:- • Externally set and marked multiple choice question papers • Externally set, internally marked, externally quality assured observation
Progression opportunities	Learners are able to progress from the Level 1 qualifications to the ***Level 2 Diploma in Network Construction Operations*** qualifications.
Regulatory Body / Status	These qualifications are regulated by Ofqual, the independent qualifications regulator for England.
Nation	These qualifications are for delivery in England.

Energy & Environment Awards

Energy & Environment Awards is an Ofqual recognised Awarding Organisation, offering qualifications, including End-point Assessments within the energy and utilities footprint.

Introduction

Energy & Environment Awards has secured recognition from Ofqual, the independent qualifications regulator for England, to offer the:-

- Level 1 Certificate in Network Construction Operations (Water)
- Level 1 Certificate in Network Construction Operations (Gas)

These qualifications have been developed through consultation with key external stakeholders, including Employers, Training Providers and technical experts.

This Qualification Specification provides guidance for approved Centres on how to consistently apply the assessment and associated quality assurance requirements, along with unit content and relevant additional information to support the delivery of these qualifications.

Aims and Objectives of the Qualifications

Level 1 Certificate in Network Construction Operations (Water)

Level 1 Certificate in Network Construction Operations (Gas)

The purpose of these qualifications are to introduce learners to the technical skills and underpinning knowledge in all aspects of Gas or Water Network Construction Operations.

These qualifications are suitable for individuals who are employed in network construction as an operative or assistant in either Gas or Water and are aged 16 or above. These qualifications contain the underpinning knowledge and skills that are required to deem a learner competent to work under supervision on either Gas or Water network constructions. These qualifications have been designed and developed in accordance with legislative and industry requirements for both the Water and Gas industries.

The qualification structures have been designed through consultation with Employers, Training Providers and technical experts to reduce the need for learners to repeat core content and instead provides learners with the opportunity to transfer some common, core units across qualifications. For example, if a learner completes the Water qualification with Energy & Environment Awards and goes onto complete the Gas qualification, the mandatory units they have already completed will also count towards their second qualification. Similarly, the units themselves have been designed to reduce duplication of content and learning across units.

Qualification Design and GLH

The "*Principles of Health and Safety in Network Construction Operations"* unit is the same unit which is used in the Energy & Environment Awards Level 2 Network Construction Operations suite. If a learner progresses from the Level 1 qualification to the Level 2 qualification they will be able to transfer this unit achievement and will be exempt from completing the unit again.

The design feature of the qualifications also means that sometimes there are learning outcomes and/or assessment criteria which are duplicated within a single qualification. It is our expectation that Energy & Environment Awards approved centres will design their training programmes to ensure there is no duplication of learning for individual learners. The Guided Learning Hours (GLH) and Total Qualification Time (TQT) for each unit and qualification are therefore indicative and are subject to change based on the centre tailoring their training according to the requirements of each learner / cohort of learners. It is, however, expected that each learner completes all associated assessments for the unit(s) unless they are exempt from completing the unit (due to prior achievement).

2 Qualification Information

Qualification Delivery

Training Venue and Equipment Requirements

The practical assessments must be carried out either on a 'live' working site or in a realistic working environment appropriate to each task, taking specific care to protect the health and safety of the candidate, the assessor and others in the area.

Equipment, materials and consumables provided must be sufficient and suitable for each task. Equipment must be in a safe and 'fit for use' condition.

Unit Achievements

As you will see from the qualification structures in the section that follows all of the units in Group A are mandatory units which are common to both Gas and Water NCO qualifications. Also the optional units in Group D are common to both qualifications. Once the learner has achieved these units with Energy & Environment Awards they do not need to complete them again if they decide to move on to complete the other specialism a with Energy & Environment Awards, instead they can be exempt from having to achieve the units a second time.

Recognition of Prior Learning

Energy & Environment Awards has a comprehensive Recognition of Prior Learning (RPL) and Recognition of Prior Achievement (RPA) Policy, which all approved Centres have access to and is available at https://energyenvironmentawards.co.uk/policies-and-fees/. This policy sets out our approach to the Recognition of Prior Learning (RPL) and Recognition of Prior Achievement (RPA), providing guidance on what constitutes acceptable evidence and the circumstances when RPL or RPA would, and would not be acceptable, in order to for us to meet our Regulatory requirements.

Recognition of Prior Learning applies to the acceptance of evidence that the learner has completed learning which may exempt them from certain elements of training but it will not exempt them from the assessment(s). This may, for example, apply to experienced workers who do not require as much training as new entrants to the role / sector.

Learners are also able to be registered on, and achieve, individual units where appropriate instead of completing the full qualification.

Qualification Structures

Level 1 Certificate in Network Construction Operations (Water / Gas)

In order to achieve the **Level 1 Certificate in Network Construction Operations (Water)** qualification, learners must complete all mandatory units in Group A and the mandatory unit in Group B. Learners must select one unit from Group D as a minimum.

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In order to achieve the **Level 1 Certificate in Network Construction Operations (Gas)** qualification, learners must complete all mandatory units in Group A and all the mandatory units in Group C. Learners must select one unit from Group D as a minimum.

Group A: Mandatory Units		
Level:	**Unit Title:**	**Assessment Methodology:**
1	Assist in locating and avoiding supply apparatus and sub structures	• Practical observation • MCQ Knowledge Test (combined assessment*)
1	Working under supervision, excavate holes and trenches	• Practical observation • MCQ Knowledge Test (combined assessment*)
1	Working under supervision, contribute to an efficient and effective work environment for network operations	• Practical observation • MCQ Knowledge Test
2	Principles of Health and Safety in Network Construction Operations	• MCQ Knowledge Test
1	Working under supervision, operate powered tools and equipment for network construction operations	• Practical observation • MCQ Knowledge Test
1	Working under supervision, join polyethylene pipe by electrofusion	• Practical observation • MCQ Knowledge Test (combined assessment*)

1	Working under supervision, join polyethylene pipe by butt fusion	• Practical observation • MCQ Knowledge Test (combined assessment*)

Group B: Mandatory Units for Water Qualification		
Level	**Unit Title:**	**Assessment Methodology:**
1	Working under supervision, assemble components to meet specifications for water network construction operations	• Practical observation • MCQ Knowledge Test

Group C: Mandatory Units for Gas Qualification		
Level	**Unit Title:**	**Assessment Methodology:**
1	Working under supervision, assemble components to meet specifications for gas network construction operations	• Practical observation • MCQ Knowledge Test

Group D: Optional Units for Water and Gas Qualifications		
All learners must select one unit from the following group (minimum)		
Level	**Unit Title:**	**Assessment Methodology:**
1	Assist in preparing resources and signing, lighting and guarding the area for highway works	• Practical observation • MCQ Knowledge Test
1	Assist in preparing resources for protecting work sites	• Practical observation • MCQ Knowledge Test

**Combined assessments*

Where combined assessments have been highlighted above these are MCQ Knowledge Tests where the knowledge requirements from two units have been combined into one assessment. This is to reduce over assessment of duplicate

assessment criteria across the units and to reduce the number of MCQ tests which a learners are required to complete.

Further details of the combined assessments can be found in the next section.

Combined MCQ Assessments

In the table below are the details of the combined MCQ assessments which have been created and the units which have been merged together.

Combined MCQ Assessment Title	**Cover the knowledge requirements from the following units**
Assist in locating and avoiding supply apparatus and sub structures and Excavate Holes and Trenches	• Assist in locating and avoiding supply apparatus and sub structures • Working under supervision, excavate holes and trenches
Working under supervision, join polyethylene pipe by butt fusion and electrofusion	• Working under supervision, join polyethylene pipe by electrofusion • Working under supervision, join polyethylene pipe by butt fusion

3 Assessment

Trainers, Assessors and IQAs

Centres must comply with both the qualification and sector experience requirements for Trainers, Assessors and IQAs, as outlined in the Practical Observation section of this qualification specification.

Assessors are responsible for marking and recording assessment decisions on the practical observation. Internal Quality Assurers (IQAs) are responsible for sampling learners' assessment decisions and documentation and observing assessment discussions between the Assessor and the learner according to the Centre's internal quality assurance sampling approach, which will have been approved by Energy & Environment Awards as meeting the quality assurance requirements for these qualifications. IQAs are also required to verify the Trainer's competence to deliver the Level 1 Network Construction Operations qualifications as part of their monitoring activities.

Centres are responsible for maintaining up-to-date information on Trainers, Assessors and IQAs and for ensuring the currency of the competence of all those involved in assessment and quality assurance.

Further information, advice and guidance relating to the Energy & Environment Awards expectations on Centres in delivering the qualifications and associated assessments is detailed in the sections which follow.

Overview of Assessment Methods

The assessment methods for these qualifications have been outlined in the previous section.

Assessment may take place at any time during the delivery of the qualification and does not need to be done as a final assessment. It is, however, a requirement for the learner to be aware that the assessment is taking place. However, Centres are required to schedule the online multiple-choice test(s) for individual learners at the point when they feel they are ready to complete the test.

Full details of the requirements, duration and pass mark for each assessment instrument are shown in the sections which follow.

Assessment Method: Multiple-Choice Question Test

Assessment Structure

Each Multiple Choice Question (MCQ) test paper is closed book and learners are required to complete the test in exam conditions. Details of each of the unit's MCQ tests are shown in the table below:

Unit title:	Number of Questions in MCQ Test:	Max. time allowed (minutes):	Pass mark:
Assist in locating and avoiding supply apparatus and sub structures and Excavate Holes and Trenches (combined assessment)	31	50	21 out of 31 (67%)
Working under supervision, contribute to an efficient and effective work environment for network operations	23	35	16 out of 23 (69%)
Principles of Health and Safety in Network Construction Operations	23	35	16 out of 23 (69%)
Working under supervision, operate powered tools and equipment for network construction operations	17	30	12 out of 17 (70%)
Working under supervision, join polyethylene pipe by butt fusion and electrofusion	21	35	14 out of 21 (66%)
Working under supervision, assemble components to meet specifications for water network construction operations	12	20	8 out of 12 (66%)
Working under supervision, assemble components to meet specifications for gas network construction operations	12	20	8 out of 12 (66%)
Assist in preparing resources and signing, lighting and guarding the area for highway works	24	40	16 out of 24 (66%)
Assist in preparing resources for protecting work sites	15	25	10 out of 15 (66%)

The multiple-choice questions have been written to assess the learner's knowledge and understanding as outlined in the assessment criteria within each unit. Each question will have four possible answers with one of those answers being the correct one.

Practice assessment

Learners are able to complete a practice assessment through the Energy & Environment Awards online assessment system, XAMS, prior to completing the live assessment. This will enable the learner to practice using the assessment platform but will mainly help them to identify whether they are ready to complete the live assessment.

The practice assessment mirrors the requirements of the live multiple choice assessment in terms of duration, number of questions, types of questions asked and pass mark. Centres will be able to register a learner directly onto the practice assessment on XAMS and access their result and an assessment criteria report. The result for the practice assessment will not be passed back to the learner's record on QuartzWeb.

Online assessment

The MCQ test is externally set by Energy & Environment Awards and is hosted by Energy & Environment Awards' online assessment system for Qualifications, XAMS, and automatically marked on this system, enabling instant results for the Centre. Centres will also be able to download a Performance Feedback Report which shows which assessment criteria have or have not been achieved by the learner.

Should the need arise for a Centre to apply for a reasonable adjustment to be made to the MCQ test for a learner, then the Centre must make this application at the point of registering a new learner onto the relevant Certificate in QuartzWeb. An example of a reasonable adjustment includes a reader being required for the learner completing the MCQ test. Sufficient time needs to be given to allow for adjustments to be made, should the application be successful. Therefore, Energy & Environment Awards require a minimum period of ten working days between registering a learner for the Certificate and the assessment taking place.

Centres are required to register learners for the respective qualification on QuartzWeb, Energy & Environment Awards' qualification administration system, which will automatically register them onto the Energy & Environment Awards XAMS platform for each corresponding assessment. Centres will schedule when they would like the learner to complete the MCQ test in XAMS and at this point will be asked to confirm who is in place to invigilate the test. It is important to note that Centre staff who have been involved in delivering the training for the learner(s) cannot invigilate the MCQ test. Further information is provided in the Energy & Environment Awards Invigilator Guidance document.

Examination Conditions

Each MCQ test will be conducted in full examination conditions, with no additional notes, handouts or personal electronic devices permitted.

Centres have a responsibility to ensure learners are familiar with, and able to use, the online test platform prior to their MCQ test and have the relevant IT equipment and reliable internet access in order to complete the test. Should the learner lose connection or their assessment is disrupted for any reason then the invigilator will make a decision as to whether the assessment can continue or whether examination conditions were disrupted and require the assessment to be abandoned or whether the disruption has affected the learner's performance significantly. Invigilators are required to report any incidents that occur during the MCQ test to the Centre directly and for the Centre to maintain records for quality assurance purposes where issues arise. Similarly, in these situations, Centres will need to decide whether it is appropriate to make an application to Energy & Environment Awards for a special consideration, whether a new test can be scheduled or whether a further period of training is required.

As part of each Centre's approval with Energy & Environment Awards to offer the Level 1 Network Construction Operations qualifications, Centres are required to provide evidence of their documented control systems for a range of processes. These are listed in full in the ***Energy & Environment Awards Centre Approval Guidance*** and associated requirements for the delivery of the Level 1 Network Construction Operations qualifications listed in the relevant Appendix. The following, however, are required to specifically support the delivery of the MCQ test:

- Invigilation procedure

- Examination procedures, including preparation before the examination takes place, conducting the examination and post examination procedure
- Learner's proof of identity
- Location of examination centres
- Ensuring security and confidentiality of assessment materials
- Malpractice and maladministration procedure

Grading

Learners will either pass or fail this assessment.

In order to pass, learners must correctly meet the required pass mark as outlined in the table on pages 13 and 14.

Assessments are automatically marked on XAMS which enables Centres to have immediate access to results. Centres will also be able to download a Performance Feedback Report which shows which assessment criteria have or have not been achieved by the learner.

Resits

Where a learner fails the MCQ test, they are entitled to one resit with Energy & Environment Awards, at the discretion of the training provider. Following this resit a learner will be required to undertake a period of further training before being required to register again for the qualification with Energy & Environment Awards.

Where time allows, and where there is no requirement for a reasonable adjustment, a learner may re-sit the MCQ test as soon as is practicable.

Assessment Method 2: Practical Observation

Assessment Design

As cited in the **Overview of Assessment Methods** section of this Qualification Specification there are some units, which are assessed by a practical observation as well as the multiple choice test outlined above.

The practical observation requires careful planning and preparation to ensure the assessment is a valid and reliable assessment of the learner's skills in relation to each of the skills-based assessment criteria within the specific unit.

This assessment is centre-devised and assessors should be mindful in ensuring there is opportunity to observe all required assessment criteria as part of the observation.

Assessors

In order to assess this qualification, assessors must have relevant occupational competence and hold, or be working towards, one of the recognised Assessor qualifications, e.g.:

- Level 3 Award in Assessing Competence in the Work Environment
- Level 3 Certificate in Assessing Vocational Achievement
- Assessing Candidates Using a Range of Methods (A1)
- D32 or D33 – Assess Candidate Performance / Assess Candidate Performance Using Diverse Evidence.

Further information regarding the Energy & Environment Awards requirements for Centre Delivery staff, including Assessors is found in the ***Energy & Environment Awards Centre Approval Guidance*** document.

Assessment Preparation

Assessors will need to prepare fully for delivering the practical observation assessment. In addition to this, Centres must ensure that:

1. ***The Assessor acts independently from the training that has been delivered*** – the assessor may be the same individual who has delivered the training but it is essential that no coaching or guidance is given during the practical assessment. Energy & Environment Awards expects that the assessor does not ask any questions but may speak in order to stop the assessment in the case of a medical episode, an accident or emergency or unsafe practice.
2. ***Resource and site requirements are met*** – the training venue and equipment requirements are referenced in Section 3 of this document. These equipment requirements must be in place for both the training and the assessment process.

The assessor is also responsible for ensuring the equipment is fit for purpose prior to use.

1. ***Assessor is prepared*** – has access to, and is familiar with, all recording form documentation before the assessment starts, including any learner-specific requirements such as any approved reasonable adjustments. Learners must be registered with Energy & Environment Awards for the relevant qualification prior to the assessment taking place.
3. ***Live on site observation / Realistic Working Environment*** – the practical observation should be undertaken in a live work site (unless this is not appropriate to the work activity being assessed and the unit allows for realistic working environment). It is important to note that where realistic work environments (RWE) are utilised these will need to be approved by Energy & Environment Awards prior to the assessment taking place, usually at Centre approval

Assessment requirements

There is no minimum or maximum time required to complete the practical observation but it is the Centre's responsibility to ensure adequate time is allowed to provide sufficient opportunity for each learner to demonstrate all the assessment criteria required in each observation. Assessors should use the Energy & Environment Awards ***Practical Observation Recording Form*** for each respective unit's practical observation. The recording documentation will be checked and verified by the Centre's IQA and the Energy & Environment Awards EQA.

Delivering the assessment

Learners are assessed independently and as such there must be no collusion between learners or with their trainer and/or assessor, which may be the same person. Assessors will make their assessment decision based on the evidence seen during the observation relating to each of the assessment criteria outlined in the ***Energy & Environment Awards Practical Observation Recording Form*** for the unit being assessed, on an individual basis. Assessors must not lead, coach or guide learners during the practical assessment.

Grading

At the end of the assessment the assessor will aggregate the results for each assessment criteria and grade the learner as either:-

- Pass
- Fail

This information is entered into the individual learner's ***Energy & Environment Awards Practical Observation Form*** by the assessor, along with all other information required in the form. It is essential that the learner and assessor both sign and date the form when the assessment is complete, the learner is deemed competent and the grade has been confirmed by the Centre's IQA. This form, along with any additional evidence will be uploaded to QuartzWeb by the Centre against each learner's record.

Where the learner has not achieved a pass in the first practical observation they should be given further attempt(s) to demonstrate the assessment criteria they have not achieved in their first attempt of the assessment. There is no limit on the number of re-takes for the practical observation, however this may be dependent on time available and the duration of the Centre's course.

Where the learner has achieved a Pass the assessor records this on the assessment recording form and uploads to QuartzWeb. On QuartzWeb the Centre will record the assessment decision as "Achieved".

Internal Quality Assurance

The Centre's IQA will sample learners' assessment documentation and observe live assessments according to the Centre's internal quality assurance sampling approach, which will have been approved by Energy & Environment Awards as meeting the quality assurance requirements for this qualification.

As with Assessors, the expectation is that the Centre's IQA will have relevant occupational competence and hold, or be working towards, one of the recognised IQA qualifications, e.g.:

- Level 4 Award in the Internal Quality Assurance of Assessment Process and Practice

- Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice

Further information regarding the Energy & Environment Awards requirements for Centre Delivery staff, including Assessors is found in the ***Energy & Environment Awards Centre Approval Guidance*** document.

IQAs will keep records of the assessments which are sampled in line with their internal quality assurance policy and process. These reports provide essential evidence for the Energy & Environment Awards EQA for determining whether the learners are being assessed in line with the Energy & Environment Awards requirements and the Centre's own Quality Assurance policies and procedures.

IQAs are also required to ensure consistency across the Centre's assessors through monitoring assessment decisions, holding regular standardisation meetings and ensuring the Energy & Environment Awards requirements are being implemented appropriately. IQAs are also involved in the escalation and/or investigation of any issues or queries or potential malpractice relating to the assessment, grading decisions and the assessor's occupational competence.

External Quality Assurance

Energy & Environment Awards externally quality assures through appointing each Centre an EQA, who is responsible for checking and monitoring the assessment and quality assurance practices within the Centre to ensure assessments are conducted and quality assured in a robust, consistent manner, in line with Energy & Environment Awards requirements. The EQA does this through:-

- Approving Centres according to our qualification-specific Centre Approval Criteria and carrying out a visit as part of this approval, where required.
- Determining the sampling approach and frequency of visits for each Centre, according to their risk, volume of learners and history as an approved Centre.
- Observing live assessments, sampling learner's evidence and assessment decisions and reviewing internal quality assurance documentation and practices to ensure the Centre is delivering a robust internal quality assurance of the assessment decisions which assessors make.

- Writing a report on their findings for both the Centre and Energy & Environment Awards which details the EQAs findings, including any areas where remedial action is required and an action plan to be agreed with the Centre.
- Providing advice and support to Centres in relation to meeting the requirements of the Assessment Strategy or Energy & Environment Awards requirements.

As with Assessors and IQAs, the requirement is for Energy & Environment Awards EQAs to have the relevant occupational competence and hold, or be working towards, one of the recognised IQA qualifications, e.g.:

- Level 4 Award in Understanding the External Quality Assurance of Assessment Processes and Practice (RQF)

4 Unit Content

EEA Unit Ref:	1167
Ofqual Unit Ref:	R/651/7014
Unit Title:	Assist in locating and avoiding supply apparatus and sub structures
Level:	1
Credit value:	2
GLH:	8
Unit aim(s):	This unit aims to develop the learner's skills and knowledge and understanding of how to safely locate and avoid supply apparatus and sub structures. Whilst the learner will work under supervision, they must be able to carry out this activity competently, in support of others working on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC06

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Be able to identify and mark the location of supply apparatus	1.1 Identify the extent of the work site from the work instructions and utility plans
	1.2 Identify accurately the position and type of **supply apparatus and substructures** from records, surface evidence and search **techniques**
	1.3 Mark the position and type of **supply apparatus and substructures** on the work site in line with relevant **Codes of Practice**
	1.4 Check that the position and type of **supply apparatus and substructures** are recorded in line with organisational requirements
	1.5 Communicate the details of position and type of **supply apparatus and sub-structures** to relevant personnel in line with organisational requirements
2. Be able to report problems which could arise during activities to assist in locating supply apparatus and sub-structures	2.1 Report deviations to the position of equipment and the identification of other structures in accordance with organisational requirements
	2.2 Refer problems and conditions outside their responsibility according to **approved procedures and practices** to the relevant designated people
	2.3 Report any damage to supply apparatus and sub-structures to the designated person and make the area safe
3. Be able to maintain the safety and integrity of supply apparatus and sub-structures	3.1 Take measures to avoid damage to **supply apparatus and sub-structures**
	3.2 Ensure exposed supply apparatus and sub-structures are supported correctly, safely and securely, in line with their specification and approved procedures
	3.3 Take precautions to protect personnel and equipment from the effects of damage to supply apparatus and sub-structures

		according to approved procedures and practices
	3.4	Carry out all work so that it complies with statutory requirements and approved procedures and practices
4. Know and understand the different types of supply apparatus and sub-structures	4.1	State the different types of **supply apparatus and sub-structures** that may be exposed in excavation work
	4.2	Outline the key **features** and properties of the medium being carried by different types of supply apparatus
	4.3	Outline the different types of natural and man-made features that may be encountered during excavation work and any associated hazards.
5. Know and understand the equipment and techniques used for locating supply apparatus and sub-structures	5.1	State the different methods, markers, signs and features used to identify underground utilities and sub-structures
	5.2	Outline the basic **search techniques** used for the identification of **supply apparatus and sub-structures** including the use of: • electronic location equipment • trial holes • visual site inspection • drawings and records
	5.3	State how to ensure the accurate location of the required excavation by marking out.
	5.4	State the possible outcomes of incorrect marking out of excavations including: • cost • loss of time and productivity • material wastage • inconvenience • reputation
6. Know how to maintain the safety and integrity of supply apparatus and sub-structures	6.1	Outline the precautions to be taken during excavation work to avoid damage to concealed supply apparatus or sub-structures

	6.2 Outline the risks associated with maintaining the safety and integrity of supply apparatus and sub-structures
	6.3 State the importance of protecting and supporting **supply apparatus and sub-structures**
	6.4 Give examples of how to provide appropriate support for **supply apparatus and sub-structures** exposed during site excavations
	6.5 State the possible consequences of leaving exposed **supply apparatus and sub-structures** unsupported
7. Know and understand the impact of damage to the supply apparatus	7.1 State the effects and implications of damaging supply apparatus including: • personal danger to the personnel on site • risks to the environment • delays to job progress • additional costs in repair
8. Know and understand the roles, responsibilities and legislative requirements for locating and avoiding supply apparatus and sub-structures	8.1 State the basic requirements of **Codes of Practice** and guidance notes for locating and avoiding **supply apparatus and sub-structures** 8.2 Outline the approved **procedures and practices** for locating and avoiding **supply apparatus and sub structures** 8.3 State the roles and responsibilities of people involved in locating and avoiding supply apparatus and sub-structures 8.4 Explain the importance of referring problems outside of own responsibility or experience to designated persons

Range Statements:

Learning Outcome 1 and throughout:

Supply apparatus and sub structures include:

- the supply apparatus for utilities and other agencies, including gas, water, power, drains, sewers
- above ground services

- built structures
- the natural environment

Codes of Practice include:

- statutory and regulatory as directed by the team leader

Approved procedures and practices include:

- Health, safety and environment compliance
- HSE guidance
- regulatory
- emergency
- operational
- organisational
- relevant company procedures within the remit of the learner's responsibility

Learning Outcome 4:

Features: this could include ignition characteristics, fire risk, density relative to air, electrocution risk, sparking, fluids etc.

Learning Outcome 5:

Search techniques include:

- electronic location equipment
- trial holes
- visual observation
- use of drawings and records

Learning Outcome 7:

Supply apparatus: Gas, water, power, drains, sewers, communication cables / ducts

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1168
Ofqual Unit Ref:	T/651/7015
Unit Title:	Working under supervision, excavate holes and trenches
Level:	1
Credit value:	1
GLH:	8
Unit aim(s):	This unit will develop the learner's fundamental knowledge of surfaces and sub-structures to be excavated and the need to avoid damage to underground apparatus. This unit also aims to develop the learner's skills in being able to safely carry out excavation activity in practice. Whilst the learner will work under supervision, they must be able to carry out this activity competently, in support of others working on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC07

Learning Outcome: The learner will:	Assessment Criteria: The learner can:	
1. Know the health and safety requirements for safe excavation work	1.1	State the legislation and codes of practice that govern work in excavations
	1.2	List the personal protective equipment (PPE) used for excavation work
	1.3	Identify the hazards associated with unstable excavations
	1.4	Identify the hazards associated with working in excavations without natural or assisted ventilation
2. Know and understand safe excavation practices	2.1	List the different types of pavement surfaces
	2.2	List the different types of sub-surface materials
	2.3	State the causes of instability in excavated areas
	2.4	Outline the circumstances where ground support would be needed
	2.5	State the circumstances when support must be installed before or during work in an excavation
	2.6	Outline methods for providing support to the walls of an excavation
	2.7	Outline various methods of carrying out excavation work
	2.8	Explain the implications of using incorrect excavation practices
	2.9	List the different types of tools and equipment used for excavation
	2.10	Explain how to select and use appropriate tools and equipment for excavating

	2.11 State the essential maintenance requirements of tools and equipment used for excavating 2.12 Outline safe procedures for handling tools and equipment used for excavation 2.13 List the types and function of the different supply apparatus and sub-structures that may be encountered during excavation work 2.14 Outline how to identify the different types of supply apparatus and sub-structures encountered during excavation work 2.15 State how failure to adequately support and protect supply apparatus and sub-structures can lead to their damage 2.16 Identify the hazards associated with: • Damage to gas supply apparatus • Damage to electrical supply apparatus • Damage to other supply apparatus or sub-structures 2.17 State appropriate ways of storing and protecting excavated materials to facilitate re-use 2.18 State why the incorrect storage of materials could make them unfit for use 2.19 State the importance of referring problems outside their responsibility to appropriate persons
3. Be able to prepare to excavate holes and trenches	3.1 Identify the area to be excavated from work instructions 3.2 Confirm the position and size of the excavation for the task 3.3 Identify the types of surface and sub-surface to be excavated

	3.4 Identify which excavation method is appropriate for the surface and sub-surface materials 3.5 Select suitable tools and equipment to be used for excavating the surface and sub-surface materials
4. Be able to demonstrate safe excavation practice	4.1 Carry out excavation work to approved procedures and practices 4.2 Confirm that the dimensions and condition of the excavation is suitable for the task to be undertaken 4.3 Identify, segregate and store excavated materials in accordance with work instructions 4.4 Ensure that surplus materials are removed from site in accordance with work instructions and requirements 4.5 Carry out excavation in a manner that avoids damage to supply apparatus and sub-structures 4.6 Minimise damage to the natural environment 4.7 Identify, support and protect exposed supply apparatus and sub-structures in accordance with work instructions and relevant codes of practice 4.8 Identify and report any damage to supply apparatus and sub-structures in accordance with work instructions and organisational procedures 4.9 Refer any problems and conditions outside own responsibility in line with approved procedures and practices

Range Statements:

Excavation method: hand dig, machine dig

Surface and sub-surface: flexible, composite, rigid, modular, verge, unmade, natural

Codes of practice: statutory, regulatory

Tools and equipment: hand tools, power tools, mechanical equipment

Supply apparatus and sub-structures: utility supplies, services for other agencies, buried, above ground, built structures and foundations, natural structures (eg watercourses, tree roots)

Approved procedures and practices: health, safety and environmental compliance, regulatory requirements, emergency actions, organisational and operational practices, company procedures

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1146
Ofqual Unit Ref:	Y/651/7016
Unit Title:	Working under supervision, contribute to an efficient and effective work environment for network operations
Level:	1
Credit value:	1
GLH:	7
Unit aim(s):	The learner is required to understand and demonstrate how to provide support and constructively work with others in carrying out network operations activities, and to contribute to efficient and effective operations.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC04

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Be able to contribute to efficiency in the workplace	1.1 Organise the work and operational area in a way to minimise hazards 1.2 Ensure work materials are stored and used in accordance with work requirements and to **approved procedures and practices** 1.3 Ensure **tools and equipment** are maintained ready for use and stored in designated places when not in use 1.4 Ensure the reason for any delays to progress of work are communicated to appropriate persons 1.5 Demonstrate how to communicate clearly in accordance with operational and organisational requirements 1.6 Refer any problems, conditions or situations that are outside of own responsibility to appropriate people
2. Be able to develop and maintain effective working relationships	2.1 Demonstrate how to treat work **colleagues and associates** in a manner that promotes goodwill and maintains good working practices 2.2 Respond to work-related queries and reasonable requests from other people in a constructive and appropriate way 2.3 Support colleagues and associates who appear to be in work-related difficulties 2.4 Communicate effectively and respond to colleagues and associates courteously, in a manner appropriate to the situation 2.5 Use appropriate sources to identify the information needed to carry out work
3. Be able to organise own work and maintain standards	3.1 Under supervision, organise own work and comply with agreed schedules

	3.2 Carry out all work activities in accordance with approved procedures, practices and statutory requirements 3.3 Co-ordinate own work with other relevant personnel and related activities, as required 3.4 Follow instructions and suggestions from people to adapt working methods or improve work outputs 3.5 Carry out work to agreed standards and in accordance with organisational policy 3.6 Check with appropriate people where any information related to work appears incorrect or where there are deviations in standards or specification 3.7 Refer to the designated person any work that may be detrimental to safety or the environment, in accordance with organisational and operational procedures 3.8 Record information and data required for own work activities in line with operational and organisational procedures 3.9 Remove and dispose of waste and surplus materials in accordance with approved procedures and practices
4. Know the legislative, organisational and operational standards and requirements that apply to work activities	4.1 State the approved **procedures, practices** and **standards** relating to your work and the workplace environment 4.2 Outline how to comply with the requirements of the Health and Safety at Work Act 4.3 Outline industry best practice for **work activities** 4.4 Describe the condition in which a finished work site should be left

5. Know how to handle the materials, tools and equipment used for work activities	5.1 Outline the different types of hand **tools and equipment** and how to use them for work activities 5.2 State how to store tools and equipment according to their nature, characteristics and value, in line with organisational requirements 5.3 List the different materials used for work processes and outline their main physical properties 5.4 Outline how materials and equipment may be affected by weather conditions 5.5 Outline the residual and waste materials that can arise from work operations including materials that may be re-used 5.6 Outline how **materials** should be protected prior to use
6. Know and understand key roles and responsibilities	6.1 Outline own responsibilities and the boundaries of own role 6.2 Give examples of the range and roles of others involved in the work activities, including: a. other trades b. management representatives 6.3 Outline the responsibilities and authority of others who may visit or pass through the site. 6.4 Identify when additional intervention is required to deal with problems or conditions outside own responsibility and who to refer them to.
7. Know how to work efficiently	7.1 State how to organise work according to instructions given by the designated person 7.2 List the different ways of communicating during work activities.

	7.3 State the procedures for exchanging and recording information and reporting problems to the designated person
	7.4 State how completion or non-completion of own work can affect colleagues, customers and the organisation
	7.5 Outline how to work as part of a team, who you need to work with and when

Range Statements:

Learning Outcome 1 and throughout:

Approved procedures and practices include:

- Health, Safety & Environment compliance
- regulatory
- emergency
- operational
- organisational
- relevant company procedures, within the remit of the learner's responsibility

Tools and equipment includes: hand tools and equipment; mechanical equipment

Learning Outcome 2:

Colleagues and associates include:

- working personnel on a day-to-day basis
- occasional site users
- designated person (eg team leader)

Learning Outcome 4:

Standards include**:**

- organisational
- company procedures
- industry procedures
- work specified; including industry standards, National Joint Utilities Group (NJUG), New Roads and Street Works Act (NRSWA), Environmental Act 1990, Health and Safety at Work Act
- quality and quantity.

Work activities include, but are not limited to: signing & guarding, excavation, mains & service laying

Learning Outcome 5:

Hand tools and equipment for excavation, pipe cutting, pipe jointing

Materials includes pipe and fittings for water and gas.

Evidence Guidance:

Portfolio of evidence

Assessed in RWE or on site

EEA Unit Ref:	1166
Ofqual Unit Ref:	A/651/0393
Unit Title:	Principles of Health and Safety in Network Construction Operations
Level:	2
Credit value:	4
GLH:	37
TQT:	50
Unit aim(s):	This unit is designed to develop the learner's underpinning knowledge of health and safety in network construction operations, including how to work safely in excavations.
Assessment requirements:	This unit is knowledge only and will be assessed by a multiple choice question paper
Relationship to NOS:	None

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Know and understand general Health and Safety guidance, legislation and organisational procedures in utilities network construction operations	1.1 State the main responsibilities of the Employer and employee under the Health and Safety at Work Act and environmental protection legislation
	1.2 Describe the safe procedures for handling hazardous materials
	1.3 Explain the organisational accident recording and reporting procedures
	1.4 Identify the range, use and importance of personal protective equipment for network construction operations
	1.5 Describe the procedures for lone working
	1.6 Explain the importance of organisational procedures for safe **lifting and handling**
	1.7 Describe the procedures, regulatory requirements and Employer / employee responsibilities for working at heights
	1.8 Explain the importance of carrying out on-site risk assessments, and implementing safe systems of work and the need for constant review
	1.9 Describe the implications of noise to self, others, adjacent activities, the public and surrounding environment including the action levels for provision and wearing of hearing protection
	1.10 Describe the implications of toxic fumes, dust and hazardous materials to self, others, adjacent activities, the public and surrounding environment

	1.11	Explain the importance of environmental control and reporting procedures
2. Know and understand how to work in excavations safely	2.1	Explain the health and safety guidance governing work in excavations and with live gases
	2.2	Explain the importance of understanding and implementing a safe system of work (SSOW) document when working in excavations
	2.3	Describe the implications of using **poor excavation practices**
	2.4	Explain the **potential dangers** of working in trenches and excavations
	2.5	Explain the dangers of working with or near to **pressurised pipelines**
	2.6	Explain the dangers of taking actions that can create **confined spaces risks** in excavations

Range Statements:

Learning Outcome 1:

Lifting and Handling

(a) Manual lifting & handling

(b) Lifting with machinery

Learning Outcome 2:

Poor excavation practices: cost, time, damage to other utility apparatus

Potential Dangers: trench collapse, flooding, contamination, poor access and egress

Pressurised Pipelines: Water, Gas, Pumped sewer

Confined Space risks: Poor access & egress, flammable gases, noxious gases, lack of oxygen, introduction of incorrect cutting equipment

Evidence Guidance:

This unit is knowledge only and therefore the evidence type should provide an assessment of the learner's knowledge and understanding. Some examples are provided but please note this list is not exhaustive; professional discussion, Centre-devised knowledge test, written case study etc.

EEA Unit Ref:	1169
Ofqual Unit Ref:	A/651/7017
Unit Title:	Working under supervision, operate powered tools and equipment for Network Construction Operations
Level:	1
Credit value:	2
GLH:	8
Unit aim(s):	This unit aims to provide the learner with the fundamental knowledge and understanding of powered tools and equipment. The learner will also develop skills in being able to safely operate powered tools and equipment in practice. Whilst the learner will work under supervision, he/she must be able to carry out this activity competently, in support of others working on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC07

Learning Outcome: The learner will:	Assessment Criteria: The learner can:	
1. Know and understand the range of powered tools and equipment used for site work activities	1.1	List the various types of powered tools and equipment used for site work activities
	1.2	Outline the purpose of various types of powered tools and equipment (eg compaction, excavation, cutting)
2. Know and understand the health and safety requirements for the safe operation of powered tools and equipment	2.1	Identify the hazards to self and others arising from the use of powered tools and equipment
	2.2	List the personal protective equipment (PPE) appropriate to the use of various types of powered tools and equipment
	2.3	State the responsibilities operators have under legislation and regulations when using powered tools and equipment
	2.4	Outline the operational and safety procedures for powered tools and equipment and how to ensure the safety of self, others and the environment
3. Know how to work with powered tools and equipment	3.1	Outline how powered tools and equipment will be used in accordance with manufacturer's instructions
	3.2	State the operational procedures for starting and stopping powered tools and equipment in routine and emergency situations
	3.3	Outline the relevant organisational and operational procedures for lifting and handling powered tools and equipment
	3.4	Outline the correct way to store powered tools and equipment in accordance with organisational and operational procedures
	3.5	Outline the approved procedures and practices to follow when operating various powered tools and equipment

	3.6 List the powered tools and equipment which require the operator to have specific training and certification
	3.7 Give examples of the different types of defects that might occur to various types of powered tools and equipment
	3.8 Outline the adjustments that can be safely made by the operator to various powered tools and equipment
	3.9 Give examples of the typical types of damage for powered tools and equipment and the potential safety and operational implications
	3.10 Outline how damage to equipment should be reported in compliance with organisational procedures
4. Prepare powered tools and equipment for use	4.1 Identify operations requiring the use of powered tools and equipment
	4.2 Carry out pre-start inspections on the powered tools and equipment in line with approved procedures and practices
	4.3 Ensure that any defects on the powered tools and equipment are identified and appropriate action taken
	4.4 Confirm that the powered tools and equipment are safe and ready for use in compliance with approved procedures and practices
5. Run and operate powered tools and equipment	5.1 Carry out start and stop procedures to confirm functions are working in accordance with the manufacturer's operating instructions and approved procedures and practices
	5.2 Safely operate powered tools and equipment in line with approved procedures and practices
	5.3 Ensure work is carried out to meet statutory requirements and approved procedures and practices
	5.4 Ensure that defects in performance are identified and reported to the designated persons

	5.5	Refer any problems and conditions outside their responsibility to the designated person
6. Shut down and carry out post-stop checks on powered tools and equipment	6.1	Safely stop powered tools and equipment in line with approved procedures and practices
	6.2	Carry out post-stop checks in accordance with organisational and operational procedures
	6.3	Ensure that any defects are recorded and reported to the designated person
	6.4	Ensure that powered tools and equipment are left in a safe and secure condition in accordance with approved procedures and practices

Range Statements:

Operations: routine, predictable

Powered tools and equipment: hand operated, mobile

(eg pneumatic or hydraulic breakers, compressors, generators, pumps, vibro-tampers, vibrating plates, pavement and road saws)

Approved procedures and practices: health, safety and environmental compliance, regulatory, emergency, operational, organisational, relevant company procedures

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1170
Ofqual Unit Ref:	D/651/7018
Unit Title:	Working under supervision, join polyethylene pipe by electrofusion
Level:	1
Credit value:	2
GLH:	8
Unit aim(s):	This unit aims to develop the learner's understanding of the need to correctly prepare polyethylene pipe prior to electrofusion jointing, and their ability to correctly carry out electrofusion jointing on both mains and services. Whilst the learner will work under supervision, they should be able to carry out this task in support of others on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC16

Learning Outcome: The learner will:	Assessment Criteria: The learner can:	
1. Know and understand how to join polyethylene pipe by electrofusion	1.1	Outline the basic safety requirements for hazards arising from electrofusion jointing operations
	1.2	Outline the requirement to correctly prepare polyethylene pipe prior to electrofusion
	1.3	Outline techniques for preparing polyethylene pipe prior to electrofusion
	1.4	Outline electrofusion jointing process and procedures.
	1.5	State how to select the correct materials and equipment for electrofusion jointing
	1.6	Outline how to inspect completed electrofusion joints for successful fusion and defects.
	1.7	State the cause and effect of contamination in electrofusion joints
	1.8	Outline why pipe support, alignment and protection is needed when carrying out fusion operations, and the consequence of not providing it
	1.9	State how to connect, shut down and disconnect electrofusion equipment
	1.10	State what to do if a problem occurs during the electrofusion process and to whom it should be reported.
2. Be able to join polyethylene pipe by electrofusion	2.1	Comply with approved health, safety and environment regulatory and guidance requirements
	2.2	Follow relevant electrofusion **jointing procedures** and job instructions.
	2.3	Check that joint preparation complies with specifications.

2.4	Check that **jointing and associated equipment** and consumables are fit for purpose
2.5	Make electrofusion **joints** as specified using appropriate techniques.
2.6	Produce electrofusion **joints** of the required **quality**
2.7	Demonstrate how to safely shut down electrofusion equipment upon completion of jointing activities.
2.8	Deal promptly with excess and waste materials in line with approved procedures
2.9	Deal promptly and effectively with problems within your control and report those that cannot be solved.

Range Statements:

Polyethylene pipe to be used:

- polyethylene pipe of an appropriate SDR rating.
- Multi-layered pipe.

Learning Outcome 2:

Jointing process, procedures and equipment to be used include:

- for services – electrofusion jointing on pipe up to and including 63mm
- for mains – electrofusion jointing on pipe larger than 90mm and up to and including 315mm

Jointing equipment includes:

- electrofusion control box and associated leads
- tee restraining clamps
- alignment clamps

Type and complexity of joint includes:

- socket
- saddle

Jointing position and environmental conditions include:

- vertical and horizontal planes
- in and out of excavations

- under all weather conditions.

Quality standards and accuracy to be achieved include:

- water industry standards (as appropriate)
- gas industry standards (as appropriate)
- manufacturers' instructions and specifications
- relevant company procedures
- Codes of Practice
- Health, Safety and Environment compliance

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1171
Ofqual Unit Ref:	F/651/7019
Unit Title:	Working under supervision, join polyethylene pipe by butt fusion
Level:	1
Credit value:	2
GLH:	6
Unit aim(s):	This unit is designed to enable a learner to develop an understanding of the need to correctly prepare polyethylene pipe prior to butt fusion jointing, and to be able to correctly carry out butt fusion jointing on mains. Whilst the learner will work under supervision, they should be able to carry out this task in support of others on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC17

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Know and understand how to join polyethylene pipe by butt fusion	1.1 Outline the basic safety requirements for hazards arising from butt fusion jointing operations 1.2 Outline the requirement to correctly prepare polyethylene pipe prior to butt fusion 1.3 Outline techniques for preparing polyethylene pipe prior to butt fusion 1.4 Outline **butt fusion jointing processes** and procedures. 1.5 State the requirements for joining pipes of similar specifications (SDR) by butt fusion 1.6 State the cause and effects of defects in butt fusion joints, including: • misalignment • split beading • inadequate beading • excessive beading 1.7 State the cause and effect of contamination in butt fusion joints 1.8 Outline why pipe support, alignment and protection is needed when carrying out butt fusion operations, and the consequence of not providing it 1.9 State how to select the correct **equipment** for the butt fusion jointing 1.10 State how to inspect completed butt fusion joints for defects. 1.11 Outline how to connect, shut down, operate and disconnect **equipment** 1.12 State what to do if a problem occurs during the butt fusion process and to whom it should be reported.

2. Be able to join polyethylene pipe by butt fusion, while working under supervision	2.1 Comply with approved health, safety and environment regulatory and guidance requirements 2.2 Follow relevant butt fusion **jointing procedures** and job instructions. 2.3 Prepare polyethylene pipe for butt fusion in accordance with specifications and job instructions 2.4 Carry out and monitor butt fusion operations in accordance with specifications and job instructions 2.5 Produce butt fusion **joints** of the required **quality** 2.6 Demonstrate how to safely shut down equipment to a safe condition upon completion of jointing activities. 2.7 Deal promptly with excess and waste materials in line with approved procedures 2.8 Deal promptly and effectively with problems within your control and report those that cannot be solved.

Range Statements:

Learning Outcome 1 and 2:

Polyethylene pipe to be used:

a. pipe of an appropriate SDR rating.
b. Multi-layered pipe.

Butt fusion jointing process, procedures and equipment to be used include:

a. automatic and fully automatic, appropriate to the company's procedures
b. clamps, supports and alignment equipment

Types of joint includes:

a. butt

Jointing position and environmental conditions include:

a. in line and level
b. under all weather conditions, in accordance with specifications

Quality standards and accuracy to be achieved include:

a. manufacturers' instructions and specifications
b. relevant company procedures
c. Codes of Practice
d. Health, Safety and Environment compliance
e. calibration

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1172
Ofqual Unit Ref:	K/651/7020
Unit Title:	Working under supervision, assemble components to meet specifications for water network construction operations
Level:	1
Credit value:	2
GLH:	8
Unit aim(s):	This unit aims to enable the learner to develop their knowledge, understanding and skills in the installation of water networks and associated components. Whilst the learner will work under supervision they should be able to carry out this task in support of others on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSWNC02

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Know and understand how to assemble components to meet specifications	1.1 Outline the hygiene requirements to prevent contamination when storing and handling pipe and components whilst assembling water networks. 1.2 Outline how to use basic drawings and related specifications as explained by the team 1.3 Summarise **basic methods and techniques** associated with assembling **components** 1.4 Outline the need for **quality control procedures** 1.5 List the various types of **handling equipment** and procedures associated with the work activity 1.6 Outline the correct preparation **techniques** for simple joint assembly 1.7 Outline the tools and equipment required to carry out specific work activities and the importance of looking after tools and equipment 1.8 Outline what to do in the event of a **problem** occurring, who to report it to and when

2. Be able to assemble components to meet specifications for water network construction operations	2.1 Demonstrate how to work safely at all times, complying with health, safety and environment requirements technical guidance notes, regulations and guidelines 2.2 Comply with relevant instructions, assembly drawings and industry specifications 2.3 Demonstrate how to ensure that the specified **components** are available and in a usable condition 2.4 Use the appropriate **methods and techniques** to assemble the components in their correct position 2.5 Demonstrate how to secure the **components** using the specified connectors and securing devices 2.6 Check the completed **assembly** to ensure that all operations have been completed and the finished assembly meets the required specification 2.7 Deal promptly and effectively with **problems** within own control and report those that cannot be resolved

Range Statements:

Learning Outcome 1 and throughout:

Handling equipment includes but is not limited to: coil trailers, pipe pusher, towing head, lifting straps.

Methods and techniques include:

- as per work instructions
- cutting and preparation
- drilling and tapping
- mechanical jointing on metallic and polyethylene

Components used are:

- metallic pipes
- pe pipes
- PE/AL/PE (barrier pipes)
- fittings
- valves

- hydrants
- meters

Problems include:

- incorrect fittings
- faulty fittings
- contaminated fittings

Quality control procedures and accuracy: water industry specifications & guidance, manufacturers' instructions and specifications, relevant company procedures, Codes of Practice, Health, Safety and Environment compliance as directed by the team leader

Learning Outcome 2:

Assembly to be produced includes:

- bolt
- compression- including end load resistant
- flanged
- fusion welded
- push-fit

Problems include:

- incorrect fittings
- faulty fittings
- contaminated fittings

Evidence Guidance:

Observed in approved RWE or on site

EEA Unit Ref:	1173
Ofqual Unit Ref:	L/651/7898
Unit Title:	Working under supervision, assemble components to meet specifications for gas network construction operations
Level:	1
Credit value:	2
GLH:	15
Unit aim(s):	This unit aims to develop a learner's knowledge and skills in following correct operational practices and to be able to apply these to simple practical tasks involving services and mains. Whilst the learner will work under supervision, he/she must be able to carry out these tasks in support of others on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSGNC03

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Know and understand the health and safety requirements specific to assembling components to meet specifications	1.1 State the health, safety and environment legislation, procedures and Codes of Practice specific to work activities including: • manual handling • use of equipment
2. Know and understand how to assemble components to meet specifications	2.1 Outline how to use basic drawings and related specifications for the task 2.2 Describe **basic methods and techniques** associated with assembling **components** 2.3 Outline the need for **quality control procedures** 2.4 Describe the various methods used for **handling equipment** and materials associated with work activities 2.5 Describe the correct preparation **techniques** for joints on metallic and polyethylene pipework 2.6 Outline the tools and equipment required to carry out specific work activities and the importance of looking after tools and equipment 2.7 Outline what to do in the event of a problem occurring on site, who to report it to and when
3. Be able to assemble components to meet specifications for gas network construction operations	3.1 Demonstrate how to work safely at all times, complying with health, safety and environment requirements technical guidance notes, regulations and guidelines 3.2 Follow relevant work instructions, assembly drawings and other specifications

3.3 Demonstrate how to ensure that the specified **components** are available and in a usable condition

3.4 Demonstrate how to secure the **components** using the specified connectors and securing devices

3.5 Check the completed **assembly** to ensure that all operations have been completed and the finished assembly meets the required specification

3.6 Deal promptly and effectively with problems within own control and report those that cannot be resolved

Range Statements:

Learning Outcome 2 and throughout:

Methods and techniques include:

- as per work instructions, company procedures and codes of practice
- cutting
- drilling and tapping
- jointing of metallic and polyethylene pipework and fittings

Handling equipment includes but is not limited to: coil trailers, pipe pusher, towing head, lifting straps.

Components used are:

- pipes
- fittings

Quality control procedures and accuracy: gas industry standards, manufacturers' instructions and specifications, relevant company procedures, Codes of Practice, Health, Safety and Environment compliance as directed by the team leader

Learning Outcome 3:

Assembly to be produced includes:

- bolt
- compression
- flanged
- screwed
- electrofusion

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1174
Ofqual Unit Ref:	L/651/7021
Unit Title:	Assist in preparing resources and signing, lighting and guarding the area for highway works
Level:	1
Credit value:	3
GLH:	12
Unit aim(s):	This unit aims to develop the learner's skills in, and knowledge and understanding of, requirements for providing signing, lighting and guarding for work on the highway and be able to install this on operational sites. Whilst the learner will work under supervision, they should be able to carry out this task in support of others on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	EUSMUNC15

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Be able to prepare resources and the site for highway works	1.1 Confirm the **materials and equipment** are correct for the task and are of the required quality and quantity required.
	1.2 Maintain the security of **tools, equipment and materials** in accordance and organisational requirements
	1.3 Report any shortages and defects of **tools, equipment and materials** in accordance with operational and organisation requirements
	1.4 Report any problems and conditions outside of own responsibility in accordance with **approved procedures and practices**
	1.5 Confirm the location and extent of the work site in accordance with instructions and specified requirements.
	1.6 Identify any hazards and risks and take appropriate action to ensure the safety of the work area and natural environment
	1.7 Set out the work area in accordance with specified requirements
2. Be able to install signing, lighting and guarding traffic control systems in line with industry Codes of Practice and current legislation	2.1 Identify the safety and security requirements for the highways work site from work instructions and specifications
	2.2 Set out and erect **protection equipment** in line with relevant **codes of practice**
	2.3 Confirm the positioning and condition of the **protection equipment** in accordance with the work requirements and **codes of practice**
	2.4 Take measures to ensure **traffic control equipment** is positioned, adjusted, maintained and controlled appropriate to

	the progress and changes of the work activity 2.5 Remove **protection equipment** and **traffic control equipment** in accordance with **Codes of Practice** 2.6 Work to **approved procedures and practices** and in compliance with statutory requirements.
3. Be able to resolve problems which could arise from work on the highway	3.1 Report defective and damaged **equipment** to the designated person 3.2 Refer **problems** and conditions outside their responsibility to the designated person using approved procedures.
4. Know and understand the health and safety requirements for safe working on the highway when installing signing, lighting and guarding	4.1 State the key requirements for an effective and safe work area 4.2 Identify common hazards associated with excavation work and appropriate safety precautions 4.3 State the range of **traffic control equipment** required for signing and guarding in the highway 4.4 State the range and purpose of personal protective equipment for use in highway operations 4.5 State the importance of complying with safety and procedural instructions 4.6 Outline the main Health, Safety and Environment responsibilities of employers and employees engaged in highway operations 4.7 Outline the importance of checking and reporting defects in personal protective equipment to the designated person
5. Know how to prepare resources and site for highway operations	5.1 List the range of hand and powered tools used for excavation 5.2 Outline the maintenance requirements for the range of hand and power tools used for excavation and reinstatement

	5.3 State the importance of confirming that the work location has been correctly identified from instructions 5.4 Outline the main industry **approved procedures and practices** signing, lighting and guarding on the work site
6. Know how to install signs, lights and guarding traffic control systems in line with industry Codes of Practice and current legislation	6.1 List the roles and responsibilities of persons working on the highway 6.2 State the roles and responsibilities of the different people on site 6.3 Outline the procedure for reporting and recording job progress 6.4 State why it is important to protect highway works 6.5 List the different types of **protection equipment** and **traffic control equipment** 6.6 Describe the types of guarding used to protect highway works and how to position them relative to the work site 6.7 Outline how to position and operate traffic controls under supervision 6.8 Explain the correct sequence for erection and dismantling of traffic control arrangements 6.9 State the importance of maintaining signs and lights in a clean condition during the course of highway works
7. Know how to respond to accidents, incidents and emergencies	7.1 Outline the organisation's procedures for accident recording and reporting 7.2 Outline the actions to take in the event of an accident or emergency during operations in the highway
8. Know how to report and resolve problems which could arise from work on the highway	8.1 Explain why it is important to refer problems that are outside own area of responsibility to the designated person

	8.2 Explain why it is important to identify and report defects in signing, lighting and guarding and traffic control systems to the designated person

Range Statements:

Learning Outcome 1 and throughout:

Materials include:

- materials required for the work activity
- correct quality and quantity of work materials
- backfill and sub-courses

Tools and equipment include:

- hand tools
- powered tools
- motorised and mechanical equipment for excavation
- protection equipment for excavations (signs, lights, guards)

Approved procedures and practices include:

- Health, Safety and Environment compliance
- regulatory
- emergency
- operational
- organisational
- relevant company procedures within the remit of the learner's responsibility
- Safety at Street Works and Road Works code of practice (ie the 'Red Book')

Learning Outcome 2 and throughout:

Codes of practice are:

- statutory
- regulatory, including New Roads and Street Works Act
- Safety at Street Works and Road Works code of practice (ie the 'Red Book')

Protection equipment includes:

- signs
- lights
- guards

Traffic control equipment includes:

- warning signs
- priority signs
- Stop/Go boards

- portable traffic signals

Learning Outcome 3

Problems: equipment failure; materials shortage

Evidence Guidance:

Observed in RWE or on site

EEA Unit Ref:	1175
Ofqual Unit Ref:	M/651/7022
Unit Title:	Assist in preparing resources for protecting work sites
Level:	1
Credit value:	1
GLH:	8
Unit aim(s):	This unit aims to enable the learner to develop their knowledge, understanding and skills in protecting excavations and work locations when working on construction sites, excluding work on the highway. Whilst the learner will work under supervision, they should be able to carry out this task in support of others on site.
Assessment Requirements:	Practical observation in RWE or on site (skills criteria) Multiple choice question paper (knowledge criteria)
Relationship to NOS:	

Learning Outcome: The learner will:	Assessment Criteria: The learner can:
1. Be able to prepare resources for site works	1.1 Confirm the **materials and equipment** are correct for the task and are of the quality and quantity required. 1.2 Maintain the security of **materials, tools and equipment** in accordance with organisational requirements 1.3 Report any shortages and defects of **materials**, **tools and equipment** in accordance with operational and organisational requirements 1.4 Report any problems and conditions outside own responsibility in accordance with **approved procedures and practices** 1.5 Confirm the location and extent of the works site in accordance with instructions and specified requirements. 1.6 Identify any hazards and risks and take appropriate action to ensure the safety of the work area and the natural environment 1.7 Set out the work area in accordance with specified requirements
2. Know and understand the health and safety requirements for providing protection to the work site	2.1 State the key requirements for an effective and safe work area 2.2 State the importance of confirming that the work location is identified correctly from verbal instructions 2.3 Identify common hazards encountered on a work site and appropriate safety precautions 2.4 List the range of safety equipment required for site operations

	2.5 List the range and purpose of personal protective equipment for use in site operations
	2.6 Outline the main Health, Safety and Environment responsibilities of employer and employee engaged in site operations
3. Know how to prepare resources and the work site	3.1 List the main **materials** encountered in excavation work on sites
	3.2 List the range of **tools and equipment** used for excavation
	3.3 Outline the maintenance requirements for the range of hand and power tools used for excavation
	3.4 Outline the main industry **approved procedures and practices** for determining site and resource requirements
	3.5 List the roles and responsibilities of persons in site operations, including managers of the site
	3.6 Explain why it is important to refer problems that are outside own area of responsibility to the designated person

Range Statements:

Learning Outcome 1 and throughout:

Materials include:

- materials required for the work activity
- correct quality and quantity of work materials

Tools and equipment include:

- hand tools
- powered tools
- motorised and mechanical equipment for excavation
- protection equipment for excavations (signs, guards)

Approved procedures and practices include:

- Health, Safety and Environment compliance
- regulatory
- emergency
- operational
- organisational
- relevant company procedures within the remit of the learner's responsibility

Evidence Guidance:

Observed in RWE or on site

5 Awarding

Grading

In order to achieve the qualifications listed in this Qualification Specification, learners must “pass” each of the assessment methods for the units which comprise the specific qualification. Assessment decisions will be subject to internal and external quality assurance.

Certification

Energy & Environment Awards issues a qualification certificate of achievement for each qualification that has been achieved by the learner. Energy & Environment Awards offers learners an electronic certificate available to the Centre to download from Quartzweb, following the processing of a successful claim, or a physical certificate by exception and at an additional cost, which will be sent directly to the registered Centre. Learners who do not achieve the full qualification, but who have successfully achieved individual unit(s) will be able to receive an electronic unit certificate.

6 Energy & Environment Awards Policies

Energy & Environment Awards has published comprehensive policies, which are made available to approved Centres and learners on the Energy & Environment Awards Qualifications website at: https://energyenvironmentawards.co.uk/policies-and-fees/

Contact Us

Please do not hesitate to contact the Energy & Environment Awards Qualifications team for any query relating to the delivery, assessment, quality assurance or certification of these qualifications.

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