QUALIFICATION SPECIFICATION

ECITB Diploma in Installing Plant and Systems – Pipefitting at SCQF Level 6

Qualifications Scotland Accreditation group award number: R832 04

Release Version 2-1

To be used from 01/02/2026

Issue
We will inform Approved Centres of any changes to this issue. The latest issue can be found on our website.

Changes to this document

The table below sets out all revisions made to this document since it was first issued, and the dates from which the revisions were effective.

New Issue number	Summary of changes made between the previous issue and this current issue	Page number	Date of change
RV2-0	Changes have been made to the learning outcomes, assessment criteria and assessment requirements for the following units: ECITBCO-S1 Contribute to effective working relationships in engineering construction		20/10/2025
	ECITBCO-S2 Work safely and minimise risk in engineering construction		
	ECITBCO-S4 Work with environmental sustainability in mind		
	ECITBCO-S5 Interpret and follow documentation and procedures		
	ECITBCO-S6 Use digital technology and information effectively and securely		
RV2-1	Section 1-1 Amendment from Department for Education to Department for Work and Pensions Replace SQA Accreditation with Qualifications Scotland Accreditation	4 Throughout document	01/02/26

Accessibility

This document is available in a larger font upon request.

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1. Introduction

Objective and overview

The Engineering Construction Industry Training Board (ECITB) is the employer-led skills, standards, and qualifications body for the development of the engineering construction workforce of Great Britain. An arms-length body of the UK Government, the ECITB reports directly to the Department for Work and Pensions.

The ECITB Awarding Body for accredited engineering construction qualifications is part of the industry training board. Our qualifications certify knowledge and competence across craft and technical disciplines. They improve quality and standards for the industry, helping engineering construction companies to stay competitive.

This document is for use by Approved Centres and their candidates. It is also used by ECITB's External Quality Assurers. It may also be of interest to employers and training providers.

The ECITB Diploma in Installing Plant and Systems – Pipefitting at SCQF Level 6 is a work-based qualification based on the National Occupational Standards (NOS) for the Engineering Construction industry. The qualification comprises both knowledge and competence. NOS are developed by employers and professional bodies in conjunction with the ECITB Standard Setting Organisation and describe what employers mean by occupational competence within a particular job role.

The objectives of this qualification are to:

- Prepare candidates for employment in the installation of engineering construction plant and systems in the pipefitting industry.
- Support candidates working in the installation of engineering construction plant and systems in the pipefitting industry.
- Enable candidates to progress to higher levels, including opportunities to move to supervisory and managerial roles.

Pipefitting occupations

Pipefitters maintain the safety, integrity and effective operation of plant and systems in a wide range of industries of national importance including power generation and water infrastructure, petrochemical, oil and gas, and steel, food and drink processing.

Pipefitters within the engineering construction industry are responsible for the fabrication, assembly, positioning, installation, and repair of piping systems. Engineering construction industry piping systems often carry water, steam, chemicals or fuel which may be used in cooling, heating, lubricating and other processes. The piping can vary in bore size and material type depending on the fluid it is designed to carry and the operating pressures and environments of these systems. The piping system design will also determine the method of jointing required and the pipefitter must ensure the integrity of the mechanical joints that are made. Methods of jointing can range from threaded, bolted and clamped solutions to, where required, the preparation of the pipe assembly to enable a more permanent welded joint. Loss of the containment through poor jointing may result in machinery and equipment failure, environmental damage or injury/loss of life. A pipefitter is often required to have additional training in other skills to carry out their role effectively.

Installation trades are overseen by a supervisor and work to required tolerances, the activities performed require a high degree of skill to ensure that the specifications within design, fabrication and installation drawings are achieved. Pipefitters are responsible for the quality of their own work, possibly that of others, and for ensuring work is completed safely and effectively, following procedures and completing essential documentation at all times. They work on various types of plant, systems and installations depending on their company and sector.

Entry requirements

There are no mandatory entry requirements for this qualification. The qualification is open to any candidate who the Approved Centre believes can reach the assessment requirements set out within this document. A candidate must have a sound grasp of the English language and mathematics to be able to follow instructions as well as complete the learning and assessment required for this qualification. The Approved Centre will work with prospective candidates and, where appropriate, employers, to determine a candidate's suitability for the qualification.

Language

This qualification is available in English only. For candidates who use English as a second language, an Approved Centre must satisfy itself prior to registering a candidate that the candidate's level of English is sufficient to be able to access the learning and undertake the assessment at the appropriate level, and to be able to interact with others and work safely.

Achievement

This qualification consists of 12 mandatory units. A candidate must successfully meet the requirements in each of the units in order to attain this qualification. This document details the learning outcomes and assessment criteria that a candidate must meet in order to demonstrate the acquisition of the knowledge and skills needed to be awarded an ECITB Diploma in Installing Plant and Systems – Pipefitting SCQF Level 6. Mandatory observation of the candidate by an Approved Centre assessor is required to achieve this qualification.

The contents of each unit within the qualification interrelate and the AB issues credit certificates for completion of stand-alone units, on request from the Approved Centre. The qualification contains the following units:

ECITB unit number	Qualifications Scotland Accreditation unit number	Unit title	SCQF level	SCQF Credit
ECITBCO-S1	UT09 04	Contribute to effective working relationships in engineering construction	5	6
ECITBCO-S2	UT55 04	Work safely and minimise risk in engineering construction	6	10
ECITBCO-S4	UT56 04	Work with environmental sustainability in mind	6	6
ECITBCO-S5	UT23 04	Interpret and follow documentation and procedures	6	6
ECITBCO-S6	UT54 04	Use digital technology and information effectively and securely	5	2
IPS-PF02S	UT01 04	Assemble pipework components to meet required specification in engineering construction	6	26
IPS-PF03S	UT33 04	Position and install pipework and related plant, equipment and systems in engineering construction	7	20
IPS-PF06S	UT52 04	Test the performance and condition of pipework in engineering construction	6	9
IPS-PF07S	UT21 04	Form pipework materials by applied pressure to specification in engineering construction	6	17

IPS-PF08S	UT19 04	Dismantle pipework components and assemblies in engineering construction	7	8
IPS-PF09S	UT44 04	Shape pipework components by material removal using hand tools in engineering construction	6	17
IPS-PF10S	UT25 04	Mark out to the required specification in engineering construction	6	14

Credit and level

Credit is a value attached to each unit and each qualification, based on the amount of time it would take the average candidate to achieve and demonstrate the learning outcomes of a qualification. In practice, individual candidate requirements and individual delivery methods mean there will be variation in the actual time taken to complete a qualification. Credit are estimates, based on consultation with industry practitioners, supervisors, and assessors. One credit point is equivalent to 10 hours. Credit includes:

- Formal input, e.g. contact time with tutor, acquisition of knowledge/understanding. Off the job time.
- Additional activities, e.g. developing practice, reflection, research/study time. On the job time.
- Assessment, e.g. planning, completion of assessment tasks.

This qualification has 141 credit points.

The credit points allow candidates, learning providers and employers to compare the size of different qualifications.

In some instances, it may be possible to transfer SCQF credit points to and from other learning programmes This will enable a candidate to include evidence of prior knowledge and competence and to ensure they do not repeat learning previously undertaken.

Universities, colleges, Qualifications Scotland Accreditation and other awarding bodies decide how many of the credit points received from previous learning can be transferred into their programmes. In all cases of credit transfer, it would be the decision of the accepting learning provider as to how many credit points could be transferred. Please refer to the *ECITB Recognition of Prior Learning Policy and Procedures*.

Time limits on the process of credit accumulation or exemptions are set out for each unit within the qualification structure.

This qualification is at SCQF Level 6. The SCQF descriptor for Level 6 is:

Characteristic 1: **Knowledge and understanding**
Demonstrate and/or work with: An appreciation of the body of knowledge that constitutes a subject/discipline/sector. A range of knowledge, facts, theories, ideas, properties, materials, terminology, practices, and techniques about, and associated with, a subject/discipline/sector. Relating the subject/discipline/sector to a range of practical and/or commonplace applications.
Characteristic 2: **Practice: Applied knowledge, skills and understanding**
Apply knowledge, skills and understanding: In known, practical contexts.

In using some of the basic, routine practices, techniques and/or materials associated with the subject/discipline/sector. In exercising these in routine contexts that may have non-routine elements. In planning how skills will be used to address set situations and/or problems and adapt these as necessary.
Characteristic 3: **Generic cognitive skills**
Obtain, organise, and use factual, theoretical and/or hypothetical information in problem solving. Make generalisations and predictions. Draw conclusions and suggest solutions.
Characteristic 4: **Communication, ICT, and numeracy skills**
Use a wide range of skills, for example: Produce and respond to detailed and relatively complex written and oral communication in both familiar and unfamiliar contexts. Select and use standard ICT applications to process, obtain and combine information. Use a wide range of numerical and graphical data in routine contexts which may have non-routine elements.
Characteristic 5: **Autonomy, accountability and working with others**
Take responsibility for carrying out a range of activities where the overall goal is clear, under non-directive supervision. Exercise some supervisory responsibility for the work of others and lead established teams in the implementation of routine work within a defined and supervised structure. Manage limited resources within defined and supervised areas of work. Take account of roles and responsibilities related to the tasks being carried out and take a significant role in the evaluation of work and the improvement of practices and processes.

Equity, diversity and inclusion

We have designed this qualification and its assessments to enable fair access to all candidates as far as reasonably possible, while taking industry requirements into consideration, e.g. health and safety.

You may wish to refer to our *Equal Opportunities Policy* and the *Reasonable Adjustments and Special Considerations Policy and Procedure* that are published on the ECITB website.

If you would like to discuss arrangements for reasonable adjustments, please contact us at qualifications@ecitb.org.uk.

Progression

Completing this qualification can lead to a range of further career options. Those who wish to stay in engineering construction can develop their skills further, or progress through supervision to senior positions such as Construction Manager. Individuals can progress through additional qualifications and apprenticeships or into supporting engineering functions such as technical leadership, procurement, quality assurance, project management or project controls.

2. Qualification units and scope of assessment

2.1 Unit features

This qualification consists of 12 mandatory units. Candidates must attain all the learning outcomes in each unit to gain a Pass in the qualification. Candidates attain a learning outcome by meeting each of the assessment criteria linked to the learning outcome at the appropriate standard. The units in this specification show the assessment criteria that a candidate must meet to attain the learning outcomes.

The qualification grade available is Pass.

Each unit has the following sections:

ECITB unit number
The unique unit code that identifies the unit on ECITB's system.
Qualifications Scotland Accreditation unit number
The unique unit code that the regulator (Qualifications Scotland Accreditation) uses to identify the unit.
Unit title
The name of the unit, which reflects the content of the unit.
SCQF level
These levels measure the degree of challenge posed by the qualification compared to other qualifications. The levels are determined by using the SCQF and EQF level descriptors.
Credit value
The credit value represents the learning time being defined as the time taken by candidates at the level of the unit, on average, to complete the learning outcomes of the unit to the standard determined by the assessment criteria.
Unit aim
A summary of what the unit enables the candidate to do.
Learning outcomes
What a candidate will know, understand and/or be able to do upon attainment of the unit. Each learning outcome starts with the letters LO.
Assessment criteria
The requirements a candidate is expected to meet to demonstrate the attainment of the related learning outcome. Each assessment criterion starts with the letter K if it relates to knowledge or understanding and with the letter S if it relates to skills. Each assessment criterion starts with a command verb which instructs the candidate in what to do.
Assessment
This section outlines how the unit will be assessed.
Standards
The National Occupational Standard(s) that the unit is mapped to.

2.2 Underpinning knowledge and skills

Units ECITBCO-S1 to ECITBCO-S6 detail the factual, procedural and theoretical knowledge that the candidate must acquire and also demonstrate on plant, equipment and systems of their selected discipline:

- Relevant national and industry health, safety and environmental standards and legislation and those relevant to the specific disciplines, as appropriate.
- Site safety responsibilities, own and others including: first aid procedures, evacuation procedures and contingency reporting.
- Types and effects of hazards, safety assessment methods and techniques and how to minimise associated risks.
- Relationships: importance of understanding of work relationship problems.

- Lines of communication, reporting lines and levels of responsibility in the workplace.
- The importance of ethical working and the sustainable use of resources including: codes of conduct, minimising the impact of work on the environment.
- The importance of questioning and demonstrating initiative in day-to-day problem solving.
- Procedures and related documentation and responsibility for reporting and following procedures.
- Preparation and reinstatement of the work area including: preparing, checking and handling material; types of equipment and the related care and control procedures; storing and disposing of material; handing over plant and equipment.

2.3 Plant, equipment and systems specific fabrication and installation knowledge and skills

Units IPS-PF02S to IPS-PF10S are discipline specific and the candidate must demonstrate their application of knowledge and skills on structures, plant and equipment.

The candidate is required to effectively demonstrate the theoretical, factual and procedural knowledge and practical skills of the following units that comprise the qualification in accordance with the stated assessment criteria and scope of assessment provided in this document:

ECITBCO-S1	Contribute to effective working relationships in engineering construction
ECITBCO-S2	Work safely and minimise risk in engineering construction
ECITBCO-S4	Work with environmental sustainability in mind
ECITBCO-S5	Interpret and follow documentation and procedures
ECITBCO-S6	Use digital technology and information effectively and securely
IPS-PF02S	Assemble pipework components to meet required specification in engineering construction
IPS-PF03S	Position and install pipework and related plant, equipment and systems in engineering construction
IPS-PF06S	Test the performance and condition of pipework in engineering construction
IPS-PF07S	Form pipework materials by applied pressure to specification in engineering construction
IPS-PF08S	Dismantle pipework components and assemblies in engineering construction
IPS-PF09S	Shape pipework components by material removal using hand tools in engineering construction
IPS-PF10S	Mark out to the required specification in engineering construction

2.3 Further information

For further information either visit the ECITB website or contact the ECITB Awarding Body:

Email: Qualifications@ecitb.org.uk
Website: www.ecitb.org.uk

2.4 Units

ECITB unit:	**ECITBCO-S1 Contribute to effective working relationships in engineering construction**
Qualifications Scotland Accreditation unit code: UT09 04	
SCQF level: 5 **Credit value:** 6	
Unit purpose and aim: Establish and maintain productive working relationships 1. Deal with disagreements in an amicable and constructive way so that good relationships are maintained 2. Keep others informed about work plans or activities which affect them 3. Seek assistance from others in a polite and courteous way without causing undue disruption to normal work activities 4. Respond in a timely and positive way when others ask for help or information	
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)	

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand lines of communication and responsibilities	K1.1 Explain the individual's responsibilities and the responsibilities of others within the work location
	K1.2 Describe the lines of communication that exist within the individual's working environment and explain the agreed procedure for passing information
LO2 Understand the importance of creating and maintaining working relationships	K2.1 Describe the individual's responsibilities for creating and maintaining working relationships and explain why it is important to do so

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Understand problems affecting relationships	K3.1 Describe different problems that can affect relationships, and the actions that can be taken to deal with specific difficulties
LO4 Establish and maintain productive working relationships	S4.1 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
	S4.2 Treat everyone fairly and with respect and support the creation of a welcoming and inclusive environment for everyone
LO5 Deal with disagreements in an amicable and constructive way so that effective relationships are maintained	S5.1 Maintain effective relationships by: a. Resolving disagreements in a constructive and objective manner b. Escalating if needed c. Reporting, in accordance with procedures
LO6 Seek assistance from others in a polite and courteous way without causing undue disruption to normal working activities	S6.1 Maintain effective relationships by seeking assistance from others in a polite and courteous manner
LO7 Respond in a timely and positive way when others ask for help or information	S7.1 Follow relevant work or professional codes of conduct, as appropriate for their role
	S7.2 Requests for help and information to identify exactly what is required
	S7.3 Resolve problems within the limits of their authority as they arise
	S7.4 Respond in a positive way when other ask for help or information

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Such methods may include discussions about product evidence and questioning.

	Assessment Criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. Knowledge criteria will be assessed through a variety of methods which will include technical discussions and online knowledge tests. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**ECITBCO-S2 Work safely and minimise risk in engineering construction**
Qualifications Scotland Accreditation unit code: UT55 04	
SCQF level: 6 **Credit value:** 10	

Unit purpose and aim:

1. Work safely at all times, complying with health and safety and other relevant regulations and guidelines
2. Call for expert help in the event of contingencies occurring, using warning systems as appropriate
3. 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
4. Follow shutdown and evacuation procedures promptly and correctly
5. Deal safely with dangers that can be contained using appropriate equipment and materials, in accordance with organisational policy and procedures

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, the learner may be expected to refer to others for final authorisations, even though they remain responsible for identifying and implementing decisions.

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), NOS ECITB (C0 4)

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	K1.1 Explain the requirements of health and safety legislation

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.2 Explain the consequences for employers and employees of not fulfilling their legal health and safety responsibilities
	K1.3 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.4 Describe hazards and the associated risk and their responsibility in relation to dealing with and reporting hazards including what risks there are in relation to health and safety
LO2 Understand personal site safety responsibilities	K2.1 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
	K2.2 Explain how to get information relating to the safe use of equipment and how to ensure the equipment is used safely
	K2.3 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
	K2.4 Explain different types of vibration injuries and explain how they can be prevented
	K2.5 Explain the importance of personal behaviour in maintaining workplace standards
	K2.6 Describe the checks which are needed to make sure that portable electrical appliances are safe to use
	K2.7 Describe what a safe system for electrical isolation should include and why low voltage is generally safer in relation to health and safety
	K2.8 Explain the risks from overhead cables and how to control them
	K3.1 Explain who is responsible for ensuring that equipment is checked and safe to use

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Understand others' site safety responsibilities	K3.2 Explain the need for health and safety training for themself and others in a workplace and the procedures for requesting training
	K3.3 Explain the consequences for employers and employees of not fulfilling their legal health and safety responsibilities
LO4 Understand first aid procedures	K4.1 Explain relevant first aid procedures that typically relate to the workplace
	K4.2 Describe where information, competent assistance and local first aid facilities can be obtained
LO5 Understand and follow evacuation procedures	K5.1 Explain relevant evacuation procedures that typically apply in the workplace
	K5.2 Describe where information and competent assistance for evacuation can be obtained
LO6 Follow contingency reporting procedures	S6.1 Complete contingency reporting documentation following relevant systems to workplace activities
LO7 Follow appropriate reporting lines and procedures	S7.1 Comply with the various reporting lines and procedures that apply in the working environment

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Such methods may include discussions about product evidence and questioning.

	Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. Knowledge criteria will be assessed through a variety of methods which will include technical discussions and online knowledge tests. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**ECITBCO-S4 Work with environmental sustainability in mind**
Qualifications Scotland Accreditation unit code: UT56 04	
SCQF level: 6 **Credit value:** 6	

Unit purpose and aim: This unit has been designed to assess learner knowledge in being able to:

1. Explain how to establish and maintain environmental sustainability
2. Explain how to deal with environmental considerations
3. Explain how to keep others informed about environmental plans or activities which affect them
4. Describe how to minimise use of resources and production of waste materials
5. Understand how to store re-usable materials and dispose of waste materials
6. Explain how to report environmental information, improvements, concerns or incidents

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 5)

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Work in a way that contributes to environmental sustainability	K1.1 Describe how to reduce impact on the environment by following environmentally safe working practices and taking precautions to minimise environmental damage
LO2 Understand the move towards a net zero future, in accordance with their organisation's policies and targets	K2.1 Explain how to deal effectively with resources taking environmental considerations into account
	K2.2 Describe how to minimise use of resources, where possible
	K2.3 Describe how to minimise the production of waste wherever and however possible
	K2.4 Explain the correct disposal of waste materials

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	K2.5 Explain how to store re-usable materials and equipment in accordance with procedures
LO3 Understand reporting lines and responsibility	K3.1 Explain how to report any environmental incidents, concerns or improvements that are identified

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Such methods may include discussions about product evidence and questioning. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. Knowledge criteria will be assessed through a variety of methods which will include technical discussions work reports or written answers to questions. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**ECITBCO-S5 Interpret and follow documentation and procedures**
Qualifications Scotland Accreditation unit code: UT23 04	
SCQF level: 6 **Credit value:** 6	

Unit purpose and aim: This unit has been designed to assess learner competence in being able to:

1. Interpret and follow documented procedures
2. Understand the principles of documentation
3. Understand the principles of quality control
4. Understand the principles of legal documentation
5. Understand the conventions of documentation and information communication
6. Understand the hazards arising from tools and equipment

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)

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand the principles and conventions of documentation	K1.1 Explain the principles, uses and conventions of engineering documents
	K1.2 Describe the relevance of worksheets, technical drawings and related specifications
	K1.3 Describe the relationship between details and diagrams in engineering drawings and specifications
	K1.4 Explain the diagrams and key information in catalogues and equipment manuals
	K1.5 Describe the sources of manufacturer or additional relevant information

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	K1.6 Explain the use of plans and schedules
	K1.7 Describe procedures and authorisations related to tasks undertaken
	K1.8 Describe quality control and documentation procedures
	K1.9 Describe the importance of checking and confirming procedures and documentation
	K1.10 Describe the importance of signing documentation and the legal consequences and accountabilities
	K1.11 Describe reporting of tasks undertaken
	K1.12 Explain actions to take in the event of variations to the plan of work
	K1.13 Describe reporting lines and procedures
LO2 Understand the hazards arising from tools and equipment	K2.1 Describe the hazards that can arise from preparing work materials, tools and equipment
	K2.2 **Describe the hazards that can arise from incorrectly reinstating work materials, tools and equipment**
LO3 Interpret and follow documentation and procedures	S3.1 Check the revisions, date and validity of documentation
	S3.2 Follow specifications, engineering drawings and work instructions
	S3.3 Interpret and follow equipment manuals, relevant plans and schedules
	S3.4 Follow authorisation procedures, quality procedures and related documentation
	S3.5 Complete all relevant documentation correctly
	S3.6 Report defects or variations and any instance where the activity cannot be met
	S3.7 Check that all required actions are completed, and reports are finished

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S3.8 Follow all required actions and reporting once an activity is finished and to follow appropriate handover procedures
	S3.9 Follow safety procedures, risk assessments and methods of work when preparing and reinstating the work area, materials, tools and equipment.
	S3.10 Reinstate the work area, materials, tools and equipment

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Such methods may include discussions about product evidence and questioning. Assessment Criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. Knowledge criteria will be assessed through a variety of methods which will include technical discussions and online knowledge tests. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**ECITBCO-S6 Use digital technology and information effectively and securely**
Qualifications Scotland Accreditation unit code: UT54 04	
SCQF level: 5 **Credit value:** 2	
Unit purpose and aim: This unit has been designed to assess learner competence in being able to interpret and use basic digital information and technology securely.	
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)	

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand basic digital information and technology	K1.1 Explain awareness of the need for security of digital data and technology use in the workplace, the reasons for and importance of this, including relevant legal aspects
	K1.2 Describe simple permission levels related to data access
	K1.3 Explain awareness of the requirement of passwords in data security and how to manage passwords effectively, as appropriate for their role
	K1.4 Describe how to use software and digital systems necessary for their role
	K1.5 Describe how to use digital technology and equipment necessary for their role
	K1.6 Describe awareness of how to handle digital content and online information, as relevant to their role

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	K1.7 Describe appreciation of how to conduct basic searches online, safely and appropriately to find digital information related to their role
	K1.8 Describe awareness of how to verify information, related to the task in hand and job role, is appropriate and correct
	K1.9 Describe how to learn and work remotely using IT
	K1.10 Explain awareness of the benefits of e-learning and immersive technology for training and professional development and how to use and access this
LO2 Interpret and use basic technology and information	S2.1 Use basic digital information and technology securely in accordance with company procedures
	S2.2 Search, select and use work-related digital information, as requested by a supervisor, to support delivery of work-related tasks
	S2.3 Handle standard digital content in order to communicate information, as required for their role in accordance with requests or procedures
LO3 Comprehend standard digital technology and use effectively and securely	S3.1 Use the basic features of relevant digital technology and equipment, as relevant to their role
	S3.2 Use standard technology to save and send digital information, in accordance with procedures
	S3.3 Access appropriate help and support when problems with digital technology arise
	S3.4 Use a range of available technology for training and professional development

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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

	or realistic workplace environment. Such methods may include discussions about product evidence and questioning. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. Knowledge criteria will be assessed through a variety of methods which will include technical discussions work reports or written answers to questions Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF02S Assemble pipework components to meet required specification in engineering construction**
Qualifications Scotland Accreditation unit code: UT01 04	
SCQF level: 6 **Credit value:** 26	

Unit purpose and aim: This unit has been designed to assess learner competence in being able to:

Assemble pipework components to meet specification in the engineering construction industry. The unit is about assembling, securing and checking components using the appropriate methods, techniques, connectors and securing devices.

In the context of this unit, responsibility extends to the interpretation of given specifications, selecting appropriate components choosing and/or modifying procedures to achieve the best possible result in the conditions applying. In some cases, the learner may still be expected to refer to others for final authorisation.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS ECIIPSP-02 and IPSP-02

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from pipework assembly activities
	K1.4 Describe reporting lines and procedures
	K2.1 Describe methods and requirements for preparation and reinstatement work

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO2 Understand work area, material and equipment preparation and reinstatement requirements for assembling pipework components to meet specification	K2.2 Explain the consequences of incorrectly preparing or reinstating the work area, materials and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures
	K2.4 Describe methods and requirements for preparation and reinstatement of the work area, materials and equipment

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Understand the tools, terminology, techniques and practices for assembling pipework components to meet specification	K3.1 Explain the principles, uses and conventions of engineering drawings and related specifications
	K3.2 Describe assembly methods and techniques
	K3.3 Explain the techniques for foreign material exclusion and the importance of this
	K3.4 Describe compliance checking methods and techniques
	K3.5 Describe how to identify defects in pipework components
	K3.6 Explain the implications of faulty pipework components and the actions to take if discovered
	K3.7 Describe quality control procedures and documentation procedures
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Ensure that consumables are as specified and fit for purpose

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S5.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.5 Ensure the materials are prepared to the required procedure
	S5.6 Ensure completion of preparations in line with organisational procedures
	S5.7 Deal promptly and effectively with problems and report those that cannot be solved
LO6 Assemble pipework components to meet specification	S6.1 Follow relevant instructions, assembly drawings and specifications
	S6.2 Ensure the specified components are available and meet quality standards
	S6.3 **Use correct tools and techniques to assemble the pipework components in their correct positions**
	S6.4 **Undertake foreign material exclusion procedures**
	S6.5 **Assemble the components in the correct positions using approved methods**
	S6.6 **Secure pipework components using the specified connectors and securing devices**
	S6.7 Check the completed assembly to ensure that all operations have been completed and meets the specification
LO7 Carry out the necessary actions after completing assembling pipework components to meet specification	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.3, S6.4, S6.5 & S6.6** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF03S Position and install pipework and related plant, equipment and systems in engineering construction**
Qualifications Scotland Accreditation unit code: UT33 04	
SCQF level: 7 **Credit value:** 20	

Unit purpose and aim:

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

Position and install pipework in the engineering construction industry. The unit is about installing, positioning and securing equipment and components in accordance with the specification. It also includes ensuring that all necessary connections to equipment have been completed to the specification.

In the context of this unit, responsibility extends to the interpretation of specifications, selecting and modifying techniques and procedures to achieve the best possible result in the conditions applying. In some case, the learner may still be expected to refer to others for final authorisation, even though they remain responsible for identifying and implementing decisions.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS ECIIPSP-03 and IPSP-03

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from installing pipework
	K1.4 Describe reporting lines and procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO2 Understand work area, material and equipment preparation and reinstatement requirements for the positioning and installation of pipework	K2.1 Describe methods and requirements for preparation and reinstatement work area, material and equipment
	K2.2 Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Understand the tools, terminology, techniques and practices for the positioning and installation of pipework	K3.1 Explain the principles, uses and conventions of engineering drawings and related specifications
	K3.2 Describe positioning and installation methods and techniques
	K3.3 Explain the techniques for foreign material exclusion and the importance of this
	K3.4 Describe compliance checking methods and techniques
	K3.5 Describe how to identify defects in positioning and installation
	K3.6 Explain the implications of faulty pipework components and the actions to take if discovered
	K3.7 Describe quality control procedures and documentation procedures
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Ensure that consumables are as specified and fit for purpose

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S5.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.5 Ensure the materials are prepared to the required procedure
	S5.6 Ensure completion of preparations in line with organisational procedures
	S5.7 Deal promptly and effectively with problems and report those that cannot be solved
LO6 Position and install pipework	S6.1 Follow relevant drawings and specifications for the installation being carried out
	S6.2 Use the correct tools and equipment for the installation operations and check they are in a safe useable condition
	S6.3 **Ensure temporary support systems are in place for the task at hand**
	S6.4 **Install, position and secure the equipment and components in line with specification**
	S6.5 **Ensure foreign material exclusion procedures are carried out**
	S6.6 **Ensure all necessary connections to the equipment are complete**
	S6.7 **Check that the installations are complete, and all components are free from damage**
	S6.8 **Ensure that the pipework installation is protected from the environment and potential damage**
	S6.9 Deal promptly and effectively with problems and report those that cannot be solved
LO7 Carry out the necessary actions after completing the positioning and installation of pipework	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials
	S7.2 Complete all necessary documentation

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.3, S6.4, S6.5, S6.6, S6.7 & S6.8** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF06S Test the performance and condition of installed pipework in engineering construction**
Qualifications Scotland Accreditation unit code: UT52 04	
SCQF level: 6 **Credit value:** 9	

Unit purpose and aim:

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

Test the performance and condition of installed pipework, in the engineering construction industry. The unit is about setting up and carrying out tests using approved procedures and within the agreed timescales. It also involves recording and reviewing results and taking appropriate action.

In the context of this unit, responsibility is limited to working within a detailed specification and following clearly defined procedures. In some cases, the learner may still be expected to refer to others for final authorisation, even though responsibility for identifying and implementing decisions remains with them. Note: This standard does not deal with commissioning.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS ECIIPSP-06 and IPS-06

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from testing operations
	K1.4 Describe reporting lines and procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO2 Understand work area, material and equipment preparation and reinstatement requirements for testing the performance and condition of installed pipework	K2.1 Describe methods and requirements for preparation and reinstatement work area, material and equipment
	K2.2 Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Understand the tools, terminology, techniques and practices for testing the performance and condition of installed pipework	K3.1 Explain the principles and uses of engineering test specifications, plans and schedules
	K3.2 Explain the selected method and procedure for inspecting and testing the performance and condition of pipework systems
	K3.3 Describe the anomalies that may occur during testing and what actions should be taken
	K3.4 Describe set up and calibration of equipment and authorisation procedures
	K3.5 Describe testing and analysis methods and procedures
	K3.6 Describe environmental controls relating to testing
	K3.7 Explain the techniques of foreign material exclusion on pipework and the importance of this
	K3.8 Describe reporting documentation and procedures
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Ensure that consumables are as specified and fit for purpose

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S5.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.5 Ensure completion of preparations in line with organisational procedures
	S5.6 Deal promptly and effectively with problems and report those that cannot be solved
LO6 Test the performance and condition of installed pipework	S6.1 Follow the correct preparation procedures for use of tools and equipment
	S6.2 **Establish the required performance criteria for the pipework being tested**
	S6.3 **Set up and carry out tests within the agreed timescales**
	S6.4 **Perform testing taking care to exclude foreign matter**
	S6.5 **Record the tests in the appropriate format**
	S6.6 Deal promptly and effectively with problems and report those that cannot be solved
LO7 Carry out the necessary actions after completing testing the performance and condition of installed pipework	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials
	S7.2 Review the test data and check that it is within the expected parameters, accurate and thorough
	S7.3 Complete all necessary documentation

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.2, S6.3, S6.4 & S6.5** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF07S Form pipework materials by applied pressure to specification in engineering construction**
Qualifications Scotland Accreditation unit code: UT21 04	
SCQF level: 6 **Credit value:** 17	

Unit purpose and aim:

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

Form pipework components by manually applied pressure in the engineering construction industry. The unit is about forming materials using approved tools, equipment and techniques. It also involves checking that all the required forming operations have been completed to the specification.

In the context of this unit, responsibility extends to the selection and modification of techniques to achieve the required result as efficiently, safely and cost effectively as possible. In some cases, the learner may still be expected to refer to others for final authorisations, even though they remain responsible for identifying and implementing decisions.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS-ECIIPSP-07

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from forming operations
	K1.4 Describe reporting lines and procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO2 Understand work area, material and equipment preparation and reinstatement requirements for shaping pipework components by manually applied pressure	K2.1 Describe methods and requirements for preparation and reinstatement work area, material and equipment
	K2.2 Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Understand work area, material and equipment preparation and reinstatement requirements for shaping pipework components by manually applied pressure	K3.1 Explain the principles, uses and conventions of engineering drawings and related specifications
	K3.2 Describe pressure forming methods and techniques
	K3.3 Explain the techniques for foreign material exclusion and the importance of this
	K3.4 Describe compliance checking methods and technique
	K3.5 Describe pressure forming defects and quality control procedures
	K3.6 Explain the implications of faulty pipework components and the actions to take if discovered
	K3.7 Describe quality control procedures and documentation procedures
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Ensure that consumables are as specified and fit for purpose

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S5.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.5 Ensure the materials are prepared to the required procedure
	S5.6 Ensure completion of preparations in line with organisational procedures
	S5.7 Deal promptly and effectively with problems and report those that cannot be solved
LO6 Form pipework components by manually applied pressure	S6.1 Follow the correct component drawing and specifications for the component to be produced
	S6.2 **Plan the forming procedure to ensure required results are achieved**
	S6.3 **Use the correct tools and equipment for the pressure forming operations**
	S6.4 **Form the materials to the required specification using appropriate tools, methods and techniques**
	S6.5 **Check that the forming operations have been completed in line with the specification and standard**
	S6.6 Deal promptly and effectively with problems and report those that cannot be solved
LO7 Carry out the necessary actions after completing forming pipework components by manually applied pressure	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials
	S7.2 Complete all necessary documentation

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment.

	Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.3, S6.4 & S6.5** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF08S Dismantle pipework components and assemblies in engineering construction**
Qualifications Scotland Accreditation unit code: UT19 04	
SCQF level: 7 **Credit value:** 8	

Unit purpose and aim:

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

Dismantle pipework in the engineering construction industry. The unit is about dismantling and storing equipment and components in accordance with the specification. It also includes ensuring that all necessary connections to equipment have been completed to the specification.

In the context of this unit, responsibility extends to the interpretation of specifications, selecting and modifying techniques and procedures to achieve the best possible result in the conditions applying. In some case, the learner may still be expected to refer to others for final authorisation, even though they remain responsible for identifying and implementing decisions.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS ECIIPSP-08

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from dismantling components and assemblies
	K1.4 Describe reporting lines and procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO2 Understand work area, material and equipment preparation and reinstatement requirements for the dismantling of pipework	K2.1 Describe methods and requirements for preparation and reinstatement work area, material and equipment
	K2.2 Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures
LO3 Understand work area, material and equipment preparation and reinstatement requirements for the dismantling of pipework	K3.1 Explain the principles, uses and conventions of engineering drawings and related specifications
	K3.2 Describe dismantling methods and techniques
	K3.3 Explain controlled and safe methods of stored energy discharge
	K3.4 Explain the techniques for foreign material exclusion and the importance of this
	K3.5 Describe how to identify removed pipework components for reuse
	K3.6 Describe how to identify defects in dismantling components and assemblies
	K3.7 Explain the implications of faulty pipework components and the actions to take if discovered
	K3.8 Describe the correct disposal of Waste, redundant and obsolete material
	K3.9 Describe quality control procedures and documentation procedures
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Ensure that consumables are as specified and fit for purpose
	S5.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.5 Ensure the materials are prepared to the required procedure
	S5.6 Ensure completion of preparations in line with organisational procedures
	S5.7 Deal promptly and effectively with problems and report those that cannot be solved
LO6 Dismantle pipework components	S6.1 Follow relevant drawings and specifications for the dismantling being carried out
	S6.2 Mark the pipework components for the dismantling operations
	S6.3 **Ensure all necessary isolations and disconnections to the equipment are complete**
	S6.4 **Ensure stored energy is released safely and support systems are in place**
	S6.5 **Dismantle the equipment and components in line with specification**
	S6.6 **Check that the dismantling is complete and all components are free from damage and protected from the environment**

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S6.7 **Determine the conditions of the removed components against specification**
	S6.8 Deal promptly and effectively with problems and report those that cannot be solved
LO7 Carry out the necessary actions after completing the dismantling of pipework	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials
	S7.2 Store re-usable materials, consumables and equipment in accordance with appropriate procedures
	S7.3 Complete all necessary documentation

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.2, S6.3, S6.4, S6.5, S6.6 & S6.7** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF09S Shape pipework components by material removal using hand tools in engineering construction**
Qualifications Scotland Accreditation unit code: UT44 04	
SCQF level: 6 **Credit value:** 17	

Unit purpose and aim:

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

Shape pipework components by material removal using hand tools in the engineering construction industry. The unit is about shaping pipework components using the appropriate methods, techniques and equipment.

In the context of this unit, responsibility extends to the interpretation of given specifications, selecting techniques and making variations to procedures at their discretion during the course of shaping, to achieve the best possible result in the conditions applying. In some cases, the learner may still be expected to refer to others for final authorisation, even though they remain responsible for identifying and implementing decisions.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS ECIIPSP-09 and IPS-S1

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from shaping pipework components
	K1.4 Describe reporting lines and procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO2 Understand work area, material and equipment preparation and reinstatement requirements for shaping pipework components by material removal using hand tools	K2.1 Describe methods and requirements for preparation and reinstatement work area, material and equipment
	K2.2 Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO3 Explain how to comply with the various reporting lines and procedures that apply in the working environment	K3.1 Explain the principles, uses and conventions of engineering drawings and related specifications
	K3.2 Describe the tools and techniques necessary to carry out shaping components
	K3.3 Describe compliance checking methods and techniques
	K3.4 Describe how to identify defects in pipework components
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Ensure that consumables are as specified and fit for purpose
	S5.4 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.5 Ensure the materials are prepared to the required procedure
	S5.6 Ensure completion of preparations in line with organisational procedures
	S5.7 Deal promptly and effectively with problems and report those that cannot be solved

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO6 Shape pipework components by material removal using hand tools	S6.1 Obtain the required materials and check the dimensions, quantity and quality
	S6.2 Follow relevant specifications for the component to be produced
	S6.3 **Shape the materials using appropriate methods and techniques**
	S6.4 **Identify and rectify pipework defects**
	S6.5 **Check that the required shaping has been completed to the specification**
	S6.6 Deal promptly and effectively with problems and report those that cannot be solved
LO7 Carry out the necessary actions after completing shaping pipework components by material removal using hand tools	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials
	S7.2 Complete all necessary documentation

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.3, S6.4 & S6.5** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.

ECITB unit:	**IPS-PF10S Mark out to the required specification in engineering construction**
Qualifications Scotland Accreditation unit code: UT25 04	
SCQF level: 6 **Credit value:** 14	

Unit purpose and aim:

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

Mark out to the required specification for pipefitting activities in the engineering construction industry. The unit is about preparing for and carrying out marking out using appropriate equipment and methods. It also involves checking that the marking out meets specifications.

Details of the relationship between the unit and relevant National Occupational Standards or other professional standards or curricula (if appropriate)

Derived from NOS ECIIPSP-10 and IPSP-04

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
LO1 Understand health and safety legislation, regulations and safe working practices and procedures	K1.1 Explain the requirements of health and safety legislation
	K1.2 Explain the purpose and nature of risk assessments, method statements, and permit to work systems, and the relevance of local procedures and guidance notes
	K1.3 Describe the hazards and risks that can arise from marking out activities
	K1.4 Describe reporting lines and procedures
LO2 Understand work area and equipment preparation and	K2.1 Describe methods and requirements for preparation and reinstatement work area, material and equipment

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
reinstatement requirements marking out to the required specification for pipefitting activities	K2.2 Explain the consequences of incorrectly preparing or reinstating the work areas, material and equipment
	K2.3 Describe the types of tools and equipment used and explain the care and control procedures
LO3 Understand the tools, terminology, techniques and practices for marking out to the required specification for pipefitting activities	K3.1 Explain the principles, uses and conventions of engineering drawings and related specifications
	K3.2 Describe marking out tools, equipment, methods and techniques
	K3.3 Describe surface preparation requirements
	K3.4 Explain geometrical construction methods
LO4 Work safely and minimise risk at all times	S4.1 Identify a range of hazards
	S4.2 Take appropriate action to minimise the risk from hazards
	S4.3 Refer safety related matters to appropriate persons as required
	S4.4 Work in accordance with relevant sections of the Health and Safety at Work Act and its associated regulations
	S4.5 Work in accordance with the requirements of risk assessments and permit to work systems
LO5 Prepare work area, materials and equipment	S5.1 Ensure that the work environment is suitable for the work activities to be undertaken
	S5.2 Ensure that service supplies are connected and ready for use
	S5.3 Obtain and prepare the appropriate tools and equipment and ensure they are in a safe and usable condition
	S5.4 Ensure completion of preparations in line with organisational procedures

Learning outcomes The candidate will:	**Assessment criteria** The candidate can:
	S5.5 Deal promptly and effectively with problems and report those that cannot be solved
LO6 Mark out to the required specification for pipefitting activities	S6.1 Obtain and use the correct information for marking out
	S6.2 **Prepare suitable datum and marking out surfaces**
	S6.3 **Mark out using approved methods**
	S6.4 **Check the marking out complies with the specification**
	S6.5 Deal promptly and effectively with problems and report those that cannot be solved
LO7 Carry out the necessary actions after marking out to the required specification for pipefitting activities	S7.1 Reinstate the work area to a safe condition and correctly dispose of waste materials

Assessment requirements or guidance specified by a sector regulatory body (if appropriate)	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 or realistic workplace environment. Assessment criteria may be satisfied by observation, questioning, expert witness testimony, professional discussion or any other approved method. **Mandatory workplace observation is required for Assessment Criteria S6.2, S6.3 & S6.4** which may take the form of an expert witness testimony supported by photographic and/or video evidence. Further guidance on this ECITB unit can be found in the Qualifications Scotland Accreditation ECITB Assessment Strategy document.