ENERGY & ENVIRONMENT AWARDS

Skills for a greener world

EEA Level 2 End-point Assessment for Engineering Operative
(Maintenance; Mechanical manufacturing; Electrical and electronic; Fabrication)

Specification

QAN 610/6013/6
ST0537 V1.0 V1.1 V1.2 V1.3

Specification for

EEA L2 End-point Assessment for Engineering Operative (Maintenance; Mechanical manufacturing; Electrical and electronic; Fabrication)

QAN 610/6013/6

Updates to this specification

Version	Date first published	Section updated	Page(s)
v4.0	August 2025	Rebranded	All
v3.0	14 July 2023	New pathway introduced for Engineering Operatives working within a fabrication role	All
		K4 – Amplification and guidance updated	P12
		Edited paragraph titled ‘What are the tasks that will be covered?’	P9
		Assessment Plan V1.1 Removed ‘Who will assess the apprentice?’ which had reference to ‘A panel may consist of 2 members.’	P27
		Assessment Plan V1.1 Included the word ‘representative’.	P49
		Section 4: Resits and Retakes updated	P69
v2.0	24 May 2023	Rebranded	All
v1.0	1 March 2023	First published	All

Section 1: At a Glance EPA Summary

Qualification name	EEA Level 2 End-point Assessment for Engineering Operative
Ofqual qualification number	610/6013/6
Standard reference	ST0537
Assessment plan	V1.1
Standard title	Engineering Operative
Pathways	Option 1. Maintenance role Option 2. Mechanical manufacturing engineering role Option 3. Electrical and electronic engineering role Option 4. Fabrication role
Level	2
Gateway pre-requisites submitted to Energy & Environment Awards	Apprentice has: • achieved Level 1 English and maths; the requirement to have taken the tests for Level 2 was removed in August 2022 • achieved Level 2 Diploma in Engineering Operations (competence) • achieved Level 2 Certificate or Diploma in Engineering Operations (knowledge) • compiled and submitted a portfolio of evidence, which will underpin the professional discussion
On-programme duration	Typically 12 - 18 months
Gateway readiness	Apprentice has met all Gateway pre-requisites. Employer completes, signs and submits Gateway Eligibility Form (GER) form to Energy & Environment Awards
End-point assessment duration	Typically 3 months after the gateway
End-point assessment methods and their order	Practical skills observation (must be completed first)

	• in the apprentice's normal place of work in a suitable area away from the work place provided the apprentice can work unhindered and without gaining advantage from others OR • in a simulated environment that reflects the real working environment and realistic work situation Professional discussion • can be carried out at the employer's site, an assessment centre approved by Energy & Environment Awards OR • via video link, if a video link is used then appropriate measures must be in place to ensure Energy & Environment Awards is satisfied that the responses given are those of the Apprentices e.g. use of a 360 degree camera to allow the independent assessor to look around the room during the interview
End-point assessment methods and component grading	Practical skills observation: Fail or Pass Professional discussion: Fail, Pass or Distinction
Overall Grading	Fail, Pass or Distinction
Certification	Energy & Environment Awards request Apprenticeship completion certificates from the ESFA

Objective

The purpose of the Engineering Operative (EO) end-point assessment (EPA) is to confirm that an apprentice is fully capable of doing their job before they receive their apprenticeship certificate. It also helps to demonstrate that what an apprentice has learned can be applied in the real world.

Once the apprentice has completed the EO end-point assessment requirements successfully and has been certified they could take on the following job roles:

- Maintenance role (this role can cover either mechanical, electrical, electronic or fluid power work or a combination of them)
- Mechanical Manufacturing Engineering role
- Electrical and Electronic Engineering role

Gateway Readiness

The employer must be satisfied that the apprentice is consistently working at, or above, the level of the occupational standard. Gateway pre-requisites are listed in the summary table above.

Recognition of prior learning (RPL)

Energy & Environment Awards does not recognise any apprentice prior learning (RPL) or prior achievement (RPA) for the purpose of amending the assessment requirements of any end-point assessments.

Please refer to Energy & Environment Awards (RPL) and (RPA) policy at https://energyenvironmentawards.co.uk/policies-and-fees/

In order for Energy & Environment Awards to award an end-point assessment qualification, the apprentice must successfully complete all required assessment components with Energy & Environment Awards. This means that:

- each of the EPA components must be completed in full with Energy & Environment Awards
- where an apprentice transfers to Energy & Environment Awards from another EPAO they have to undertake the entire EPA with Energy & Environment Awards

- components of the EPA cannot be certificated in isolation
- evidence produced for the portfolio must be related to the time the apprentice is on their apprenticeship programme to demonstrate current practice
- examples used by the apprentice, during the professional discussion, must relate to the time they were on their apprenticeship programme

This does not affect the Gateway requirements which must be met in order for an apprentice to be eligible for end-point assessment.

This does not affect any reasonable adjustments that may be granted.

Section 2: End-point Assessment Components

Component 1: Practical Skills Observation:

Overview

In a practical skills observation with questions, an independent assessor observes an apprentice in their workplace or in a suitable environment away from the workplace. The task is set by the employer/provider and must be reviewed by Energy & Environment Awards for suitability before the assessment takes place. The apprentice must be allowed to demonstrate the application of the core and specific job role knowledge, skills and behaviours (KSBs) through naturally occurring evidence. Typically, this will be observed within one task but may be covered over two separate tasks if required. The independent assessor will ask questions during or after the observation. To remain as unobstructive as possible, the independent assessor will ask questions during natural breaks between tasks and after completion of work rather than disrupting the apprentice's flow.

Step-by-Step Guide

The table below provides a step-by-step guide on how the practical skills observation will be carried out:

Assessors	1 independent assessor approved by Energy & Environment Awards.
Practical Skills Observation Review Process	The practical skills observation must: • be designed to meet the requirements of the Engineering Operative standard • be planned and reviewed. To do this complete the 'Practical Skills Observation Planning Form' which is available in Supporting Documents Appendix C • be submitted to Energy & Environment Awards 1 month before the assessments are planned to take place. Energy & Environment Awards will review your completed 'Practical Skills Observation Planning Form' to ensure the apprentice's normal place of work or the simulated environment that reflects the real working environment is a

	suitable area for the assessment and the task(s) planned are fit for purpose
Practical structure	The total assessment time is 2 hours +/- 10 minutes and this includes questioning. Up to 3 apprentices may be assessed at the same time if it is possible for the assessor to see all apprentices, and an apprentice cannot gain advantage from seeing what the other apprentice is doing or hearing the questions being asked. The independent assessor will typically ask between 3-6 open questions to assess the related underpinning knowledge. There may be breaks during the practical skills observation to allow the apprentice to move from one location to another and for meal/comfort breaks. During these breaks, the clock will be stopped and then restarted to ensure that the assessment duration is not reduced.
Where will the assessment take place?	The practical skills observation must be conducted: • in the apprentice's normal place of work in a suitable area away from the workplace provided the apprentice can work unhindered and without gaining advantage from others OR • in a simulated environment that reflects the real working environment and realistic work situation
What are the tasks that will be covered?	The assessment task must allow the apprentice to undertake the activities. For further details refer to 'Knowledge, Skills and Behaviours (KSBs) Coverage' below pages 11-25.
Who sets the task(s)?	Employer or training provider set the task(s) based on Energy & Environment Awards template provided within in Supporting Documents, Appendix D 'Practice Practical Skills Observation Template.' The task must provide apprentices with the opportunity to achieve all the KSBs assessed in the practical skills observation. Energy & Environment Awards will work with the employer and/or training provider to review the practical skills briefs/job task sheets which are based on the tasks described above. The 'Practical

	Skills Observation Planning Form', along with the task(s) or any other supporting documents must be reviewed by Energy & Environment Awards before the assessment takes place as per the 'practical skills observation review process', see above. The employer/training provider will give the apprentice the brief at the start of the practical skills observation.
What resources can the apprentice use?	Equipment and resources needed for the observation must be: • provided by the employer or training provider • the tools, equipment and PPE required for the job • in good and safe working condition Work instructions/manuals must be available in hard copy or electronically.
How many questions will the apprentice be asked?	During the practical observation the independent assessor: • will ask between 3-6 open questions to assess the related underpinning knowledge • may ask follow-up questions in order to seek clarification
What will the questions focus on?	Underpinning knowledge and/or skills and behaviours where an opportunity to observe them has not occurred.
Grading	Fail or Pass.

Practical Skills Observation Knowledge, Skills and Behaviours (KSBs) coverage

The practical skills observation with questioning covers:

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
Core Knowledge **K1** How to obtain the necessary job instructions, engineering drawings and specifications and how to interpret them	• Know how and where to obtain the various documents they will be using such as drawings, planning documents, maintenance records, technical manuals • Know how to check that the information is current and valid • Know who to report to should the information be inaccurate, missing or damaged • Know how to interpret the technical information and any symbols, abbreviations and conventions used. Check that any materials used are available and to the correct specification
K3 Their individual roles and responsibilities within the organisation and the flexibility required to support the achievement of company targets	• Understand their role is relation to ensuring a safe working area and safe practices and procedures. HASAW, PUWER and COSHH • Know the correct workwear, tools and equipment required for their role

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
	• Understand the importance of applying the appropriate behaviours such as time keeping, team working and communication • Understanding the importance of timescales, quality and integrity • Understand their roles and responsibilities with regards to personal development • Understand the need for flexibility and react positively to any changes
K4 Engineering operational practices, processes and procedures	• Identify the specific operational practices covering safety, such as permits to work, isolations, testing for dead, risk assessments, PPE, accident reporting, fire and emergency evacuation produces • Quality such as handover of completed work, testing, fault reporting, recommendation and suggestions, maintenance strategies and waste disposal • Identify specific operational procedures such as maintenance procedures, isolation procedures, safe

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
	working practices, inspection procedures, test procedures and defect reporting procedures • Identify specific operational processes such as work flows, manufacturing process (which may include material selection, manufacturing plan, assembly and quality control), maintenance process (which may include types of maintenance, servicing schedules, frequency of maintenance, fault recording and reporting), assembly process to include safety measures and testing
K5 Potential problems that can occur within the engineering operations and how they can be avoided	• Be able to identify potential problems that can occur which affect the engineering activity such as problems with tools and equipment, timescales, quality, safety, documentation, people, processes and procedures • Know who to report to should they not be able to resolve the problem
Option 1: Maintenance Role Specialist Knowledge **K6** Maintenance planning	• Understand the main elements of planned maintenance such as type of maintenance, equipment/plant shut down, risk assessments, permits to work, communication and coordination, documentation, tools and equipment required

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
	• Understand the different maintenance frequencies and why they are conducted such as cleaning and lubrication, adjustments, replenishment, reconditioning/overhaul, parts replacement (lifed items), modification, corrective maintenance, condition monitoring • Understand the estimated cost of maintenance and factors that affect this such as personnel, loss of production, contractors/specialist roles, spares, hire of tools and equipment.
K8 Specific safe working practices, maintenance procedures and environmental regulations that need to be observed	• Understand the specific safe working practices and policies such as permits to work, risk assessments, guards and barriers, fire and emergency evacuation, location of first aid, correct inspection and use of PPE, incident/accident reporting, manual handling and safe lifting using mechanical means and slings • Understand the contents and the need to follow Standard Maintenance Procedures such as the PPE required, to steps to follow, safety and environmental hazards, tools and equipment required, documents and diagrams, measurements, standards, tolerances, personnel, time, recording of results/comments and return to service

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
	• Identify the relevant safety legislation for them to follow dependant of the situation such as HASAWA, LOLER, PUWER, Working at Height regs, Confined Spaces Regs, COSHH and Manual Handling • Understand COSHH and the correct method of disposal of substances such as grease and oil
Option 2: Mechanical Manufacturing Role Specialist Knowledge **K9** Specific equipment operating parameters	• Be familiar with the specific equipment operating parameters relevant to their industry/job role such as speeds, pressures, temperatures, vibration, running time
K11 Specific quality specifications for mechanical manufacturing operations	• Be aware of and identify/measure specific quality specifications for their operations such as linear dimensions, internal/external diameters, surface finish, hole size and position, thread size and fit, angles, squareness • Be able to use measuring equipment such as micrometers, verniers, rulers and protractors
Option 3: Electrical and Electronic Engineering Role Specialist Knowledge **K12** Cable types and where they should be used	• Be aware of the different available cable types such as single core, double core, PVC twin and earth, data, communication, fibreoptic, screened, armoured, coaxial,

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
	wiring looms and the applications where these should be used
K14 Specific safe working practices, isolation procedures and safe reinstating of equipment/system that need to be observed	• Be familiar with the regulations and legislation relevant to their job role and sector including The Electricity at Work regs, HSE GS38, safe isolation procedures, BS7671 • Be aware of and follow safe working practices such as the use of Permits to Work, Risk Assessments, safe isolation, testing for dead, returning to service procedures
Option 4: Fabrication Role Specialist Knowledge **K15** Specific marking out and preparation techniques	• Extract and use information from engineering drawings and related specifications, including symbols and conventions to appropriate standards in relation to the work undertaken • Interpret first and third angle drawings, imperial and metric systems of measurement, workpiece reference points and system of tolerancing • Prepare the materials in readiness for the fabrication activity. Ensuring that the material is free from excessive surface contamination, such as rust, scale, paint, oil/grease, and moisture. Ensuring the edges to be joined are correctly prepared, such as made flat, square or bevelled

Practical Skills Observation Elements: Knowledge	Amplification and Guidance (where required)
	• Use dimensional measurements tools such as calipers, micrometers and rulers to accurately mark the dimensions of the workpiece or component • Transfer the measurements onto the material or workpiece using various instruments such as scribes, centre punches or pens • Using jigs or templates to aid marking out patterns or shapes
K17 Specific safe working practices, isolation procedures and safe reinstating of equipment or system that need to be observed	• Explain the specific safe working practices, fabrication procedures and environmental regulations that need to be observed • Explain the correct isolation procedure for the equipment or system • Explain the correct safe reinstating practices on completion of the fabrication activity such as correct alignment, installation, and security. Complete any functional testing as appropriate to ensure the equipment operates as specified • Explain how to complete appropriate documentation or records with relevant information

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
Core Skills **S1** Work safely at all times, complying with health and safety legislation, regulations, environmental compliance procedures and systems and other relevant guidelines	• Present themselves in the workplace suitably prepared for their activities • Follow all relevant health and safety legislation such as HASAW act, COSHH, PPE Regs, Manual Handling and PUWER • Comply with emergency requirements such as location of First Aider and first aid facilities, following emergency evacuation procedures, following correct procedure for accident and near miss occurrences • Recognise and control commonly-occurring hazards in the workplace • Use of correct manual handling techniques
S5 Obtain and follow the correct documentation, specifications and work instructions in accordance with time constraints and the roles and responsibilities identified for the engineering activities, extracting the necessary data/information from specification and related documentation	• Obtain and use approved sources of information to support their tasks such as drawings, diagrams, manuals, SOPs, job instructions, National and International standards • Extract the necessary data from the documentation such as tools and equipment required, dimensions, quality, finish, tolerances, maintenance requirements, quantities, time, roles and responsibilities

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
	• Complete and record any relevant technical information
S6 Select and use appropriate tools, equipment and materials to carry out the engineering operation	• Obtain the necessary tools and equipment required to carry out the task such as hand tools, specialist tools and test equipment, meters, gauges • Carry out the necessary inspection of tools and equipment to ensure there is no damage and they function correctly, check for in date calibration, PAT
S8 Work efficiently and effectively at all times maintaining workplace organisation and minimising waste	• Prepare work area and ensure that it is safe for the planned activities • Obtain all relevant documentation, tools, equipment and materials • Maintain effective working relationships with colleagues and supervisors • Apply appropriate behaviours such as teamwork, positive attitude, ethical and honest behaviours, responsibility and commitment • Work responsibly complying with Health and Safety and environmental policies and procedures. Work in a

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
	sustainable manner and ensure any waste is disposed of correctly • Ensure area is clean and tidy on completion of the activities
Option 1: Maintenance Role Specialist Skills **S9** Carryout fault location on appropriate equipment using suitable maintenance diagnostic techniques	• Use and review all relevant information relating to the faulty system/plant/equipment • Locate and identify fault using most appropriate technique such as half split, function testing, unit substitution, input/output, equipment self-diagnostics • Use correct tools, test and measurement equipment for the system such as gauges, meters, self-diagnostics, sensors
S10 Carry out maintenance activities in line with work instructions	• Dismantle, remove, replace or repair faulty components in line with company procedures on various relevant plant and equipment in accordance with their designated job role • Follow all safety precautions when conducting maintenance work such as safe isolation and dealing with stored energy

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
Option 2: Mechanical Manufacturing Engineering Role Specialist Skills **S14** Mount and set the required work holding devices	• Mount and set the required work holding device such as three jaw chuck, collet chuck, four jaw chuck and machine vice, clamps
S15 Produce individual components, sub-assemblies or completed assemblies using mechanical manufacturing techniques	• Plan machine activities • Obtain and prepare tools, materials and equipment • Mount and set work holding device, cutting tools and workpiece • Set and adjust machine speeds and feeds • Produce individual components, sub-assemblies or completed assemblies by using techniques such as milling, turning, cutting, drilling or other relevant techniques • Measure and check dimensions to ensure the work is within specification • Shut down equipment to a safe condition
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S18** Assemble and test a range of electrical components e.g. component panels, isolator switches,	• Comply with relevant Health and Safety regulations including The Electricity at Work regulations, safe systems of work, electrical isolations

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
fuses, circuit breakers, contactors, relays, rail mounted terminal blocks, etc.	• Plan electrical assembly, testing and wiring activities • Obtain and use required documentation such as diagrams, specification and components • Obtain and test appropriate tools and equipment. Check any calibrations, PAT • Assemble the components using the correct methods such as cable forming, screwed connections, soldering, cable clamping, crimping, cable supports • Position components to ensure correct location, orientation and terminations • Use the correct procedures taking into account relevant regulations such as BS7671, Electricity at Work regulations, company specific procedures, ISO standards • Use appropriate tests and equipment to ensure equipment meets specification
S19 Assemble and test a range of electronic components e.g., resistors, capacitors, diodes, transistors, etc.	• Comply with relevant Health and Safety regulations including The Electricity at Work regulations, safe systems of work, electrical isolations

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
	• Obtain and use required documentation such as diagrams, specification and components • Obtain and test appropriate tools and equipment. Check any calibrations and PAT • Safely and correctly mount and secure components such as fixed resistors, potentiometers, transistors, analogue or digital integrated circuits, switches, cables, Diodes, light emitting diodes (LEDs) protection devices, cable connectors, relays or other relevant components. • Position components to ensure correct location, orientation and terminations. • Use the correct procedures taking into account relevant regulations such as BS7671, Electricity at Work regulations, company specific procedures, ISO standards • Use appropriate tests and equipment to ensure equipment meets specification
Option 4: Fabrication Role Specialist Skills **S22** Join the materials using the appropriate methods and techniques	• Operate relevant fabrication equipment or machinery safely such as cutting equipment, saws, shears, shaping or forming equipment, presses, welding or jointing

Practical Skills Observation Elements: Skills	Amplification and Guidance (where required)
	equipment, soldering, or brazing equipment, grinders, sanders, etc. • Demonstrate a range of fabrication techniques as appropriate to the task such as welding, machining, forming, or cutting to transform raw materials into finished products or components
Option 4: Fabrication Role Specialist Skills **S23** Produce components which meet the specification requirements	• Produce components that meet the required specifications with regards to materials used, dimensions, tolerances, shape, form, function, surface finish, safety and regulatory compliance, and quality

Practical Skills Observation Elements: Behaviours	Amplification and Guidance (where required)
B1 Personal responsibility and resilience Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing time and workload and stay motivated and committed when facing challenges	• Be proactive with ensuring that they and their work area is a safe working environment and are ready to rectify or challenge any risk arising • Demonstrate the understanding to manage own responsibilities with regards to work time, quality and targets • Demonstrate the ability to stay flexible, motivated and react positively to any challenges that arise

Practical Skills Observation Roles and Responsibilities

Role	Responsibility
Independent Assessor	Provide written and verbal instructions for the practical skills observation. Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer/Training Provider	The training provider must liaise effectively with the employer to ensure the apprentice is prepared for the practical skills observation. The employer/training provider must provide the apprentice with a brief. The actual brief for the practical skills observation can be based on the outcome(s) provided by Energy & Environment Awards during the practical skills observation review. Variations are allowed to ensure apprentices do not receive identical tasks. Provide the venue for the practical skills observation which must be suitably equipped to allow the apprentice to attempt all aspects of the practical skills observation. Provide all necessary tools and equipment for the apprentice. Ensure the apprentice has access to the resources used on a daily basis. Use Energy & Environment Awards Practical Skills Observation Review Service

Role	Responsibility
	to review fitness for purpose of the assessment task.
Energy & Environment Awards	Arrange for the practical skills observation to take place, in consultation with the employer/training provider and independent assessor.

Component 2: Professional Discussion (informed by portfolio)

Overview

The purpose of the professional discussion is to allow the apprentice to showcase to the independent assessor how they carried out their role as an Engineering Operative by focussing on the knowledge, skills and behaviours listed in the step-by-step guide below. Apprentices may draw on their portfolio of evidence to support them during the professional discussion. The portfolio of evidence must be submitted to Energy & Environment Awards at least 2 weeks prior to the professional discussion.

Step-by-Step Guide

The table below provides a step-by-step guide on how the professional discussion based on the portfolio of evidence will be carried out:

Assessors	1 independent assessor approved by Energy & Environment Awards. An employer representative may attend if requested to do so by Energy & Environment Awards.
Professional discussion (informed by the portfolio) structure	**Number of questions:** Between 5-7 open questions. Additional follow up questions are allowed, to seek clarification. **Locations:** Employer's premises or a suitable venue for example a training provider's premises. **Time:** 40 minutes - The independent assessor has the discretion to increase the time of the professional discussion by up to 2 minutes, to allow the apprentice to complete their last answer. **The professional discussion will be:** • face to face or remote, as agreed • recorded in writing using the professional discussion record template provided by Energy & Environment Awards • video recorded using relevant technology such as Microsoft Teams or an audio recording device • conducted under examination conditions

	The apprentice will have access to their portfolio of evidence throughout the professional discussion. The apprentice's portfolio must be submitted to Energy & Environment Awards at least two weeks in advance of the professional discussion.
What topics will be covered?	For further details refer to 'Professional Discussion Knowledge, Skills and Behaviours (KSBs) Coverage below pages 31 – 49.
When will the portfolio of evidence be submitted and referred to?	**The portfolio of evidence**: • will be reviewed by the independent assessor before the professional discussion • can be referred to by the apprentice to illustrate their answers **Note:** the portfolio of evidence is not directly assessed **Submission:** • must be submitted to Energy & Environment Awards at least 2 weeks prior to the professional discussion
Grading	Fail, Pass or Distinction.

Portfolio of Evidence Requirements

The requirements are as follows:

The apprentice must include evidence of work:

- carried out over a period of time
- that has been carried out within the last three months of the on-programme period
- of which a minimum of 2 and no more than 3 activities carried out by the apprentice that demonstrate the KSBs

For further information see Section 5 of this Specification 'What to include in the portfolio?'

Portfolio Mapping Document

The apprentice must map their portfolio of evidence to the KSBs as this evidence will be used by the independent assessor to assess the apprentice during the professional discussion. The portfolio mapping document must be clearly referenced and included at the front of the portfolio.

For further guidance on mapping refer to:

- Section 5 Practice Guidance on portfolio of evidence and apprentice mapping
- Supporting Document, Appendix F for the 'Portfolio Mapping Document.'

How will the training provider submit the apprentice's portfolio to Energy & Environment Awards?

As part of the pre-requisite Gateway requirements the apprentice must have complied and submitted a portfolio of evidence that includes a portfolio mapping document (placed at the front of the portfolio), which the professional discussion will be based on.

The training provider must submit the portfolio of evidence to Energy & Environment Awards at least 2 weeks prior to the professional discussion.

Professional Discussion Knowledge, Skills and Behaviours (KSBs) coverage

The professional discussion based on portfolio of evidence covers:

Professional Discussion Elements: Knowledge	Amplification and Guidance (where required)
Core Knowledge **K2** Relevant statutory, quality, environmental compliance procedures/systems, organisational and health and safety regulations relating to engineering operations	• Describe their responsibilities and how they have complied with regulations and legislation including The HASAW Act 1974, and other relevant legislation and regulations such as PPE, COSHH, MHOR and PUWER
K4 Engineering operational practices, processes and procedures	• Describe how they have conducted Risk Assessments and how/where these are recorded. • Explain how they have inspected and correctly worn all appropriate PPE • Describe how they obtain and follow operational procedures such as Permits to Work, Maintenance Instructions, Safe Systems of Work, working in confined spaces and working at height
Option 1: Maintenance Role Specialist Knowledge **K6** Maintenance planning	• Describe the safety requirements to be put in place when planning maintenance • Describe the quality requirements of their maintenance activities • Describe the benefits/cost effectiveness of conducting maintenance

Professional Discussion Elements: Knowledge	Amplification and Guidance (where required)
	• Describe the maintenance requirements of the plant and equipment they are responsible for • Describe how they follow good ethical/environmental practices with waste disposal
Option 1: Maintenance Role Specialist Knowledge **K7** Diagnostic and fault-finding techniques	• Describe where they have located and identified faults using most appropriate techniques such as half split, function testing, unit substitution, input/output, equipment self-diagnostics • Explain how they have used correct tools, test and measurement equipment such as gauges, meters, self-diagnostics, sensors to diagnose and fault find on the system
Option 2: Mechanical Manufacturing Engineering Role Specialist Knowledge **K9** Specific equipment operating parameters	• Explain the specific equipment operating parameters relevant to their industry/job role such as speeds, pressures, temperatures, vibration, running time
K10 Mechanical manufacturing techniques	• Explain how they have planned the task • Obtained and prepared tools, materials and equipment • Mounted and set work holding device, cutting tools and workpiece • Set and adjusted machine speeds and feeds • Measure and checked dimensions to ensure the work

Professional Discussion Elements: Knowledge	Amplification and Guidance (where required)
	is within specification • Shut down the equipment to a safe condition
Option 3: Electrical and Electronic Engineering Role Specialist Knowledge **K12** Cable types and where they should be used	• Explain the different cable types available and where you have used these or where they should be used such as single core, double core, PVC twin and earth, data, communication, fibreoptic, screened, armoured, coaxial and wiring looms
K13 Electrical and electronic assembly and testing techniques	• Explain where they have assembled and tested electrical and electronic assemblies and how they have: ○ complied with relevant Health and Safety regulations including The Electricity at Work regulations, safe systems of work, electrical isolations ○ planned electrical assembly, testing and wiring activities ○ obtained and used required documentation such as diagrams, specification and components

Professional Discussion Elements: Knowledge	Amplification and Guidance (where required)
	○ obtained and tested appropriate tools and equipment. Checked any calibrations, PAT ○ assembled the components using the correct methods such as cable forming, screwed connections, soldering, cable clamping, crimping, cable supports ○ positioned components to ensure correct location, orientation and terminations ○ used the correct procedures taking into account relevant regulations such as BS7671, Electricity at Work regulations, company specific procedures, ISO standards ○ used appropriate tests and equipment to ensure equipment meets specification
Option 4: Fabrication Role Specialist Knowledge **K15** Specific marking out and preparation techniques	• Describe how they extract and use information from engineering drawings and related specifications, including symbols and conventions to appropriate standards in relation to the work undertaken • Describe how they Interpret first and third angle drawings, imperial and metric systems of

Professional Discussion Elements: Knowledge	Amplification and Guidance (where required)
	measurement, workpiece reference points and system of tolerancing • Describe how they prepare the materials in readiness for the fabrication activity. Ensuring that the material is free from excessive surface contamination, such as rust, scale, paint, oil/grease, and moisture. Ensuring edges to be welded are correctly prepared, such as made flat, square or bevelled • Explain how to use dimensional measurements tools such as calipers, micrometers and rulers to accurately mark the dimensions of the workpiece or component • Explain how they transfer the measurements onto the material or workpiece using various instruments such as scribes, centre punches or pens • Explain how they would use jigs or templates to aid marking out patterns or shapes
K16 Different fabrication and joining techniques	• Explain how they have operated relevant fabrication equipment or machinery safely such as cutting equipment, saws, shears, shaping or forming equipment, presses, welding or jointing equipment, soldering, or brazing equipment, grinders, sanders, etc

Professional Discussion Elements: Knowledge	Amplification and Guidance (where required)
	• Explain how they have used a range of fabrication techniques as appropriate to the task such as welding, machining, forming, or cutting to transform raw materials into finished products or components

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
Core Skills **S1** Work safely at all times, complying with health and safety legislation, regulations, environmental compliance procedures and systems and other relevant guidelines	• Work safely at all times complying with Health and Safety and Environmental legislation, regulations and guidelines
S2 Identify and deal appropriately with any risks, hazards, hazardous situations and problems that may occur within the engineering environment within the limits of their responsibility	• Identify the risks and hazards associated with your work activities to include the environment such as confined spaces, working from height and environmental conditions, tools and equipment to be used, materials and substances to be used such as fluids, oils and chemicals, any practices that do not follow laid down procedures • Know who to report to if required
S3 Demonstrate effective communication skills which include oral, written, electronic	• Create and maintain effective working relationships and behaviours such as following verbal and written

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	instructions, respond to advice in a positive manner, contribute positively to any discussions, respond positively to any changes, communicate with others using clear and concise language
S4 Complete appropriate documentation accurately, efficiently and legibly using the correct terminology where required	• Produce, record and communicate technical information such as planning documentation, recording results from tests and inspections, completing maintenance and inspection records, identify and ordering correct parts and components, complete training or CPD records
S6 Select and use appropriate tools, equipment and materials to carry out the engineering operation	• Select and use all appropriate tools and equipment required for the engineering operations such as hand tools, portable power tools, machine tools, mechanical lifting equipment, test equipment and work holding devices
S7 Deal appropriately with any problems that may occur within the manufacturing environment within the limits of their responsibility	• Deal appropriately with any problems within the manufacturing environment such as documentation and specification, tools and equipment, safety, materials, quality, processes or procedures, personnel and timescales • Report to the appropriate person any problems you

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	cannot solve or are not within your permitted authority
Option 1: Maintenance Role Specialist Skills **S9** Carry out fault location on appropriate equipment using suitable maintenance diagnostic techniques	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Locate any faults found on the appropriate equipment using suitable methods such as gathering suitable information, using suitable techniques such as half split, input/output, unit substitution, use of diagnostic aids such as flow charts, manuals, guides, maintenance records, visual inspection, functional tests and use of test equipment
S10 Carry out maintenance activities in line with work instructions	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Ensure maintenance activities are conducted in line with relevant work instructions such as maintenance schedule, inspection schedules, work orders and safe systems of work
S11 Carry out tests on the maintained equipment in accordance with test schedule/defined test procedures	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Ensure all test equipment is calibrated, appropriate

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	for tests and suitable for the specified range used as specified • Conduct checks and tests on relevant equipment in accordance with the maintenance schedule and test procedures such as monitoring equipment and gauges, instrumental tests such as pressure, temperature, flow, voltage, current, movement, sequence, leak tests and performance
Option 1: Maintenance Role Specialist Skills **S12** Follow appropriate completion activities and restore equipment to service by replacing or repairing components	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Complete maintenance activities to the specified standard such as cleaning, dismantling, reassembling, removing, replacing, repairing, adjusting, inspecting to ensure equipment is returned to the required serviceable state • Complete all records and paperwork as required
Option 2: Mechanical Manufacturing Engineering Role Specialist Skills **S13** Plan the mechanical manufacturing operation before they start	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Carry out preparations to the work area according to procedure specification and take account of any

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	specific safety requirements • Check the equipment used is in a safe and usable condition • Check the materials are available and meet the specification for type, quantity and quality
Option 2: Mechanical Manufacturing Engineering Role Specialist Skills **S14** Mount and set the required work holding devices	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Mount and set the required work holding device such as three jaw chuck, collet chuck, four jaw chuck, machine vice, clamps, indexing device, vee blocks and drive plate
S15 Produce individual components, sub-assemblies or completed assemblies using mechanical manufacturing techniques	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Plan machine activities • Obtain and prepare tools, materials and equipment • Mount and set work holding device, cutting tools and workpiece • Set and adjust machine speeds and feeds • Produce individual components, sub-assemblies or completed assemblies by using techniques such as

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	milling, turning, cutting drilling or other relevant techniques • Measure and check dimensions to ensure the work is within specification • Shut down equipment to a safe condition
S16 Carryout quality checks during and after mechanical manufacturing operations	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Measure and check dimensions to ensure the work is within specification such as external/internal diameters, bore/hole sizes, surface finish, parallelism, angle/taper, linear dimensions, grooves/undercuts, concentricity, eccentricity, ovality and thread fit • Using a selection of appropriate measuring instruments such as micrometers, verniers, rulers, DTIs, hole gauges, slip gauges and CMM
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S17** Wire and terminate different types of cabling e.g. single core, multi core, screened, fire resistant, armoured, etc.	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Use appropriate wiring methods and techniques such as positioning, levelling, determine and calculate the current rating and cable lengths, cable security such

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	as screws, nuts and bolts, cable routing, laying, correct use of conduits, allowing sufficient slack for termination and movement • Use the appropriate termination methods and techniques such as correct cable stripping, removing of insulation, sealing/protecting cables, connecting plugs/sockets, use of cable IDs, using clamped and screwed connections, crimping, soldering, heat shrinking and terminating armoured cables
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S18** Assemble and test a range of electrical components e.g. component panels, isolator switches, fuses, circuit breakers, contactors, relays, rail mounted terminal blocks, etc.	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Comply with relevant Health and Safety regulations including The Electricity at Work regulations, safe systems of work and electrical isolations • Plan electrical assembly, testing and wiring activities • Obtain and use required documentation such as diagrams, specification and components • Obtain and test appropriate tools and equipment. Check any calibrations, PAT • Assemble the components using the correct methods such as cable forming, screwed connections,

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	soldering, cable clamping, crimping and cable supports • Position components to ensure correct location, orientation and terminations • Use the correct procedures taking into account relevant regulations such as BS7671, Electricity at Work regulations, company specific procedures and ISO standards • Use appropriate tests and equipment to ensure equipment meets specification
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S19** Assemble and test a range of electronic components e.g. resistors, capacitors, diodes, transistors, etc.	• Follow and adhere to processes and procedures in place for Risk assessments, COSHH, PPE and other relevant safety regulations • Comply with relevant Health and Safety regulations including The Electricity at Work regulations, safe systems of work and electrical isolations • Obtain and use required documentation such as diagrams, specification and components • Obtain and test appropriate tools and equipment. Check any calibrations and PAT • Safely and correctly mount and secure components such fixed resistors, potentiometers, transistors,

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	analogue or digital integrated circuits, switches, cables, Diodes, light emitting diodes (LEDs) protection devices, cable connectors, relays or other relevant components • Position components to ensure correct location, orientation and terminations • Use the correct procedures taking into account relevant regulations such as BS7671 and Electricity at Work regulations, company specific procedures, ISO standards • Use appropriate tests and equipment to ensure equipment meets specification
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S20** Follow appropriate completion activities and restore equipment/system to service after the assembly and testing has been completed	• Conduct visual checks on the completed circuits to ensure: ○ soldered joints are clean, shiny, free from solder spikes, bridges, holes, excess solder and flux ○ components are correctly mounted for best physical support, and are correctly orientated ○ excess component leads have been trimmed off to the standard required

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
	○ circuit tracks are free from faults (such as lifting, breaks, bridges, hot spots) ○ there are no obvious signs of damage, to components or to the substrate ○ all required connectors, wire links, spacers and other ancillary items are in place • Carry out checks and tests using a range of equipment such as multimeters, oscilloscopes, software diagnostic programs, data communications test sets or other relevant test equipment. • Carry out checks, adjustments and fault rectification where appropriate to the circuits being assembled such as dc voltage/current levels, ac voltage/current levels, resistance, open/short circuit, Insulation tests, inductance, frequency modulation/demodulation, amplification, oscillations, waveform analysis and attenuation or other relevant checks. • Leave the work area in a safe and tidy condition on completion of the wiring and testing activities

Professional Discussion Elements: Skills	Amplification and Guidance (where required)

Option 4: Fabrication Role Specialist Skills
S21 Shape the materials using the appropriate methods and techniques
	• Use the appropriate method and technique to form the material such as:
	  ○ Cutting, (sawing, Shearing, laser cutting)
	  ○ Forming, (Bending, Folding, rolling, drawing)
	  ○ Joining, (Welding, brazing, soldering, adhesive bonding).
	  ○ Casting,
	  ○ Machining, (Turning, milling, drilling, grinding).

Option 4: Fabrication Role Specialist Skills **S22** Join the materials using the appropriate methods and techniques	• Operate relevant fabrication equipment or machinery safely such as cutting equipment, saws, shears, shaping or forming equipment, presses, welding or jointing equipment, soldering, or brazing equipment, grinders, sanders, etc • Demonstrate a range of fabrication techniques as appropriate to the task such as welding, machining, forming, or cutting to transform raw materials into finished products or components

Professional Discussion Elements: Skills	Amplification and Guidance (where required)
S23 Produce components which meet the specification requirements	• Produce components that meet the required specifications with regards to materials used, dimensions, tolerances, shape, form, function, surface finish, safety and regulatory compliance, and quality
S24 Carryout quality checks during and after the fabrication activities	• Carryout quality checks during and after the fabrication activity to include as appropriate: ○ Dimensional checks ○ Visual inspection ○ Weld quality inspection ○ Non Destructive Testing (NDT) ○ Fit and assembly checks ○ Functional and performance testing

Elements: Behaviours	Amplication and Guidance (where required)
Core Behaviours **B1 Personal responsibility and resilience** – Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing time and workload and stay motivated and committed when facing challenges.	• Demonstrates the application of knowledge to promote safety, health and care for the environment • Demonstrates the need to safeguard life and property when undertaking operations. • Demonstrate self-motivation when undertaking work • Demonstrate the effective use of own time • Take responsibility for work undertaken on site
B2 Work effectively in teams – Integrate with the team, support other people, consider implications of their own actions on other people and the business whilst working effectively to get the task completed.	• Recognise the benefits of teamwork • Recognise and acknowledge personal limitations and limits of authority • Recognise the need to seek advice from others when necessary
B3 Effective communication and interpersonal skills – An open and honest communicator, communicates clearly using appropriate methods, listen well to others and have a positive and respectful attitude.	• Uses a range of different communication methods such as verbal, written and electronic depending on the circumstances • Adapts communication style and language to suit the audience
B4 Focus on quality and problem solving – Follow instructions and guidance, demonstrate attention to detail, follow a logical approach to	• Demonstrate understanding of the need to work to quality standards

Elements: Behaviours	Amplication and Guidance (where required)
problem solving and seek opportunities to improve quality, speed and efficiency.	• Demonstrates the ability to follow laid down and logical procedures to identify and solve problems • Demonstrates the ability to identify and adopt best practice where necessary
B5 Continuous personal development – Reflect on skills, knowledge and behaviours and seek opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice.	• Can identify occasions where they have attended CPD activities such as team meetings / briefings, toolbox talks, refresher training sessions, read technical articles, attended formal training sessions on new equipment and technology • Can reflect on current skills and knowledge levels to identify any gaps in knowledge or training

Professional Discussion Roles and Responsibilities

Role	Responsibility
Independent Assessor	Record and report assessment outcome decisions for each apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards.
Employer representative	(Optional) Selects an appropriately qualified employee or suitable representative to attend the professional discussion to ensure accuracy and veracity of the apprentice's statements and to clarify any issues where requested by the independent assessor.
Employer/Training Provider	Ensure that the portfolio of evidence has been submitted to Energy & Environment Awards at least 2 weeks prior to the professional discussion. The employer will be required to confirm that the portfolio of evidence provides an accurate representation of work carried out by the apprentice and is not embellished. The professional discussion must be scheduled with Energy & Environment Awards for a date and time which allow the apprentice to be well prepared. Ensure the apprentice has access to their portfolio before and on the day of the professional discussion.
Energy & Environment Awards	Arrange for the professional discussion to take place, in consultation with the employer/training provider and independent assessor.

Section 3: Grading and Grading Criteria

Component 1: Practical Skills Observation

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
Core Knowledge **K1** How to obtain the necessary job instructions, engineering drawings and specifications and how to interpret them **K4** Engineering operational practices, processes and procedures **K5** Potential problems that can occur within the engineering operations and how they can be avoided	Demonstrates their knowledge of how to obtain the necessary job instructions, engineering drawings and specifications and how to interpret them. **Evidence including:** • Can explain where to obtain the obtain the necessary job instructions, engineering drawings and specifications when questioned • Can interpret necessary job instructions, engineering drawings and specifications when questioned • Can outline the specific operational practices, processes and procedures relevant to their work activities when questioned • Can outline the potential problems that can occur within the engineering operations when questioned • Can explain the actions that can be taken to avoid problems from occurring when questioned

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
K3 Their individual roles and responsibilities within the organisation and the flexibility required to support the achievement of company targets	Demonstrates their knowledge of their individual roles and responsibilities and the flexibility required to support the achievement of company targets. **Evidence including:** • Can explain their individual roles and responsibilities when questioned • Can explain the importance of flexibility required to support the achievement of company targets when questioned
Option 1: Maintenance Role Specialist Knowledge **K6** Maintenance planning **K8** Specific safe working practices, maintenance procedures and environmental regulations that need to be observed	Demonstrates their understanding of a maintenance operations. **Evidence including:** • Can use technical language and detail covering the key elements of the knowledge relating to the maintenance activities they have been involved in when questioned • Can describe the planning carried out prior to the start of the maintenance operation when questioned • Can describe the specific safe working practices, maintenance procedures and environmental regulations that need to be observed when questioned

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
Option 2: Mechanical Manufacturing Role Specialist Knowledge **K9** Specific equipment operating parameters **K11** Specific quality specifications for mechanical manufacturing operations	Demonstrates their understanding of a mechanical manufacturing operations. **Evidence including:** • Can use technical language and detail covering the key elements of the knowledge relating to the mechanical manufacturing activities they have been involved in when questioned • Can describe the specific equipment operating parameters when questioned • Can describe the specific quality specifications for mechanical manufacturing operations
Option 3: Electrical and Electronic Engineering Role Specialist Knowledge **K12** Cable types and where they should be used **K14** Specific safe working practices, isolation procedures and safe reinstating of equipment/system that need to be observed	Demonstrates their understanding of electrical and electronic engineering operations **Evidence including:** • Can use technical language and detail covering the key elements of the knowledge relating to the electrical and electronic engineering activities they have been involved in when questioned • Can describe the different cable types and where they have used them when questioned

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
	• Can describe the specific safe working practices, isolation procedures and safe reinstating of equipment/system that need to be observed
Option 4: Fabrication Role Specialist Knowledge **K15** Specific marking out and preparation techniques **K17** Specific safe working practices, isolation procedures and safe reinstating of equipment or system that need to be observed	Demonstrates their understanding of fabrication operations **Evidence including:** • Can use technical language and detail covering the key elements of the knowledge relating to the fabrication activities they have been involved in when questioned • Can describe the marking out and preparation techniques and where they have used them when questioned • Can describe the specific safe working practices, isolation procedures and safe reinstating of equipment or system that need to be observed

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
Core Skills **S1** Work safely at all times, complying with health and safety legislation, regulations, environmental compliance procedures and systems and other relevant guidelines **S5** Obtain and follow the correct documentation, specifications and work instructions in accordance with time constraints and the roles and responsibilities identified for the engineering activities, extracting the necessary data/information from specification and related documentation **S6** Select and use appropriate tools, equipment and materials to carry out the engineering operation	Demonstrates their ability to work safely in an engineering environment to approved procedures. **Evidence including**: • Can identify, assess and control health and safety risks within work environment as per company procedures and guidelines and record the necessary information appropriately • Can select and use appropriate tools, equipment and materials to carry out the engineering operations • Can deal with problems that occur within the engineering environment • Can work efficiently and effectively while adhering to appropriate job instructions

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
S8 Work efficiently and effectively at all times maintaining workplace organisation and minimising waste	

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
Option 1: Maintenance Role Specialist Skills **S9** Carry out fault location on appropriate equipment using suitable maintenance diagnostic techniques **S10** Carry out maintenance activities in line with work instructions	Demonstrates their ability carry out maintenance activities in line with work instructions. **Evidence including:** • Follows the correct work instructions as part of their work commitments and shows an understanding of any operating rules in place within the instruction • Carries out fault location using suitable diagnostic techniques
Option 2: Mechanical Manufacturing Engineering Role Specialist Skills **S14** Mount and set the required work holding devices **S15** Produce individual components, sub-assemblies or completed assemblies using mechanical manufacturing techniques	Demonstrates their ability to produce components sub-assemblies or completed assemblies to the required specification **Evidence including:** • Follows the appropriate mechanical manufacturing techniques to produce individual components, sub-assemblies or completed assemblies, showing an understanding of the techniques used • Mounts and sets the required work holding devices

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S18** Assemble and test a range of electrical components e.g. component panels, isolator switches, fuses, circuit breakers, contactors, relays, rail mounted terminal blocks, etc. **S19** Assemble and test a range of electronic components e.g. resistors, capacitors, diodes, transistors, etc	Demonstrates their ability to assemble and test a range of electrical and electronic components **Evidence including:** • Follows the appropriate electrical assembly and testing, showing an understanding of the techniques used • Follows the appropriate electronic assembly and testing, showing an understanding of the techniques used
Option 4: Fabrication Role Specialist Skills **S22** Join the materials using the appropriate methods and techniques **S23** Produce components which meet the specification requirements	Demonstrates their ability to produce components which meet the specification requirements **Evidence including:** • Follows the correct work instructions to produce components as part of their work commitments and shows an understanding of any operating rules in place within the instruction • Can produce components which meet the specification requirements • Can join the materials using the appropriate methods and techniques

Practical Skills Observation KSBs	To achieve a PASS the apprentice must achieve ALL the following core pass and ALL of the pass criteria for one of the specialist job roles.
Core Behaviours **B1** Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being	Demonstrates they comply with Health and Safety guidance and procedures. **Evidence including:** • Always demonstrates understanding and importance of health and safety requirements • Dynamically assesses/controls risk in current environment

Component 2: Professional discussion based on the portfolio of evidence

The following criteria are indicative of the pass and distinction criteria the independent assessor will be looking for when the apprentice carries out the professional discussion.

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
Core Knowledge **K2** Relevant statutory, quality, environmental compliance procedures/systems, organisational and health and safety regulations relating to engineering operations	Demonstrates their understanding of statutory, quality, environmental compliance procedures, systems, organisational and health and safety regulations. **Evidence including:** • Able to outline the specific statutory, quality, environmental compliance procedures/systems, organisational and health and safety regulations relevant to their work activities	N/A
K4 Engineering operational practices,	Demonstrates their understanding of improvement techniques. **Evidence including:**	

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
processes and procedures	• Able to outline the specific operational practices, processes and procedures relevant to their work activities	
Option 1: Maintenance Role Specialist Knowledge **K6** Maintenance planning **K7** Diagnostic and fault finding techniques	Demonstrates their understanding of a maintenance operations **Evidence including:** • Use of technical language and detail covering the key elements of the knowledge relating to the maintenance activities they have been involved in • Can describe the planning carried out prior to the start of the maintenance operation • Can describe the diagnostic and fault finding techniques they used and the reason for using them	Use of technical language and detail to give an in-depth explanation the key elements of the knowledge relating to the to the maintenance activities they have been involved in In-depth explanation includes detail of key aspects of the work they have carried out and can answer questions using relevant detail e.g. processes, equipment, materials used and the reason behind their use.

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
Option 2: Mechanical Manufacturing Role Specialist Knowledge **K9** Specific equipment operating parameters **K10** Mechanical manufacturing techniques	Demonstrates their understanding of a mechanical manufacturing operations. **Evidence including:** • Use of technical language and detail covering the key elements of the knowledge relating to the mechanical manufacturing activities they have been involved in • Can describe the specific equipment operating parameters • Can describe the mechanical	Use of technical language and detail to give an in-depth explanation the key elements of the knowledge relating to the to the mechanical manufacturing activities they have been involved in In-depth explanation includes detail of key aspects of the work they have carried out and can answer questions using relevant detail e.g. processes, equipment, materials used and the reason behind their use
Option 3: Electrical and Electronic Engineering Role Specialist Knowledge	Demonstrates their understanding of electrical and electronic engineering operations **Evidence including:** • Use of technical language and detail covering the key elements of the	Use of technical language and detail to give an in-depth explanation the key elements of the knowledge relating to the to the electrical and electronic engineering activities they have been involved in

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
K12 Cable types and where they should be used **K13** Electrical and electronic assembly and testing techniques	knowledge relating to the electrical and electronic engineering activities they have been involved in • Can describe the different cable types and where they have used them • Can describe the electrical and electronic assembly and testing techniques they have used	In-depth explanation includes detail of key aspects of the work they have carried out and can answer questions using relevant detail e.g. processes, equipment, materials used and the reason behind their use
Option 4: Fabrication Role Specialist Knowledge **K15** Specific marking out and preparation techniques **K16** Different fabrication and joining techniques	Demonstrates their understanding of fabrication operations **Evidence including:** • Can use technical language and detail covering the key elements of the knowledge relating to the fabrication activities they have been involved in	Use of technical language and detail to give an in-depth* explanation the key elements of the knowledge relating to the to the fabrication activities they have been involved in In-depth* = explanation includes detail of key aspects of the work they have carried out and can answer questions using

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
	• Can describe the marking out and preparation techniques and where they have used them • Can describe the different fabrication and joining techniques they have used	relevant detail for example processes, equipment, materials used and the reason behind their use
Core Skills **S1** Work safely at all times, complying with health and safety legislation, regulations, environmental compliance procedures and systems and other relevant guidelines **S2** Identify and deal appropriately with any	Demonstrates their ability to work safely in an engineering environment to approved procedures **Evidence including:** • Can identify, assesses/ and controls risk within work environment • Can use effective communication using a range of techniques • Can complete documentation accurately, efficiently and legibly using the correct terminology	Demonstrates they have the ability to take on additional safety responsibilities, over and above the expectation of an engineering environment **Evidence including:** • Challenges other people on Health and Safety compliance, where appropriate • Can dynamically assesses/controls risk at all times regardless of environment

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
risks, hazards, hazardous situations and problems that may occur within the engineering environment within the limits of their responsibility **S6** Select and use appropriate tools, equipment and materials to carry out the engineering operation **S7** Deal appropriately with any problems that	• Can select and use appropriate tools, equipment and materials to carry out the engineering operations • Can deal with problems that occur within the engineering environment • Can plan and Prepare prior to starting engineering activity • Can work efficiently and effectively while adhering to appropriate job instructions	• Can suggest ideas for improvement along with possible solutions

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
may occur within the manufacturing environment within the limits of their responsibility		
S3 Demonstrate effective communication skills which include oral, written, electronic **S4** Complete appropriate documentation accurately, efficiently and legibly using the correct terminology where required	Demonstrates their ability to work safely in an engineering environment to approved procedures. **Evidence including:** • Can use effective communication using a range of techniques • Can complete documentation accurately, efficiently and legibly using the correct terminology	N/A

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
Option 1: Maintenance Role Specialist Skills **S9** Carry out fault location on appropriate equipment using suitable maintenance diagnostic techniques **S10** Carry out maintenance activities in line with work instructions **S11** Carry out tests on the maintained equipment in accordance with test	Demonstrates their ability carry out maintenance activities in line with work instructions **Evidence including:** • Provides evidence of having followed the correct work instructions as part of their work commitments and shows an understanding of any operating rules in place within the instruction • Carries out fault location using suitable diagnostic techniques • Carries out sufficient tests on the maintained equipment • Carries out correct completion activities and restores equipment to a serviceable condition	Demonstrates that they can consistently carryout fault finding and maintenance efficiently and can overcome problems

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
schedule/defined test procedures **S12** Follow appropriate completion activities and restore equipment to service by replacing or repairing components		
Option 2: Mechanical Manufacturing Engineering Role Specialist Skills **S13** Plan the mechanical manufacturing operation before they start	Demonstrates their ability to produce components subassemblies or completed assemblies to the required specification **Evidence including:** • Provides evidence of having used appropriate mechanical manufacturing techniques to produce individual components, sub-assemblies or	Demonstrates that they can consistently produce high quality parts efficiently and can overcome problems

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
S14 Mount and set the required work holding devices **S15** Produce individual components, sub-assemblies or completed assemblies using mechanical manufacturing techniques **S16** Carry out quality checks during and after mechanical manufacturing operations	completed assemblies, showing an understanding of the techniques used • Mounts and sets the required work holding devices • Can plan mechanical manufacturing operation before they start	

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
Option 3: Electrical and Electronic Engineering Role Specialist Skills **S17** Wire and terminate different types of cabling e.g. single core, multi core, screened, fire resistant, armoured, etc. **S18** Assemble and test a range of electrical components e.g. component panels, isolator switches, fuses, circuit breakers, contactors, relays, rail	Demonstrates their ability to assemble and test a range of electrical and electronic components. **Evidence including:** • Provides evidence of having used appropriate assembly and testing, showing an understanding of the techniques used • Can wire and terminate different types of cabling • Can follow completion activities and restores equipment to a serviceable condition • Carries out appropriate quality checks during and after the assembly and testing operation to confirm required specification requirements are met	Demonstrates that they can consistently assemble and test electrical and electronic equipment efficiently and can overcome problems

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
mounted terminal blocks, etc. **S19** Assemble and test a range of electronic components e.g. resistors, capacitors, diodes, transistors, etc. **S20** Follow appropriate completion activities and restore equipment/system to service after the assembly and testing has been completed		

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
Option 4: Fabrication Role Specialist Skills **S21** Shape the materials using the appropriate methods and techniques **S22** Join the materials using the appropriate methods and techniques **S23** Produce components which meet the specification requirements **S24** Carryout quality checks during and after the fabrication activities	Demonstrates their ability to produce components which meet the specification requirements **Evidence including:** • Provides evidence of having used appropriate work instructions to produce components as part of their work commitments and shows an understanding of any operating rules in place within the instruction • Can shape the materials using the appropriate methods and techniques • Can join the materials using the appropriate methods and techniques • Carries out appropriate quality checks during and after the fabrication operation to confirm required specification requirements are met	Demonstrates that they can consistently produce high quality parts efficiently and can overcome problems

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
Core Behaviours **B1 Personal responsibility and resilience -** Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing time and workload and stay motivated and committed when facing challenges.	Demonstrate they comply with Health and Safety guidance and procedures **Evidence including:** • Always demonstrates understanding, importance of Health and Safety requirements • Assesses/controls risk in current environment • Can be trusted to work on own when appropriate, knowing who and where to seek help from if needed • Can manage own time and workload • Stays motivated and committed, when facing small challenges	Can challenge others on Health and Safety Compliance **Evidence including:** • Can proactively assesses/controls risk without the need to be prompted • Sets an example to others by always working hard even when on own • Can reflect on how to do things more effectively

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
B2 Working effectively in teams - Integrate with the team, support other people, consider implications of their own actions on other people and the business whilst working effectively to get the task completed.	Demonstrate they can work well within a team **Evidence including:** • Makes effort to integrate within a team • Will help and support when asked • Considers impact of own actions on other people or activities • Contributes positively to team deliverables	• Proactively and regularly supports others • Seeks support, advice and will share learning • Provides encouragement as appropriate to keep the team on track
B3 Effective communication and interpersonal skills - An open and honest communicator; communicates clearly using appropriate methods, listen well to others and have a	Demonstrate they can communicate in an efficient and effective way **Evidence including:** • Can communicate open and honestly • Communicates clearly using appropriate methods • Pays attention and asks relevant questions to clarify understanding	• Proactively shares information, openly and honestly • Checks understanding of others by asking open questions

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
positive and respectful attitude.	• Has a positive and respectful attitude	
B4 Focus on quality and problem solving - Follow instructions and guidance, demonstrate attention to detail, follow a logical approach to problem solving and seek opportunities to improve quality, speed and efficiency.	Demonstrate they can follow instructions and guidance and can follow a logical approach to problem solving. **Evidence including:** • Understands and can follow instructions/processes • Demonstrates attention to detail • Follows a logical/right approach to problem solving • Identifies opportunities to improve, but may need prompting for ideas	Can make suggestions to improve instructions **Evidence including:** • Can escalate issues as appropriate • Applies the most appropriate technique for problem solving • Can reflect upon lessons learnt after problem solving activity
B5 Continuous personal development - Reflect on skills,	Demonstrate they can take ownership of their personal development and will seek opportunities to develop.	Recognises needs and continually seeks learning opportunities. **Evidence including:**

Professional Discussion KSBs	**Pass Criteria** To achieve a pass the apprentice must achieve ALL of the core pass criteria and ALL of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below AND the distinction criteria for the specialist job role they are working towards
knowledge and behaviours and seek opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice	**Evidence including:** • Can reflect on Knowledge and seeks opportunities to develop • Can reflect on skills and seeks opportunities to develop • Can reflect on behaviours and seeks opportunities to develop • Can adapt to different situations, environments or technologies • Has a positive attitude to feedback and advice	• Can transfer learning, applying it to different situations • Can adapts quickly and effectively to new situations, environments or technologies • Proactively seeks feedback and acts upon it

Overall grading

The practical skills observation and professional discussion will be individually graded.
The practical skills observation is graded fail or pass and the professional discussion will be graded fail, pass, or distinction. A fail in one or more of the assessment methods will result in a fail in the EPA. Evidence from the portfolio will be used to inform the professional discussion but will not be assessed.

Grading Criteria

All assessment methods are weighted equally in their contribution to the overall EPA grade. Grades from individual assessment methods will be combined in the following way to determine the grade of the overall EPA as a whole.

Component	Assessment Grade	Assessment Grade	Assessment Grade	Assessment Grade	Assessment Grade
Practical Skills Observation	Fail	Pass	Fail	Pass	Pass
Professional Discussion	Fail	Fail	Pass	Pass	Distinction
Grade Awarded	Fail	Fail	Fail	Pass	Distinction

Section 4: Resits and retakes

Apprentices who fail one or more EPA components can re-sit or re-take the failed component at the employer's discretion. The apprentice's employer needs to agree that a re-sit or re-take is appropriate. A re-sit does not need further learning, but a re-take does. Apprentices should have a supportive action plan to prepare for a re-sit or a re-take. Re-sits or re-takes are not offered to apprentices wishing to move from pass to distinction.

The employer and Energy & Environment Awards agree the timescale for a re-sit or re-take and this is dependent on the amount of learning required to meet the KSBs. Resit or retakes should be taken once the apprentice receives sufficient training to address the shortfall in the KSB's required for the standard that have been identified within the result of the EPA.

The maximum grade awarded for a re-sit or re-take for the practical observation will be graded pass or fail and a re-sit or re-take of the professional discussion will be graded pass, fail or distinction and combined to determine the EPA grade.

Apprentices must be observed doing different activities within the practical skills observation when taking a re-sit or re-take.

If the apprentice is unsuccessful, their employer will decide when the apprentice should re-apply for the EPA once additional training has taken place.

Energy & Environment Awards resit and re-take policy can be found at:
https://energyenvironmentawards.co.uk/policies-and-fees/

Section 5: Practical Skills Observation Review Service and Practice Guidance

Energy & Environment Awards recommend that apprentices have a practice or 'mock' assessment covering all components of the EPA in the weeks running up to the live EPA.
Energy & Environment Awards also recommends that employers/training providers use Energy & Environment Awards Practical Skills Observation Review Service to help ensure the tasks prepared for the live practical assessment are appropriate.

Practical Skills Observation Review Service

Energy & Environment Awards provide an optional Practical task(s) review service to assist with planning for all employers/training providers with apprentices on this standard. To access the service, refer to supporting documents Appendix C 'Practical Skills Observation with Planning Form.'

The purpose of the planning service is to provide support in ensuring that the practical task(s), test facilities, necessary equipment, tools and controlled conditions are in place to allow the practical task(s) to take place. The review helps ensure the proposed practical task is sufficiently complex to allow the apprentice to demonstrate the required knowledge, skills and behaviours.

Details of the relevant elements, where the practical skills observation should be conducted, equipment and tools are included in Section 2 of the Specification.
Tasks should be designed to allow variation to be introduced, reducing predictability.

Submitting the form to Energy & Environment Awards

The employer/training provider should complete and submit the 'Practical Skills Observation with Planning Form' to Energy & Environment Awards Service Delivery Team via enquiries@energyenvironmentawards.co.uk for approval 1 month before the start of the end-point assessment. The form should be accompanied by photographs and or video(s) of the plant/equipment/network areas, including practical task(s) and brief(s) which the apprentice will be working on.

Energy & Environment Awards Review Process

Energy & Environment Awards review process will be conducted by an independent assessor. The outcomes will be shared with the employer/training provider no later than 5 working days following the review.

Please be aware:

- Practical task(s) review does not guarantee that the apprentice will pass the practical task
- No health and safety risk assessment has been carried out by Energy & Environment Awards
- Energy & Environment Awards review does not remove any of the training provider obligations to ensure full coverage of the standard, and full compliance with relevant legislation
- Energy & Environment Awards review is based only on information supplied and is not a guarantee that the task and plant/equipment on the day of the practical will be sufficient for an EPA practical task
- The information provided in this Practical Skills Observation Planning Form must **not be shared with the apprentice**

Preparing for the Practical Skills Observation

Where possible, the employer/training provider should provide the apprentice with the opportunity to carry out a practice practical skills observation as close to the real assessment described in section 2 of the specification (component 1).

The employer/training provider should prepare a practical task similar to (but not identical to) the tasks being used for the live assessment. A suitable person should be chosen to play the part of the independent assessor.

A template is provided in Supporting Documents Appendix D ‘Practice Practical Skills Observation Template’, to help ensure that the activities assessed during the practical skills observation will give complete coverage of the standard.

Preparing for the Professional Discussion

A practice professional discussion should take place between the apprentice and the person acting the role of an independent assessor. The apprentice should draw on evidence from their portfolio during the discussion to demonstrate competence of the broad range of knowledge, skills and behaviours.

The employer/training provider will be required to confirm that the portfolio provides an accurate representative of work carried out by the apprentice and is not embellished.

Guidance on Portfolio of Evidence

The portfolio is not assessed. It serves two purposes:

- The independent assessor reviews the portfolio before the professional interview to help focus and contextualise their questions
- A carefully prepared mapped portfolio supports the apprentice during the professional discussion

Quality vs Quantity

The apprentice should be supported in selecting and mapping evidence for their portfolio.

Choose the best pieces of evidence that have been mapped for each KSB covered by the professional discussion. An independent assessor will look for one suitable piece of evidence for each KSB. To be confident of meeting the standard, apprentices should aim to have two pieces of evidence mapped to each KSB.

What to include in the portfolio?

The portfolio of evidence:

- must contain a mapping document where evidence is mapped against the KSBs. A template has been produced to help the apprentices with collecting and mapping their evidence. A copy of the template is included in the Supporting Documents Appendix F - 'Portfolio Mapping Document'
- must contain evidence related to the KSBs that will be assessed by the professional discussion

- will contain quality pieces of evidence
- will be available, during the professional discussion, allowing the apprentice to refer to it
- must contain demonstrations of work carried out over a period of time and must include evidence of work carried out within the last three months of the on programme period
- must contain a minimum of 2 and no more than 3 activities carried out by the apprentice that demonstrates the higher order knowledge, skills and behaviours
- where practicable this should include:
    - photographs
    - images
    - diagrams
    - job descriptions and witness evidence/testimony
    - situations that have been difficult and challenging, and how these have been overcome e.g. equipment breakdown which has results in a change in working practice while still adhering to company procedures
    - any employer contributions must focus on direct observation of evidence (e.g. review/witness statements) of competence rather than opinions

The above is not a definitive list. The apprentice can include other relevant evidence sources. The portfolio **must not** contain any methods of self-assessment.

Evidence must be:

- produced by the apprentice (authentic)
- relevant to the standard (K, S or B) that it is mapped to
- produced during the time the apprentice is carrying out their on-programme training

What can the apprentice do?

The apprentice should:

- be familiar with the structure of their portfolio
- know the KSBs covered by the professional discussion
- know the grading criteria

- ensure there is evidence and to cover every KSB in the professional discussion
- practise mapping evidence and completing the evidence mapping grid

The role of the training provider

Training providers are expected to support the apprentice in preparing their portfolio by:

- clarifying responsibility for supporting the apprentice to select and map evidence for the portfolio, including employer coaches/mentors where applicable
- advising on which pieces of evidence to select to ensure that when looked at as a whole, they provide coverage of all the required elements of the standard assessed in the professional discussion
- supporting the mapping of evidence and production of a mapping document
- authenticating evidence as valid
- signing off the portfolio
- submitting the portfolio to Energy & Environment Awards at least 2 weeks to professional discussion, the apprentice will submit a portfolio setting out examples of work they have carried out

What to expect in the practice professional discussion?

The practice professional discussion provides the apprentice with the opportunity to practice discussing their KSBs gained throughout their on-programme and by referring to the evidence from the apprentice's portfolio using the mapping document. A suitable person should be chosen to play the part of the independent assessor. See Appendix E – Supporting Documents for a 'Practice Professional Discussion Template' to be used to prepare the appropriate questions to ask and to record the apprentices' performance in the practice professional discussion.

As part of the practice exercise, apprentices should have access to their portfolio to support their responses.

Section 6: Authenticity and security of apprentice work

The apprentices must be advised by their training provider and employer that copying of any work (whether it is from another apprentice or from internal, external documents or source) and presenting it as their own will be deemed as malpractice and will lead to their work being disqualified. Apprentices must not share their work or allow any person to copy their work as this is not allowed and would also be deemed as malpractice.

In signing off the portfolio, training providers and employers must be satisfied that the evidence in the portfolio is:

- **adequate**: evidence must cover all relevant KSBs within the assessment plan. Adequate does not mean a large quantity of evidence. The evidence should focus on quality rather than quantity
- **authentic**: apprentices must be able to confirm and talk about the evidence that they submit with the independent assessor, appointed by Energy & Environment Awards. It is vitally important apprentices only submit evidence relating to them
- **appropriate**: all evidence must be relevant to the KSBs assessed during the professional discussion
- **recent and up to date**: all evidence must be linked to KSBs and must include evidence of work carried out within the last three months of the on programme period. The work must be current which demonstrate the apprentice's competence. The Independent Assessor, appointed by Energy & Environment Awards will assess current competencies, and the apprentice must map the evidence to demonstrate the relevant work to the KSB. Apprentices must gather the evidence during their on-programme training