ENERGY & ENVIRONMENT AWARDS

Skills for a greener world

EEA Level 3 End-point Assessment for Power Industry Distribution Cable Jointer

Specification

QAN 610/6034/3
ST1332 V1.0 V1.1

Specification for

EEA Level 3 End-point Assessment for Power Industry Distribution Cable Jointer

QAN 610/6034/3

Updates to this specification

Since the first publication of Energy & Environment Awards Power Industry Distribution Cable Jointer Specification – the following updates have been made.

Version	Date first published	Section updated	Page(s)
v2.0	August 2025	Rebranded	All
v1.2	November 2024	Standard updated (V1.1) to include statement '*The apprentice may choose to end the assessment method early.' For 3 assessment methods*	5, 17, 18, 31, 34, 58, 62, 63, 75
v1.1	October 2024	Minor updates to align the 3 Power Industry Specifications	
v1.0	October 2024	First published	All

Section 1: At a glance EPA summary

Qualification name	EEA Level 3 End-point Assessment for Power Industry Distribution Cable Jointer
Ofqual qualification number	610/6034/3
Standard reference	ST1332
Assessment plan	V1.1
Standard title	Power Industry Distribution Cable Jointer
Level	3
Gateway pre-requisites submitted to Energy & Environment Awards	Apprentice has: • achieved English and mathematics qualifications in line with the apprenticeship funding rules • passed Emergency first aid 1 day course • compiled and submitted an EPA portfolio, which will be the focus of the interview based on an EPA portfolio
On-programme duration	Typically 30 months
Gateway readiness	Apprentice has met all Gateway pre-requisites. Employer completes, signs and submits Gateway Eligibility Form (GER) form to Energy & Environment Awards. See Appendix B, PIDCJ Supporting Documents 'Gateway Eligibility Form.'
End-point assessment duration	Typically 6 months after Gateway

End-point assessment methods and their order	The • multiple-choice test; and • interview based on an EPA portfolio **must both be completed and passed before** starting the • trade test practical assessment with questions; and • trade test technical interview
End-point assessment methods and component grading	Multiple-choice test: Fail or Pass Interview based on an EPA portfolio: Fail; Pass; or Distinction Trade test practical assessment with questions: Fail; Pass; or Distinction Trade test technical interview: Fail or Pass
Overall Grading	Fail; Pass; or Distinction
Certification	Energy & Environment Awards request Apprenticeship completion certificates from the ESFA
Glossary of Terms	Appendix A, PIDCJ Supporting Documents

Objective

The purpose of the Power Industry Distribution Cable Jointer (PIDCJ) 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 PIDCJ end-point assessment requirements successfully and has been certified they could take on the following typical job roles:

- Cable jointer
- Craftsperson jointer/underground jointer
- Electrical jointer

- High voltage and/or low voltage cable jointer
- Jointer
- Low voltage mains jointer

Professional recognition

This apprenticeship aligns with The Institution of Engineering and Technology (IET) for Engineering Technician (EngTech). The experience gained and responsibility held by the apprentice on completion of the apprenticeship will either wholly or partially satisfy the requirements for registration at this level. Please contact the professional body for more details.

Gateway readiness

Gateway takes place before the EPA can start. The employer and training provider will review their apprentice's knowledge, skills and behaviours to see if they have met the minimum requirements of the apprenticeship set out in the apprenticeship standard and are ready to take the assessment. Only apprentices who complete gateway successfully can start the EPA. Gateway pre-requisites are listed in the summary table above. The Gateway Eligibility Form must be completed see PIDCJ Supporting Documents Appendix B.

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 for portfolio and the interview must be produced while the apprentice in on-programme to demonstrate current practice

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: Multiple-choice test

Overview

The multiple-choice test is a computer based test which consists of 40 multiple-choice questions. Paper-based tests are available on demand.

Apprentices have 60 minutes to complete the test. The multiple-choice questions will have four possible answers of which one will be correct.

The Pass mark is 28 correct answers.

For this paper:

- a (scientific) calculator is required
- access to the internet or intranet is NOT allowed
- apprentices cannot refer to reference books or materials whilst taking the test

Apprentices must take the test in a quiet space, free from distractions and influence, in the presence of an Energy & Environment Awards approved invigilator.

Multiple-choice test coverage

The multiple-choice test consists of 40 knowledge questions.
The table below lists each of the knowledge elements, assessed in the multiple-choice test. Amplification and Guidance can be found in the table below.

Number of Questions	Knowledge	Amplification and Guidance (where required)
3 - 6	**K1**: Power network industry appreciation: generation of electricity, Transmission Network Operator, Distribution Network Operator (DNO), Independent Distribution Network Operator (IDNO), Independent Connections Provider (ICP), supplier, generators - role and boundary of operation.	Power network industry appreciation: 1. Generation of electricity including methods and sources of energy The role and boundary of operation of: 2. Transmission Network Operator (TNO) 3. Distribution Network Operator (DNO) 4. Independent Distribution Network Operator (IDNO) 5. Independent Connections Provider (ICP) 6. Suppliers 7. Generators
1 - 3	**K2**: The office of gas and electricity markets (Ofgem) - their role and powers.	The office of gas and electricity markets (Ofgem): 1. Their role and responsibilities 2. Their powers such as licensing, enforcement and price controls

Number of Questions	Knowledge	Amplification and Guidance (where required)
1 - 3	**K3**: Power industry regulations: Electricity at Work Regulations, and The Electricity Safety, Quality and Continuity Regulations (ESQCR). Their purpose and basic requirements.	The purpose and basic requirements of: 1. Electricity at Work Regulations 2. The Electricity Safety, Quality and Continuity Regulations (ESQCR)
4 - 5	**K6**: Business operation considerations: how activities may impact customers, financial constraints (budgets), penalties and rewards, ethical business practices.	Business operation considerations: 1. How activities such as implementing energy efficiency and maintenance programmes; price setting; and customer engagement, may impact customers 2. Financial constraints (budgets) such as regulatory compliance requirements; integration of renewable energy sources 3. Penalties and rewards such as under RIIO (Revenue = Incentives + Innovation + Outputs); performance targets 4. Ethical business practices such as fair treatment of employees and customers, environmental responsibility
8 - 10	**K9**: Health and safety regulations, standards, and guidance - their purpose and basic requirements: asbestos awareness, Construction Design	1. Asbestos awareness such as where they may come into contact; safe work practices, control measures, and protective equipment needed

Number of Questions	Knowledge	Amplification and Guidance (where required)
	Management (CDM), Health and Safety at Work Act, confined spaces awareness, Control of Substances Hazardous to Health (COSHH), Lifting Operations and Lifting Equipment Regulations (LOLER), lone working, Management of Health and Safety at Work, Provision and Use of Work Equipment Regulations (PUWER), Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR), and warning signs and symbols.	The purpose and basic requirements of: 1. The Construction (Design and Management) Regulations 2015 (CDM) 2. Health and Safety at Work Act 1974 (HASWA) 3. Confined spaces awareness 4. Control of Substances Hazardous to Health 2002 (COSHH) 5. Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) 6. Lone working 7. Management of Health and Safety at Work Regulations 1999 8. Provision and Use of Work Equipment Regulations 1998 (PUWER) 9. Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013 (RIDDOR) 10. Warning signs and symbols by type, colour and recognising their pictograms
1 - 2	**K10**: Working at height awareness and safe use of methods of access and egress.	1. Working at height awareness 2. Safe use of methods of access and egress
1 - 3	**K17**: The Environmental Protection Act – its purpose and basic requirements. Impact	1. The Environmental Protection Act 1990 – its purpose and basic requirements

Number of Questions	Knowledge	Amplification and Guidance (where required)
	of sites of special scientific interest, flora and fauna on work.	2. Impact of sites of special scientific interest, flora and fauna on work
4 - 6	**K19**: Mathematical theory in power engineering. Round numbers, scientific notation, percentages and ratios. Areas, perimeters, volumes and surface areas of simple shapes. Scales, tables, graphs and charts. Pythagoras' Theorem and sin, cos, and tan in right-angled triangles. Substitution of numerical values into simple engineering formulae. The sequence of arithmetic operations.	Mathematical theory in power engineering: 1. Round numbers, scientific notation, percentages and ratios 2. Areas, perimeters, volumes and surface areas of simple shapes 3. Scales, tables, graphs and charts 4. Pythagoras' Theorem and sin, cos, and tan in right-angled triangles 5. Substitution of numerical values into simple engineering formulae 6. The sequence of arithmetic operations Examples of the focus of questions that may be asked: • Calculating lengths of cable, diameters, insulation thickness voltage drops, and current ratings • Angles and distances for the layout and alignment of cables • Using electrical formulas: Ohm's Law, power calculations, and other electrical principles • Conversion of units, such as from metric to imperial

Number of Questions	Knowledge	Amplification and Guidance (where required)
		• Calculating reliability and efficiency/performance of cable joints
3 - 5	**K20**: Electrical theory in power engineering. Circuit technology. Magnetism and electromagnetism. Transformers.	1. Electrical theory in power engineering: Ohm's Law; Kirchhoff's Current Law; Kirchhoff's Voltage Law; power factors; three-phase power 2. Circuit technology such as distribution panels and associated equipment; switchgear; protective relays; smart grids 3. Magnetism and electromagnetism such as magnetic fields and forces; electric fields and forces; Faraday's Law 4. Transformers such as core materials and types; primary and secondary windings
2 - 4	**K21**: Power engineering electrical networks: generation, transmission, distribution and transformation of system voltages.	Power engineering electrical networks: 1. Generation: function and components 2. Transmission: function, components and types 3. Distribution: function, components and types 4. Transformation of system voltages
2 - 4	**K26**: Different cable types, voltage up to 33kV, construction and identification techniques and methods: Cross linked polyethylene insulated aluminium	Construction and identification techniques and methods for: 1. Cross linked polyethylene insulated aluminium conductor armoured cable (XLPE) 2. Consac or paper-insulated lead covered (PILC)

Number of Questions	Knowledge	Amplification and Guidance (where required)
	conductor armoured cable (XLPE), and Consac or paper-insulated lead covered (PILC), Polymer Ethylene Propylene Rubber (EPR) and XLPE cables, and paper insulated cables.	3. Polymer Ethylene Propylene Rubber (EPR) and XLPE cables 4. Paper insulated cables
1 - 2	**K39**: Access to private land, streets and wayleaves.	1. Access to private land, streets and wayleaves

Multiple-choice test roles and responsibilities

Role	Responsibility
Invigilator	Is typically provided by the employer or training provider. Attend induction training as directed by Energy & Environment Awards. Must not invigilate an assessment, solely, if they have delivered the assessed content to the apprentice. Invigilate and supervise the apprentice during tests and in breaks during assessment methods to prevent malpractice in line with Energy & Environment Awards invigilation procedures.
Employer/Training Provider	Ensure that the multiple-choice test is scheduled with Energy & Environment Awards for a date and time which allow the apprentice to be well prepared. Follow Energy & Environment Awards guidance in setting up and confirming IT provision for the on-screen test.
Energy & Environment Awards	Arrange for the multiple-choice test to take place, in consultation with the employer/training provider. Mark multiple-choice test answers accurately according to the mark scheme and procedures.

Component 2: Interview based on an EPA portfolio

Overview

This interview is based on the apprentice's EPA portfolio developed from the EPA Portfolio Template's tasks and focuses on holistic evidence covering the KSBs. The interview allows for testing of responses where there are a range of potential answers.

The EPA portfolio, compiled throughout the apprenticeship and completed by Gateway must be submitted to Energy & Environment Awards. The EPA Portfolio Template will be issued to employers/training providers by their Energy & Environment Awards Service Delivery Coordinator.

Step-by-Step Guide

The table below provides a step-by-step guide on how the interview based on an EPA portfolio will be carried out:

Assessors	1 independent assessor approved by Energy & Environment Awards will conduct the interview
Interview based on an EPA portfolio structure	**Types of questions:** • The assessor will ask at least 8 questions to explore the apprentice's level of knowledge, skills and behaviours • Standardised open questions will be asked based on the evidence in the EPA portfolio • 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:** The interview must last 60 minutes. The independent assessor has the discretion to increase the time of the professional discussion by up to 6 minutes, to allow the apprentice to complete their last answer The apprentice may choose to end the interview based on an EPA portfolio early. The apprentice must be confident they have

	demonstrated competence against the assessment requirements for the interview based on an EPA portfolio The independent assessor must ensure the apprentice is fully aware of all assessment requirements. The independent assessor cannot suggest or choose to end the interview based on an EPA portfolio early, unless in an emergency. The independent assessor is responsible for ensuring the apprentice understands the implications of ending an assessment early if they choose to do so. The independent assessor may suggest the assessment continues. The independent assessor must document the apprentice's request to end the assessment early. **The Interview will be:** • conducted by 1 independent assessor • face to face or remote, as agreed • recorded in writing using the interview 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 EPA portfolio throughout the interview. EPA Portfolio: • The apprentice's Manager/Mentor will typically support the development of the EPA portfolio in accordance with company policy and procedures • Although questioning will cover ALL the elements of the standard (listed below in this section of the Specification), the assessor will prioritise areas according to what they see in the portfolio • For further guidance on the EPA portfolio refer to Section 5 Practical Guidance on EPA Portfolio

What topics will be covered?	**For further details refer to 'knowledge, skills and behaviours (KSBs) coverage below pages [20-30].**
When will the EPA portfolio be referred to?	The EPA portfolio: • will be reviewed by the independent assessor before the interview • can be referred to by the apprentice to illustrate their answers Note: the EPA portfolio is not directly assessed.
Grading	Fail, Pass or Distinction

Interview based on EPA portfolio knowledge, skills and behaviours (KSBs) coverage

The interview based on an EPA portfolio covers:

Task 1: Communication and working with others	Amplification and guidance (where required)
Teamwork	
K47 Team working principles	The apprentice should be able to: • describe the benefits of team working • explain how they can support the development of an effective team spirit to improve working relationships e.g. clear goals and objectives, effective communication, cooperation, collaboration and trust
S33 Apply team working principles	The apprentice should be able to use their portfolio to: • provide evidence of how they have worked successfully in a team • describe the principles they used to develop their working relationships with others
B6 Team-focus to meet work goals and support inclusivity. For example, support others, show respect to people from different trades, disciplines, backgrounds, and expertise	The apprentice should be able to use their portfolio to: • provide examples of how during their different work activities they have used a team focus approach to work with others to achieve their team goals

Task 1: Communication and working with others	Amplification and guidance (where required)
K48 The principles of equality, diversity, and inclusion in the workplace	The apprentice should be able to: • describe how the company promotes the principles of equality, diversity, and inclusion in the workplace, which may include equal opportunities, non-discrimination, inclusive polies and practices, diverse representation and training and education • describe some of the positive benefits on the workforce of applying the principles of equality, diversity, and inclusion in the workplace
Communication	
K49 Communication techniques - verbal and written. Industry terminology. Adapting style to audience	The apprentice should be able to: • describe the different methods of communication they use in their job role and the benefits and draw backs of one communication method over another for differing circumstances e.g. direct conversation – email, telephone call – in person • explain how they would differ their style of communication for different parties to achieve the best results e.g. explaining technical issues to another engineer or a member of the public

Task 1: Communication and working with others	Amplification and guidance (where required)
S34 Communicate with others to give and receive information for example, colleagues, customers, and stakeholders	The apprentice should be able to use their portfolio to: • provide examples of how they have used their communication skills in the course of their work • evidence how they have adapted their communication style dependent on who they are communicating with, and the information being given
S36 Produce or amend documents for example, handover notes, procedures, reports	The apprentice should be able to use their portfolio to: • provide evidence of technical documents they produced or amended in the course of their work activities e.g. cable plans they have amended to record joint positions, risk assessments which required additional information at a later stage
B5 Perform in a professional manner for example, polite, courteous, and respectful to customers and members of the public	The apprentice should be able to use their portfolio to: • provide examples of work locations where they were required to interact with customers or members of the public in a professional manner • describe the principles they followed to ensure they represented the company in a professional manner e.g. company clothing, identification badge, listening to concerns, respecting others' views

Task 1: Communication and working with others	Amplification and guidance (where required)
Information and digital technology	
K45 Information and digital technology. Computers and mobile devices. Software: email, word processing, databases, productivity and collaboration software, and work and asset management systems. General Data Protection Regulation (GDPR). Cyber security	The apprentice should be able to: • describe the different forms of digital information they encounter in their job role and the company processes for dealing with the different types of information e.g. work instructions, risk assessments, cable plans • identify the different types of digital devices they work with in their job role and the company processes they follow to ensure the information is kept secure within the business
S37 Use digital and information technology. Follow cyber security requirements. Comply with GDPR	The apprentice should be able to use their portfolio to: • provide examples of work projects where they have used different types of digital information and technology in their job role and how they have complied with the requirements of GDPR

Task 2: Sustainability	Amplification and guidance (where required)
K16 The power industry's net zero strategy. Principles of sustainability	Using their portfolio, the apprentice should be able to discuss the topic and provide examples of: • the actions and measures which their company puts in place to help reduce its carbon footprint and deliver outputs which mitigate the effect on climate change, reduce environmental pollution, and build a more sustainable energy future
S15 Apply sustainability principles for example, minimising waste	Using their portfolio, the apprentice should be able to: • provide examples of how they have used a sustainable approach in the jointing activities they have carried out e.g. safe storage and disposal of waste products • describe some of the actions the industry is taking to improving its sustainability e.g. renewable energy sources, use of battery vehicles, energy efficiency initiatives • identify some of the benefits of adopting a sustainable approach for the business and the environment
B2 Consider the environment and sustainability when using resources and carrying out tasks	Using their portfolio, the apprentice should be able to: • provide examples of cable jointing activities they have conducted where they have considered the environment in the way they have carried out the work e.g. waste management

Task 2: Sustainability	Amplification and guidance (where required)
	• describe how they can reduce the effect on the environment in the way they work and the resources they use e.g. types of plant, equipment, transport, materials they use and their safe disposal

Task 3: CPD and improvement activities	Amplification and guidance (where required)
Contribute to improvement activities	
S32 Identify areas for improvement. For example, in relation to quality, cost, time, safety, and environmental impact	The apprentice should be able to use their portfolio to: • provide examples of cable jointing projects they have worked on where they have put forward ideas or proposed solutions which have led to an improved work performance e.g. better use of cable jointing resources/materials, hazard identification, problem solving
Continued professional development	
S38 Carry out and record planned and unplanned learning and development activities	The apprentice should be able to use their portfolio to: • provide examples of activities they have carried out which have contributed to their professional development and provided valuable learning points e.g. courses they have attended, activities they have undertaken

Task 3: CPD and improvement activities	Amplification and guidance (where required)
B7 Committed to continued professional development to maintain and enhance competence	The apprentice should be able to: • describe how they have reflected on the activities undertaken and used the experience to enhance their skills, knowledge or understanding to improve their overall performance • describe any future plans they have to continue their professional development and how they feel the planned event/s will enhance their development

Task 4: Working on the highway, excavations and laying cables	Amplification and guidance (where required)
Plant or vehicle checks	
K15 Plant and vehicle check requirements	The apprentice should be able to: • identify the items to examine when conducting checks on their vehicle e.g. tyre condition, fluid levels etc • identify the items to examine when inspecting plant they use e.g. hydraulic compressors, plant trailers • describe the signs/information they look for when examining their vehicle and items of plant before use

Task 4: Working on the highway, excavations and laying cables	Amplification and guidance (where required)
S13 Conduct plant or vehicle checks	The apprentice should be able to use their portfolio to: • provide evidence of vehicle and/or plant checks they have carried out e.g. copies of check lists, inspection records
Location and avoidance of utilities	
K13 Methods for locating and avoiding utilities. Avoiding danger from underground services and overhead exposed conductors. The health and safety executive guidance and requirements: HSG 47 (Avoiding danger from underground services) and GS6 (Avoiding danger from overhead power lines)	The apprentice should be able to: • describe the company process and equipment used for the location and avoidance of underground utilities • describe the basic requirements and precautions of HSG 47 • describe the method for identifying overhead exposed conductors and the company procedure to follow when identified • describe the basic requirements and precautions of GS6
S10 Carry out visual inspection to identify evidence of overhead services and buried utilities. Use electronic locating equipment. Mark the position of services and sub-structures on the work site	The apprentice should be able to use their portfolio to: • provide evidence to identify work locations where they identified overhead line service or mains conductors which they needed to note on their risk assessment or take action to work safely

Task 4: Working on the highway, excavations and laying cables	Amplification and guidance (where required)
	• provide evidence to identify work locations where they have used cable avoidance tools to mark the position of services/substructures and identify/locate buried utilities
Excavations including working on highways	
K40 New Roads and Street Works Act (NRSWA). Signing, lighting, and guarding	The apprentice should be able to: • describe the requirements of the NRSWA Act and how they affect the way cable jointing activities are conducted on or near roadways • identify the precautions to take when setting up signing, lighting or guarding in the roadway • describe the considerations to take when setting up a NRSWA installation which affects the general public/pedestrians
K41 Mechanical equipment used in excavations and their limitations and exclusions	The apprentice should be able to: • describe the precautions to take when using a mechanical excavator on site to conduct excavations e.g. contact with persons, contact with utilities • identify the necessary precautions to consider when using hand held mechanical excavation equipment on site e.g. training, PPE

Task 4: Working on the highway, excavations and laying cables	Amplification and guidance (where required)
K42 Regulations and procedures for the safe excavation and maintenance of holes and trenches. Considerations for access and egress of excavations. Awareness of when excavation support systems are required	The apprentice should be able to: • identify a range of UK acts, regulations and guidelines which affect excavation work and how they to ensure safety on site, protect the environment and prevent damage to underground utilities • describe the precautions to take when working in and around excavations and the considerations for providing safe access and egress e.g. equipment, ground conditions • describe the process for assessing risk around excavations and the factors affecting when support systems are required e.g. excavation depth, soil conditions, distance of spoil from edge
S29 Erect and maintain signing, lighting and guarding	The apprentice should be able to use their portfolio to: • provide evidence of when they have carried out signing, lighting and guarding around excavations • describe the process for the regular checking and monitoring of installations
S30 Monitor works using mechanical excavators (banksman)	The apprentice should be able to use their portfolio to: • provide evidence of when they have monitored the work of a mechanical excavator operator and describe their responsibilities

Task 4: Working on the highway, excavations and laying cables	Amplification and guidance (where required)
S31 Inspect excavation arrangements before work for safe access and egress	The apprentice should be able to use their portfolio to: • provide evidence of when they have inspected excavations on site and conducted a risk assessment identifying the hazards and their control measures e.g. copies of risk assessments
Laying cables	
K43 Requirements for protecting cable from damage	The apprentice should be able to: • describe the company procedures for laying underground cables to the appropriate depth and the requirements for providing protection e.g. bedding material, ducting, cover tiles • describe the precautions taken when installing underground cables to prevent damage e.g. scuffing, scratching, maximum bending radius
S19 Install cables and apply protection	The apprentice should be able to use their portfolio to: • provide evidence of when they been responsible for installing underground cables and the measures they took to protect the cables and install them to meet the company requirements

Interview based on an EPA portfolio roles and responsibilities

Role	Responsibility
Independent Assessor	Record and report assessment outcome decisions for the apprentice, following instructions and using assessment recording documentation provided by Energy & Environment Awards. On behalf of Energy & Environment Awards, where necessary: • ensure the apprentice understands the implications of ending an assessment early • document the apprentice's request to end any assessment early
Employer/Training Provider	The interview 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 interview.
Energy & Environment Awards	Arrange for the interview to take place, in consultation with the employer/training provider and independent assessor.

Component 3: Trade test practical assessment with questions

Overview

Apprentices who have successfully completed and passed:

- the multiple-choice test
- the interview based on an EPA portfolio

will move onto completing the trade test practical with questions and trade test technical interview.

An employer assessor will conduct and assess the trade test practical assessment with questions. The employer assessor observes the apprentice completing a task or series of tasks set by their employer and asks questions. The employer must use a simulated environment for the trade test practical with questions. The assessment environment must closely relate to the apprentice's natural working environment. The assessment must be designed to meet the requirements of the PIDCJ Standard – Level 3.

Photographic records of the apprentice's outputs must be taken and retained as evidence, along with records of assessment documentation and any relevant supplementary questioning and the answers given during the test. The employer assessor conducting the assessment:

- must remain in visual contact with the apprentice throughout the trade test assessment
- will ask knowledge questions where competence is not confirmed through observation of natural performance and a record made of the event where relevant

The test will be awarded a fail, pass or distinction.

The trade test will be based on the trade test requirements and criteria set out in the PISF Assessment Plan.

The employer must produce the following materials to support the trade test practical assessment with questions:

- employer assessor assessment materials which include:
    - training materials
    - administration materials
    - guidance materials
    - grading guidance
    - question bank
- EPA guidance for the apprentice and their manager

The employer must be aware that the EPA materials are subject to quality assurance procedures including standardisation and moderation by Energy & Environment Awards.

Trade test mapping summaries for each pathway are provided in PIDCJ Supporting Documents:

- Appendix C, 'Trade Test Practical Assessment Requirements and Mapping Form

Each employer/provider must submit their trade test(s) to Energy & Environment Awards in advance of the testing process for standardisation and approval.

Step-by-Step Guide

The table below provides a step-by-step guide on how the trade test practical assessment with questions will be carried out:

Assessors	1 employer assessor, approved by Energy & Environment Awards. As a minimum the employer assessor will have recent relevant experience of the occupation or sector to at least occupational level 3 gained in the last 3 years or significant experience of the occupation or sector.
Practical structure	The trade test practical with questions must take 30 - 37.5 hours. The trade test practical may take place in parts but must be completed over no more than 21 working days. A working day is typically considered to be 7.5 hours long. The reason for this split is the apprentice will need to complete several tasks, which may require work on different apparatus. The apprentice may choose to end the trade test practical assessment early. The apprentice must be confident they have demonstrated competence against the assessment requirements for the assessment method. The employer assessor must ensure the apprentice is fully aware of all assessment requirements. The employer assessor cannot suggest or choose to end the assessment methods early, unless in an emergency. The employer assessor is responsible for ensuring the apprentice understands the implications of ending an assessment early if they choose to do so. The employer assessor may suggest the assessment continues. The employer assessor must document the apprentice's request to end the assessment early. The ratio of employer assessors to apprentices will comply with the employer's trade test assessment specification. The employer assessor must explain to the apprentice the format and timescales of the trade test practical assessment with

	questions tasks before they start. This does not count towards the assessment time. The employer assessor will ask standardised open questions from the employer's question bank (or create their own questions in line with Energy & Environment Awards training). Follow up questions may be asked as appropriate, to confirm their understanding of the rationale for actions taken and the choices made to complete the tasks. There may be breaks during the trade test practical assessment 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. The employer must manage invigilation of the apprentice during the assessment, to maintain security of the EPA, in line with their malpractice policy.
Where will the assessment take place?	The trade test practical with questions must be conducted in a simulated environment selected by the employer which reflects the apprentice's natural work environment.
What are the tasks that will be covered?	The apprentice will undertake the following activities: • prepare for power network cable jointer activities • organise and supervise a working party including receiving and clearing a safety document, and briefing a working party • maintain work site health, safety, and environmental compliance including completing a risk assessment • identify apparatus to be worked on • select, prepare, use and store tools and equipment • install, connect and repair distribution underground electrical supplies on low voltage cable networks • connect and repair apparatus on high voltage cable network

	• make and break live conductor connections on low voltage networks • identify a fault • complete work records

Who sets the task(s)?	The employer must develop a purpose-built assessment specification and question bank.
	
	The employer sets the task(s) based on their trade test assessment specification and guidance provided in this Specification.
	
	The employer must ensure that the EPA materials are subject to quality assurance procedures including standardisation and moderation by Energy & Environment Awards.
	
	The employer must produce the following materials to support the trade test practical with questions:
	
	• employer assessor assessment materials which include:
	  ○ training materials
	  ○ administration materials
	  ○ guidance materials
	  ○ grading guidance
	  ○ question bank
	• EPA guidance for the apprentice and their manager.
	
	The assessment specification and question bank must be reviewed at least once a year to ensure they remain fit-for-purpose.

What resources can the apprentice use?	Equipment and resources needed for the trade test practical assessment with questions must be: • provided by the employer • a suitable premises • the plant, machinery, equipment and PPE required for the job

	• in good and safe working condition Relevant work instructions/manuals must be available in hard copy or electronically.
How many questions will the apprentice be asked?	The employer assessor: • will ask at least 10 standardised open questions to assess the related underpinning knowledge • may ask follow-up questions in order to seek clarification.
What will the questions focus on?	The purpose of the questioning is to assess the apprentice's level of competence against the grading descriptors.
Grading	Fail, Pass or Distinction. If an apprentice fails a task or tasks in the trade test practical with questions, the apprentice must re-sit or re-take the assessment method in full and not just re-sit or re-take a failed task or tasks.

Trade test practical assessment with questions knowledge, skills and behaviours (KSBs) coverage

The trade test practical assessment with questions covers:

Trade Test Theme: Prepare for power network cable jointer activities	Amplification and guidance (where required)
K46 Planning, prioritising and time management techniques for self and working party. Live or dead working planning considerations	The apprentice should be able to: • demonstrate how they have planned their cable jointing activities which could include check lists for preparation, risk assessments of the work area, cable diagrams/drawings, written notes of planned activities • describe how they have prioritised the activities in their preparation to ensure the planned operations run smoothly and meet the required timescales • describe how they have taken into consideration how their work will affect others and the actions they can take to ensure all affected parties are informed and prepared e.g. other employees, members of the public • describe the safety precautions they have planned to allow live jointing operations to commence e.g. safe access, egress, live working PPE, live working tools, test equipment, person in attendance

Trade Test Theme: Prepare for power network cable jointer activities	Amplification and guidance (where required)
	• describe how the planning requirements for low voltage operations and high voltage operations differ e.g. receipt of safety documents, setting up of spiking gun
S1 Review drawings, instructions or information to understand the task for example, work instructions, complex wiring diagrams, design specifications, utility plans, on-line search documents	The apprentice should be able to demonstrate their ability to: • identify and interpret differing types of underground cable plans and line diagrams to identify cable types and joint positions e.g. schematics, composite mains records • interpret cable jointing specification diagrams to identify critical components, measurements and tolerances e.g. cable manufacturers specifications, company cable jointing manual • use company online systems to identify cable locations, cable and joint types, underground apparatus • interpret work/job instruction sheets to identify the work to be conducted and any restrictions
S2 Prioritise and plan work with consideration for safety, environmental impact, quality, and cost	The apprentice should be able to demonstrate their ability to: • plan and organise their work to achieve the most effective and efficient outcome in terms of the resources required by themselves

Trade Test Theme: Prepare for power network cable jointer activities	Amplification and guidance (where required)
	and their working party e.g. time, cost, people, materials, plant and equipment • assess the safety requirements for the work to be conducted by themselves and their working party and have a clear plan to implement a safe system of work • describe the company's justification for conducting live low voltage jointing activities on the underground network e.g. approved procedures, safety rules, competent persons, suitable conditions, approved tools and equipment • consider and identify the environmental impact of their planned work and have a clear plan to minimise the impact to an acceptable company level e.g. noise, fumes, waste products • develop a plan of work to conduct their cable jointing activities in a logical step by step process which meets the company specification requirements and allows for checking of the final product
S3 Identify and organise resources to complete tasks	The apprentice should be able to demonstrate their ability to: • identify the range of resources required to complete their planned cable jointing activities

Trade Test Theme: Prepare for power network cable jointer activities	Amplification and guidance (where required)
	• describe the company processes involved for organising the differing range of resources required e.g. materials, people, plant, equipment • organise the range of resources required to be available at the time of need for the work to be conducted

Trade Test Theme: Organise and supervise a working party	Amplification and guidance (where required)
S4 Receive and clear a safety document (permit to work). Brief a working party	The apprentice should be able to demonstrate their ability to: • interpret the content of the safety document issued to them and identify the safety precautions specified • describe their responsibilities when taking receipt of a safety document for work on the network • brief their working party on the content of the safety document and answer and confirm it has been understood • answer any questions in relation to the safety document and confirm their response has been understood • clear the issued safety document on completion of the work confirming all necessary requirements are in place

Trade Test Theme: Organise and supervise a working party	Amplification and guidance (where required)
B3 Take ownership for work and responsibility for its impact on others. For example, self-motivated, disciplined in the approach to work tasks, identify and deal appropriately with distractions to enable tasks to be achieved, work carried out in line with standards	The apprentice should be able to demonstrate their ability to: • take ownership of the work being conducted by maintaining site safety and monitoring the site conditions and work of others on site • provide guidance to their working party where required and ensure work progresses in a safe and efficient manner • ensure the work is conducted in an efficient manner without distractions and meets the required company standards and specifications

Trade Test Theme: Maintain work site health, safety, and environment compliance	Amplification and guidance (where required)
K7 The hazards associated with work on or near electrical power networks	The apprentice should be able to: • describe the hazards associated with work on or near electrical cable jointing networks and the actions required to identify these hazards
K11 Risk assessments and method statements. Emergency procedures. Personal protective equipment (PPE). Manual handling. Fire safety	The apprentice should be able to: • explain the purpose and method of conducting an on-site risk assessment and the company process for recording the findings

Trade Test Theme: Maintain work site health, safety, and environment compliance	Amplification and guidance (where required)
	• describe the purpose and usage of company Method Statements and the type of information they contained • describe the company's emergency procedures in the event an incident on site e.g. electric shock, flashover, ground collapse in joint hole • describe the company procedure for the inspection and usage of their personal protective equipment used for cable jointing activities e.g. live working gloves, face and eye protection, insulated tools • describe the safe application of manual handling techniques e.g. assess the load, TILE (Task, Individual, Load, Environment), two man lift • describe the precautions to take to minimise the risk of fire on site and the actions to take in the event of fire
K18 Recycling and waste management requirements	The apprentice should be able to: • describe the company's process for the control of hazardous and non - hazardous cable jointing waste on-site e.g. excess jointing resin, leaking bitumen, steel armours, cable sheath

Trade Test Theme: Maintain work site health, safety, and environment compliance	Amplification and guidance (where required)
	• describe the company's process for the recycling of cable jointing waste e.g. recovered cable and joints, cable jointing fittings, excess cable lengths
S8 Identify hazards and risks and apply control measures	The apprentice should be able to demonstrate their ability to: • conduct an on-site risk assessment in a safe and controlled manner, identifying hazards and gauging the risk to implement appropriate control measures • record their findings in a clear and appropriate manner in line with company procedures and requirements • monitor and maintain site safety conditions and adjust their risk assessment control measures if the site conditions change
S9 Apply health and safety procedures in compliance with regulations, standards, and guidance	The apprentice should be able to demonstrate their ability to: • apply the relevant health and safety procedures throughout the duration of their cable jointing activities work which meet the required company and regulatory requirements • be aware of others on site and how their own work or the work of others may impact the working conditions and require additional safe measures e.g. work on or near remote end of cable being conducted

Trade Test Theme: Maintain work site health, safety, and environment compliance	Amplification and guidance (where required)
S11 Apply measures to leave power work environments in a safe condition	The apprentice should be able to demonstrate their ability to: • leave their work area in a safe condition on completion of their work e.g. removal of tripping hazards, waste material, signing, lighting and guarding, reinstatement
S14 Segregate waste for reuse, recycling, and waste transfer	The apprentice should be able to demonstrate their ability to: • segregate their waste for re use/recycling and transfer in line with company procedures e.g. excess/recovered underground cable and fittings • segregate their waste into hazardous and non-hazardous for transfer and disposal in line with company procedures e.g. excess jointing resin/waste plastic from joint casing
B1 Prioritise health and safety. For example, risk aware, minimise risks, and proactively work towards preventing accidents	The apprentice should be able to demonstrate their ability to: • take a proactive approach to identifying hazards and maintaining the safety of themselves and others on site e.g. toolbox talks, regular monitoring and checking of site conditions

Trade Test Theme: Tools and equipment	Amplification and guidance (where required)
K23 Insulated tools - selection and care considerations	The apprentice should be able to: • identify the correct use of each insulated tool and the inspection procedure to confirm each tool is fit for purpose • describe the care and maintenance procedure to keep each insulated tool keep clean, dry and stored safely • describe the company process following the identification of a sub-standard tool or piece of equipment
K24 Spiking gun set up and maintenance requirements	The apprentice should be able to: • describe the company procedure for the setting up of a spiking gun and its purpose • describe the operational procedure for the use of a spiking gun and the limit of their responsibilities • describe the maintenance and storage procedures to keep the equipment in a good working order
S17 Select, check, prepare, use or operate, and store personal tools and equipment	The apprentice should be able to demonstrate their ability to: • select, inspect and use the correct cable jointing tools and equipment in a methodical manner in line with the company procedures and method statements

Trade Test Theme: Tools and equipment	Amplification and guidance (where required)
	• clean and store their personal tools and equipment in an appropriate manner to maintain their condition for future use
S18 Set up spiking gun	The apprentice should be able to demonstrate their ability to: • inspect a cable spiking gun to be used on an underground cable and confirm its condition • set up the cable spiking gun on an underground cable to be spiked in a methodical and competent manner and confirm its readiness for usage in line with company procedures • dismantle, clean and store the cable spiking gun on the underground cable in a safe and secure manner

Trade Test Theme: Identify apparatus	Amplification and guidance (where required)
K25 Positive methods for apparatus identification	The apprentice should be able to: • describe the company procedures for the identification of cable jointing apparatus to be worked on e.g. underground cables, underground link boxes, LV pillars • interpret underground cable plans and schematic diagrams to identify differing types of underground apparatus

Trade Test Theme: Identify apparatus	Amplification and guidance (where required)
	• describe the different types and sizes of underground cables used on the network, their voltages and physical characteristics e.g. sheath colour, sheath materials, steel tape/wire armour • describe the range of equipment used and its method to correctly identify the apparatus to be worked on • e.g. CAT (Cable Avoidance Tools) and Genny, cable identifier
S6 Identify apparatus to be worked on	The apprentice should be able to demonstrate their ability to: • use underground cable plans and schematic diagrams to identify the underground apparatus to be worked on in line with company procedures • use the appropriate equipment to identify the correct apparatus to be worked on in line with company procedures

Trade Test Theme: Install, connect and repair distribution underground electrical supplies on low voltage cable networks	Amplification and guidance (where required)
K27 Types of earthing systems, low voltage (LV) services and terminations	The apprentice should be able to:

Trade Test Theme: Install, connect and repair distribution underground electrical supplies on low voltage cable networks	Amplification and guidance (where required)
	• describe the types of underground earthing used on the company network and customer installations • explain the difference between the differing types of earthing systems e.g. PME, TNC-S TN-S, TT • explain the requirements for the differing types of earthing for a range of installation types e.g. multi occupancy, caravan sites, swimming pools
K30 LV mains jointing techniques – mains and service; termination of services into cut outs	The apprentice should be able to: • describe the company procedures for conducting live and dead low voltage cable jointing techniques on mains cables e.g.wavecon, consac, pilc • describe the company procedures for conducting live and dead low voltage cable jointing techniques on service cables e.g. CNE, SNE, PILC • identify the new and existing range of cut out types used by the company on the network e.g. CNE, SNE, compound boxes, heavy duty, multi service distribution boards

Trade Test Theme: Install, connect and repair distribution underground electrical supplies on low voltage cable networks	Amplification and guidance (where required)
	• describe the method used to terminate service cables into the differing types of cut out used by the company
K31 Joint protection materials and the considerations in application techniques to prevent moisture ingress	The apprentice should be able to: • describe the purpose and methods used for protecting underground cable joints from the ingress of moisture • describe the materials and techniques used to prevent the egress of moisture into cable joints e.g. preformed joint shells, putty, joint resin • identify the range of PPE and safety arrangements required to enable the safe use of cable resin • explain the technique used for fitting a preformed joint shell and how the application technique will prevent moisture ingress • describe the technique for preparing cable jointing resin ready for use and the safety requirements • describe the method for filling the joint shell with cable jointing resin and checking for leakage • describe the company procedure for safely disposing of unused cable jointing resin and waste materials

Trade Test Theme: Install, connect and repair distribution underground electrical supplies on low voltage cable networks	Amplification and guidance (where required)
S20 Follow live working procedures	The apprentice should be able to demonstrate their ability to: • inspect and prepare their live cable jointing PPE, tools and equipment ready for use • follow the company's live cable jointing procedures to open and identify the correct cable to be worked on • carry out live testing operations in line with the company's live jointing procedures
S21 Joint and terminate cables (modern XPLE insulated, PVC sheathed, and paper insulated lead sheath) for low voltage cable networks using cable connectors including fitting and terminating services into cut outs. Apply system earthing connections and joint protection	The apprentice should be able to demonstrate their ability to: • use live working jointing techniques to prepare the cable to be jointed to the correct specifications and tolerances e.g. core separation, earth bonding • carry out shrouding techniques to enable live working procedures in line with company policy • carry out live low voltage cable jointing techniques to make/break neutral and earthing conductors e.g. cross bonding

Trade Test Theme: Install, connect and repair distribution underground electrical supplies on low voltage cable networks	Amplification and guidance (where required)
	• carry out live low voltage cable jointing techniques on a range of different mains and service cables e.g. Wavecon, Consac and PILC, Transitional, Branch and service joints • install cable joint protection in line with company procedures e.g. cable connector covers, cable shell, pvc tape, heat shrink • terminate a range of service cables into cutouts including various earthing arrangements in line with company procedures e.g. Concentric Neutral Earth, Separate Neutral Earth

Trade Test Theme: Connect and repair apparatus on high voltage cable networks	Amplification and guidance (where required)
K29 High voltage (HV) jointing techniques up to 11kV on both modern and legacy cable types	The apprentice should be able to: • identify the different modern and older types of cable used in the company's underground high voltage network • describe the differing materials and construction characteristics of the modern and older type high voltage cables

Trade Test Theme: Connect and repair apparatus on high voltage cable networks	Amplification and guidance (where required)
	• identify the different types of joint required for modern and older cable types • describe how the jointing techniques and requirements differ across the range of modern and older type high voltage cables
K32 Phasing colours and diagrams	The apprentice should be able to: • describe how to identify the phasing colours of cables • interpret phasing diagrams to identify the correct cable phasing colours, numbers and connection points
S22 Joint and terminate cables (modern XPLE and paper insulated) using joint kits on high voltage cables up to 11kv operating voltage. Apply joint protection	The apprentice should be able to demonstrate their ability to : • inspect and prepare their high voltage cable jointing ppe, tools and equipment ready for use • follow the company's high voltage cable jointing procedures to prepare the high voltage cables to be worked on • carry out the jointing and termination of a range of differing high voltage cables and joint types to meet the company standards • apply joint protection to high voltage cable joints within specified tolerances in line with company procedures

Trade Test Theme: Connect and repair apparatus on high voltage cable networks	Amplification and guidance (where required)
S23 Receive phasing colours for HV jointing tasks and interpret phasing diagrams	The apprentice should be able to demonstrate their ability to : • identify the correct cable cores of a high voltage cable after being issued the phasing colours • interpret phasing diagram information to identify the correct cable phasing colours when preparing to conduct high voltage jointing activities

Trade Test Theme: Make and break live conductor connections	Amplification and guidance (where required)
K28 Pre and post connection testing techniques: insulation and continuity, voltage, polarity, earth loop impedance, phase rotation	The apprentice should be able to: • describe the range of pre connection testing procedures required on low voltage cables and their purpose • describe the expected results from the range of testing procedures when conducted on healthy and faulted cables • describe the range of post connection testing procedures required on low voltage cables and their purpose

Trade Test Theme: Make and break live conductor connections	Amplification and guidance (where required)
	• state the correct results and permitted tolerances for post energisation testing procedures e.g voltage, earth loop, polarity, phase rotation
S24 Make and break live conductor connections on LV underground networks	The apprentice should be able to demonstrate their ability to : • inspect and prepare their low voltage cable jointing PPE, tools and equipment ready for use • follow the company's low voltage cable jointing procedures to prepare the cables to be worked on • carry out shrouding techniques to enable live working procedures in line with company policy • carry out the making and breaking of low voltage cable conductors in line with company policies and procedures
S25 Perform testing procedures before and after making and breaking connections	The apprentice should be able to demonstrate their ability to : • carry out a range of pre connection testing procedures on low voltage cables in line with company procedures • interpret the expected results from the range of testing procedures conducted on healthy and faulted cables • carry out phasing out procedures before making live mains connections

Trade Test Theme: Make and break live conductor connections	Amplification and guidance (where required)
	• conduct a range of post connection testing procedures on low voltage cables

Trade Test Theme: Identify a fault	Amplification and guidance (where required)
K36 The symptoms and causes of common faults on electrical power circuits, plant and apparatus	The apprentice should be able to: • describe the types of faults which can occur on the underground cable networks and their causes e.g. third party damage, water ingress • describe the symptoms and effects of differing types of faults which can occur on underground cable networks • describe the methods used to identify and locate a range of fault conditions on underground cable networks
S26 Identify fault. Test to find the fault condition	The apprentice should be able to demonstrate their ability to: • use a range of test instruments to prove the underground cable network fault condition • use a range of procedures and equipment to locate the underground cable fault position e.g. cable diagrams, time delay reflector, CAT and Genny

Trade Test Theme: Complete work records	Amplification and guidance (where required)
K44 Documentation requirements: data recording, documentation control, auditable records	The apprentice should be able to: • identify the range of documentation and company systems used to plan and organise work on the underground network e.g. job instructions • describe the types and requirements of safety documentation used for work on the underground network e.g risk assessments, permit to work, limitation of access • describe the requirements and process used to record post work cable jointing activities e.g. plan updates, service records
S35 Record information	The apprentice should be able to demonstrate their ability to : • carry out and record risk assessment information in line company procedures • record new service installation test results and asset details e.g. cable size, cable type, installation type, earthing arrangements • record joint locations with measurements for cable mapping records

Trade test practical assessment with questions roles and responsibilities

Role	Responsibility
Employer Assessor	Provide written and verbal instructions for the trade test practical with questions. Administer and assess the trade test practical with questions in line with their company's requirements, and Energy & Environment Awards requirements including using resources approved by Energy & Environment Awards. Undertake standardisation training before conducting an EPA for the first time, when the EPA is updated, and periodically on a risk based approach. Make preliminary grading decisions for the trade test practical with questions which will be subject to Energy & Environment Awards moderation process. Record and report assessment outcome decisions to Energy & Environment Awards. On behalf of Energy & Environment Awards, where necessary: • ensure the apprentice understands the implications of ending an assessment early • document the apprentice's request to end any assessment early Comply with the IQA requirements of Energy & Environment Awards.

Role	Responsibility
Employer/Training Provider	Provide the venue for the trade test practical with questions which must be suitably equipped to allow the apprentice to attempt all aspects of the trade test practical with questions. Provide all necessary tools and equipment for the apprentice. Develop and produce an assessment specification, question bank, assessment materials, and assessment recording documentation for the trade test practical with questions in line with the EPA plan. Confirm arrangements with Energy & Environment Awards for the standardisation and approval of the trade test practical with questions, question bank, assessment materials, and assessment recording documentation. Appoint employer assessors in line with the requirements of this EPA plan. Appoint administrators, invigilators and any other roles required to facilitate the trade test practical assessment with questions. Maintain the security of the trade test practical with questions including verifying the identity of the apprentice, invigilation, and security of materials. Arrange for standardisation training for their employer assessors with Energy & Environment Awards.

Role	Responsibility
	Give Energy & Environment Awards at least two weeks notice of the date of the trade test practical with questions and trade test technical interview to enable Energy & Environment Awards to schedule quality assurance. Not start any trade test practical with questions until Energy & Environment Awards has confirmed the apprentice has passed the multiple-choice test and interview based on an EPA portfolio. Maintain and apply a policy for the declaration and management of conflict of interests and independence for the trade test practical with questions. Submit completed assessment documentation to Energy & Environment Awards within 5 working days from the last assessment day relating to the trade test practical assessment with questions or trade test technical interview.
Energy & Environment Awards	Provide information, advice, and guidance to enable an employer to develop a trade test practical with questions specification, question bank, assessment materials, and assessment recording documentation. Undertake standardisation of the employer's trade test practical assessment with questions, question bank and assessment materials before the employer conducts an assessment for the first time, and periodically on a risk-based approach.

Role	Responsibility
	Approve the employer's assessment specification, question bank, assessment materials, and assessment recording documentation to be used by employer assessors. Confirm employer assessors have been appointed in line with the requirements of the PIDCJ EPA Plan. Conduct standardisation training with employer assessors before they deliver an EPA, when the EPA is updated, and at least once a year.' Conduct on-going moderation across all the employer assessors' decisions according to a sampling plan, with associated risk rating of employer assessors. Confirm the grade for the trade test practical with questions through their internal quality assurance (IQA) procedures.

Component 4: Trade test technical interview

Overview

The trade test technical interview allows for testing of responses where there are a range of potential answers. It is established practice in the power industry and supports regulatory requirements.

Step-by-Step Guide

The table below provides a step-by-step guide on how the trade test technical interview will be carried out:

Assessors	1 employer assessor approved by Energy & Environment Awards will conduct the trade test technical interview. As a minimum the employer assessor will have recent relevant experience of the occupation or sector to at least occupational level 3 gained in the last 3 years or significant experience of the occupation or sector.
Interview	The employer assessor will ask at least six questions to explore the apprentice's level of knowledge, skills and behaviours. The employer assessor must use the questions from their employer's question bank or create their own questions in line with Energy & Environment Awards training. 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:** The trade test technical interview must last for at least 60 minutes. The apprentice may choose to end the trade test technical interview early. The apprentice must be confident they have demonstrated competence against the assessment requirements for the trade test technical interview. The employer assessor must ensure the apprentice is fully aware of all assessment

	requirements. The employer assessor cannot suggest or choose to end the trade test technical interview early, unless in an emergency. The employer assessor is responsible for ensuring the apprentice understands the implications of ending an assessment early if they choose to do so. The employer assessor may suggest the assessment continues. The employer assessor must document the apprentice's request to end the assessment early. **The trade test technical interview will be:** • face to face or remote, as agreed • recorded in writing using the trade test technical interview record template approved by Energy & Environment Awards • video recorded using relevant technology such as Microsoft Teams or an audio recording device • conducted under examination conditions The employer must give an apprentice 2 weeks notice of the trade test technical interview.
What topics will be covered?	The purpose of the employer assessor's questions is to assess the apprentice's competence against the following themes: • role and responsibilities • electrical danger and control • electrical plant and apparatus • low voltage networks • fault diagnosis • asset security
Grading	Fail or Pass

Trade test technical interview knowledge, skills and behaviours (KSBs) coverage

Interview Theme: Role and responsibilities	Amplification and guidance (where required)
K4 Cable jointer's role and responsibilities. Limitations of role and escalation procedures	Apprentices should be able to: • describe the duties of a cable jointers role within their business e.g. their range of work and general conduct • describe their range of responsibilities in relation to the relevant company policies and procedures e.g. health and safety requirements, methods of work, environmental practices • describe the limitations of their role as a cable jointer e.g. levels of authority for decision making • describe the company processes for raising issues/seeking confirmation and raising objections when necessary
K5 Model Distribution Safety Rules (MDSR) definition of persons: supervising a working party, competent, authorised and senior authorised. Authorisation roles and responsibilities in relation to working under safety documentation	Apprentices should be able to: • describe the definition of a Competent Person in accordance with their company safety rules and their mandatory requirements • explain the responsibilities of a Competent Person in relation to the supervision of a working party for cable jointing activities

Interview Theme: Role and responsibilities	Amplification and guidance (where required)
	• describe the role and responsibilities of a Competent Person in relation to taking receipt of a safety document to achieve safety from the system e.g. Permit for Work • describe the difference between the roles of an Authorised Person, a Senior Authorised Person and a Control Person and their duties in relation to work to be carried out on underground cables under a safety document e.g. Permit for Work
S5 Report or escalate issues outside limits of responsibility	Apprentices should be able to: • provide examples of when they raised specific issues or sought clarification with their line management to resolve work related issues e.g. unsafe excavation conditions, identified cable damage, hazardous road conditions
B4 Respond and adapt to work demands. For example, adapt working methods to reflect changes in working environment, take initiative - making on the spot decisions, re-prioritise workloads to react to emergency response and to fault scenarios	Apprentices should be able to: • provide examples of when they had to adapt or change their approach to their cable jointing activities to resolve a specific issue and explain how this change allowed them to maintain safe working practices and meet the work requirements

Interview Theme: Electrical danger - control and first aid	Amplification and guidance (where required)
K8 The dangers of electricity and how an electric shock can be received: direct contact, induced (impressed) voltage, and arcing. Electric shock emergency procedures	Apprentices should be able to: • explain the different ways an electric shock can be received and describe examples of each which are relevant to their job role as a cable jointer • describe the potential danger of secondary incidents following an electrical shock e.g. disorientated, loss of balance • describe how to assess the situation of a person receiving an electric shock before attempting to deal with the situation • describe the company procedure for removing/isolating the source of supply dependent on the situation • describe the company emergency procedure for summoning assistance and the information required when reporting the incident
K12 Emergency first aid	Apprentices should be able to: • describe the company procedure for rendering emergency first aid to the victim of an electric shock • describe the different methods of treatment for different conditions e.g. unconscious or conscious casualty, no sign of life, burns

Interview Theme: Electrical danger - control and first aid	Amplification and guidance (where required)
	• describe the actions to take while waiting for assistance to arrive dependent on the situation e.g. warn others, maintain safe environment
K34 HV electrical safe system of work control measures for working on underground cable networks: making the cable network safe (dead, isolated and earthed), screening from live equipment, identification (visual and identification devices), proven dead (visual connection to earthed equipment or cable spike), and released for work (with a safety document)	Apprentices should be able to: • describe the company process for identifying the location of HV cables to be worked on e.g. network plans, identification methods and equipment used • explain the process for using cable location equipment and marking/recording the cable route • explain the steps in the company procedure for making the cable safe (dead, isolated and earthed) for work to be carried out • explain the company procedure for screening of HV cables from live equipment e.g. methods and equipment used • explain the company procedure for identifying the cable to be worked on e.g. identification methods and equipment used • explain the company procedure for confirming the HV cable to be worked on has been “proven dead” e.g. requirements for visual

Interview Theme: Electrical danger - control and first aid	Amplification and guidance (where required)
	inspection of earthing, roles and responsibilities of persons involved in the use of a cable spiking gun • explain the roles and responsibilities of persons involved in the company's procedure for issuing a safety document for the release of a HV cable to be worked on
K35 LV electrical safe system of work control measures, before and during work, for working on cables that have been made dead: isolation process, identification and proving dead, mitigation of risk from cables becoming live from alternative sources, and screening from live equipment	Apprentices should be able to: • describe the company process for finding the location of LV cables to be worked on e.g. network plans, identification methods and equipment used • explain the steps in the company procedure for isolating an LV cable for work to be carried out and the procedure for proving dead • explain the company process for the identification of an LV cable to be worked on • explain the actions which can be carried out to mitigate the risk of cables becoming live from alternative sources e.g. customers generators, micro generation battery storage/solar panels • company procedure for proving an LV cable to be dead before being worked on e.g. testing equipment and procedures

Interview Theme: Electrical danger - control and first aid	Amplification and guidance (where required)
	• explain the company method used for screening the LV jointing work area from live equipment e.g. adjacent cables, street lights • describe the company's live working policy and the justifications for carrying out live low voltage cable jointing operations • explain the company process for preparing to carry out live low voltage cable jointing activities e.g. risk assessment, site safety arrangements, live working PPE, tools, equipment and procedures • explain the company procedure for identifying and testing live LV cables to be worked on e.g. testing equipment and procedures • explain the company procedure for approaching and work on damaged low voltage cables e.g. minimum safety clearance
S12 Respond in the event of an emergency first aid situation including situations where there is electrical risk	Apprentices should be able to: • describe the actions they would take in the event of an emergency first aid situation e.g. assessing the situation, summoning assistance, informing others, providing first aid, site management, access arrangements

Interview Theme: Electrical plant and apparatus	Amplification and guidance (where required)
K22 Power engineering electrical plant and apparatus, the properties and purpose of transformers, switchgear, earthing devices, voltage control and automated equipment	Apprentices should be able to: • identify the different pieces of electrical plant and apparatus which makes up the power distribution network and describe the fundamental purpose of each piece in the network • identify the symbols used on network diagrams to depict a range underground plant and apparatus • describe the methods for controlling network voltage and the types and purpose of the automated equipment used on the network e.g. circuit breakers, tap changers
S7 Interpret network schematic diagrams and geographic records to identify running arrangements	Apprentices should be able to: • demonstrate their ability to interpret network diagrams and cable records to identify the location and run of a range of underground cable sizes and types • demonstrate their ability to identify the running arrangements of cable plans e.g. bunched cables, open points

Interview Theme: Low voltage networks	Amplification and guidance (where required)
K33 LV network running arrangements, fusing and discrimination. Different LV switching equipment: air circuit breakers, links and fuses. LV operational switching and testing requirements and procedures. Methods of isolation. Considerations when paralleling networks	Apprentices should be able to: • describe differing types of low voltage network arrangements and the advantages and disadvantages of each e.g. ring and radial circuits • describe different types of low voltage equipment used for making and breaking network connections and the properties of each type e.g. purpose, ratings, limitations of operation – making/breaking • describe the typical methods used for conducting switching operations which maintain supplies to the highest amount of customers • describe the equipment and methods used to create a point of • describe the purpose and benefits of paralleling underground circuits and the items to consider when parallelling circuits • describe the equipment used to isolate circuits and the testing procedures to confirm isolation has been achieved

Interview Theme: Fault diagnosis	Amplification and guidance (where required)
K37 Problem-solving and fault-finding techniques: non-invasive visual examinations, invasive physical examinations of plant, testing procedures, root cause analysis	Apprentices should be able to: • describe the logical process for identifying the location of an underground cable fault from a known source or customers' supply • describe the precautions to take when investigating fault situations and the difference between invasive and non-invasive inspection • describe the purpose of the different types of testing procedures which can be carried out on a circuit e.g. polarity, continuity, voltage, earth loop impedance, phase rotation • describe the company procedure for conducting the different types of cable testing procedures • state the benefits of conducting a root cause analysis of an underground cable fault
K38 Fault diagnostic equipment purpose and operation: time domain reflectometer (TDR), low voltage faults sniffer. Fitting and setting up of auto-reclose equipment	Apprentices should be able to: • identify the different types of underground cable fault diagnosis equipment used by the company • describe the purpose of the different types of diagnostic equipment and the method of use on the network • describe how to fit and set up auto reclose equipment on the underground network and explain how to interpret the results gained

Interview Theme: Fault diagnosis	Amplification and guidance (where required)
S27 Conduct fault diagnosis on underground cable networks to identify underlying cause	Apprentices should be able to: • demonstrate their ability to carry out fault diagnosis techniques on a range of underground cable faults e.g. phase to phase, phase to earth, no supply • explain the processes they have followed to logically identify the underlying cause of the faults they have investigated • describe the fault diagnostic equipment they have used and its method of use e.g. test lamps, time domain reflectometer (TDR), low voltage faults sniffer, auto-reclose equipment
S28 Make recommendations for the repair or restoration of plant or apparatus based on the findings of diagnostic procedures	Apprentices should be able to: • explain how they interpreted the results of their fault finding activities and their reasoning for the results obtained • explain how based on the diagnostic results obtained they have made recommendations to repair/restore the cable faults • explain how they have planned to repair/restore the cable faults identified in a step by step logical manner

Interview Theme: Asset security	Amplification and guidance (where required)
K14 Asset security requirements	Apprentices should be able to: • demonstrate their knowledge of the requirements for the protection of company assets and the processes followed to keep assets secure e.g. safe storage of cable and materials, vehicle and plant security, prevention of illegal extraction from the network
S16 Apply security measures	Apprentices should be able to: • demonstrate the measures they have taken to ensure the network assets are protected from issues such as third party interference, unauthorised access and theft e.g. locking substations and storage areas, locking vehicles and anti-theft devices to plant, fitting security seals to network cutout fuses

Trade Test Technical Interview Roles and Responsibilities

Role	Responsibility
Employer Assessor	Administer and assess the trade test technical interview in line with their company's requirements, and Energy & Environment Awards requirements including using resources approved by Energy & Environment Awards. Undertake standardisation training before conducting an EPA for the first time, when the EPA is updated, and periodically on a risk based approach. Make preliminary grading decisions for the trade test technical interview which will be subject to Energy & Environment Awards moderation process. Record and report assessment outcome decisions to Energy & Environment Awards. On behalf of Energy & Environment Awards, where necessary: • ensure the apprentice understands the implications of ending an assessment early • document the apprentice's request to end any assessment early. Comply with the IQA requirements of Energy & Environment Awards.

Role	Responsibility
Employer/Training Provider	Develop and produce an assessment specification, question bank, assessment materials, and assessment recording documentation for the trade test technical interview in line with the EPA plan. Confirm arrangements with Energy & Environment Awards for the standardisation and approval of the trade test technical interview question bank, assessment materials, and assessment recording documentation. Appoint employer assessors in line with the requirements of this EPA plan. Maintain the security of the trade test technical interview including verifying the identity of the apprentice, invigilation, and security of materials. Arrange for standardisation training for their employer assessors with Energy & Environment Awards. Give Energy & Environment Awards at least two weeks notice of the date of the trade test technical interview to enable Energy & Environment Awards to schedule quality assurance. Not start any trade test technical interview until Energy & Environment Awards

Role	Responsibility
	confirms that the apprentice has passed the multiple-choice test and interview based on an EPA portfolio. Maintain and apply a policy for the declaration and management of conflict of interests and independence for the trade test technical interview. Submit completed assessment documentation to Energy & Environment Awards within 5 working days from the last assessment day.
Energy & Environment Awards	Provide information, advice, and guidance to enable an employer to develop a trade test technical interview specification, question bank, assessment materials, and assessment recording documentation. Undertake standardisation of the employer's trade test technical interview, question bank and assessment materials before the employer conducts an assessment for the first time, and periodically on a risk-based approach. Approve the employer's assessment specification, question bank, assessment materials, and assessment recording documentation to be used by employer assessors. Confirm employer assessors have been appointed in line with the requirements of

Role	Responsibility
	the PIOL EPA Plan. Conduct standardisation training with employer assessors before they deliver an EPA, when the EPA is updated, and at least once a year. Conduct on-going moderation across all the employer assessors decisions according to a sampling plan, with associated risk rating of employer assessors. Confirm the grade for the trade test technical interview through their internal quality assurance (IQA) procedures.

Section 3: Grading and grading criteria

Component 1: Multiple-choice test

The following grade boundaries apply to the multiple-choice test:

Grade	Minimum mark	Maximum mark
Fail	0	27
Pass	28	40

Component 2: Interview based on an EPA portfolio

The apprentice must demonstrate KSBs in an integrated way.

A Fail will be awarded if an apprentice has not achieved **all** the Pass criteria.

To gain a Pass, an apprentice must successfully achieve **all** the descriptors for each KSB, as shown below.

To achieve a Distinction an apprentice must successfully achieve **all** the Pass descriptors and **all** of the Distinction descriptors

Interview (based on an EPA portfolio)	To achieve a Pass the apprentice must achieve ALL of the following:
Task 1: Communication and working with others	
Communication K49 S34 S36 B5	Describes how they communicate in a professional manner by using communication techniques and industry terminology suitable for the context Describes how they apply written communication techniques to produce or amend documents in their work that are suitable for the context
Information and digital technology K45 S37	Describes how they use information and digital technology – computers and mobile devices - in the workplace in compliance with GDPR and their organisation's cyber security requirements

Interview (based on an EPA portfolio)	To achieve a Pass the apprentice must achieve ALL of the following:
Teamwork K47 K48 S33 B6	Describes how they apply team working principles to meet work goals and support inclusivity in line with their company's policy on equality, diversity, and inclusion
Task 2: Sustainability	
Sustainability K16 S15 B2	Describes how they consider and apply the principles of sustainability in their own work to support their employer's and the power industry's net zero strategy
Task 3: CPD and improvement activities	
Continued professional development S38 B7	Outlines the planned and unplanned learning and development activities they have carried out recorded and shows a commitment to future continued professional development to maintain and enhance competence
Contribute to improvement activities S32	Describes how they have identified an area for improvement in the workplace
Task 4: Working on the highway, excavations and laying cables	
Plant or vehicle checks K15 S13	Describes how they conduct plant or vehicle checks in line with company requirements
Location and avoidance of utilities K13 S10	Describes how they carry out visual inspections, use electronic locating equipment to identify evidence of overhead services and buried utilities, and

Interview (based on an EPA portfolio)	To achieve a Pass the apprentice must achieve ALL of the following:
	mark the position of services and sub-structures on the work site in line with the health and safety executive guidance and requirements: HSG 47 (Avoiding danger from underground services) and GS6 (Avoiding danger from overhead power lines)
Excavations including working on highways K40 K41 K42 S29 S30 S31	Describes how they erect and maintain signing, lighting and guarding in line with the New Roads and Street Works Act Describes how they monitor works using mechanical excavators in line with company procedures taking account of mechanical equipment limitations and exclusions Describes how they inspect excavation arrangements in line with company procedures with reference to regulations and procedures for the safe excavation and maintenance of holes and trenches, safe access and egress considerations, and when excavation support systems are required
Laying cables K43 S19	Describes how they install cables and apply protection to protect the cables from damage in line with company procedures

Distinction criteria for the interview based on an EPA portfolio

Interview (based on an EPA portfolio)	To achieve a Distinction the apprentice must achieve ALL of the following:
Task 1: Communication and working with others	
Communication K49 S34 S36 B5	
Information and digital technology K45 S37	
Teamwork K47 K48 S33 B6	Justifies the application of teamworking principles to meeting work goals
Task 2: Sustainability	
Sustainability K16 S15 B2	Justifies the application of sustainability practices in the power industry
Task 3: CPD and improvement activities	
Continued professional development S38 B7	
Contribute to improvement activities S32	Justifies the potential impact of the improvement suggestion with consideration to benefits and any potential risks

Interview (based on an EPA portfolio)	To achieve a Distinction the apprentice must achieve ALL of the following:
Task 4: Working on the highway, excavations and laying cables	
Plant or vehicle checks K15 S13	
Location and avoidance of utilities K13 S10	
Excavations including working on highways K40 K41 K42 S29 S30 S31	
Laying cables K43 S19	

Component 3: Trade test practical assessment with questions

The apprentice must demonstrate KSBs in an integrated way.

A Fail will be awarded if an apprentice has not achieved **all** the Pass criteria.

To gain a Pass, an apprentice must successfully achieve **all** the descriptors for each KSB, as shown below.

To achieve a Distinction an apprentice must successfully achieve **all** the Pass descriptors and **all** of the Distinction descriptors

Trade test practical assessment	To achieve a Pass the apprentice must achieve ALL of the following:
Prepare for power network cable jointer activities K46 S1 S2 S3	Reviews drawings, instructions or information to understand the task's requirements Plans tasks and identifies and organises resources required to complete tasks for self and working party using planning, prioritising, and time management techniques with consideration for safety, environmental impact, quality and cost with a justification for live working
Organise and supervise a working party S4 B3	Receives and clears a safety document and briefs a working party in line with company requirements taking ownership for work and responsibility for the impact of the work on others

Trade test practical assessment	To achieve a Pass the apprentice must achieve ALL of the following:
Maintain work site health, safety, and environment compliance K7 K11 K18 S8 S9 S11 S14 B1	Identifies hazards and risks in the workplace and applies control measures including consideration of hazards associated with work on or near electrical power networks Prioritises and applies health and safety, procedures in compliance with regulations and standards mitigating against risks including emergency procedures, personal protective equipment, manual handling and fire safety Applies measures to leave power work environments in a safe condition in line with company procedures Segregates resources for reuse, recycling, and waste handling in line with company procedures for recycling and waste transfer
Tools and equipment K23 K24 S17 S18	Selects, checks, and prepares personal tools and equipment in line with insulated tools selection and care considerations Uses or operates personal tools and equipment in line with safety and operational requirements

Trade test practical assessment	To achieve a Pass the apprentice must achieve ALL of the following:
	Stores personal tools and equipment in line with company requirements Sets up spiking gun in line and completes post use maintenance requirements in line with company procedures
Identify apparatus K25 S6	Identifies apparatus to be worked on using positive identification methods suitable for the equipment and the situation.
Install, connect and repair distribution underground electrical supplies on low voltage cable networks K27 K30 K31 S20 S21	Follows approved live working procedures Joints and terminates cables (modern XPLE insulated, PVC sheathed, and paper insulated lead sheath) using cable connectors including fitting and terminating services into cut outs and applies system earthing connections and joint protection for task requirements (including tolerances) in line with company procedures Explains how application technique will prevent moisture ingress
Connect and repair apparatus on high voltage cable networks K29 K32 S22 S23	Joints and terminates cables (modern XPLE and paper Insulated) using joint kits on high voltage cables up to 11kv operating voltage and applies joint protection for task requirements (including tolerances) in line with company procedures

Trade test practical assessment	To achieve a Pass the apprentice must achieve ALL of the following:
	Receives phasing colours and interprets phasing diagrams to enable completion of HV jointing tasks to required specification
Make and break live conductor connections K28 S24 S25	Makes and breaks live conductor connections on low voltage underground networks in line with company procedures Performs testing procedures before and after making and breaking connections including insulation and continuity, voltage, polarity, earth loop impedance, and phase rotation in line with company procedures
Identify a fault K36 S26	Identifies a common fault on an electrical power circuit, plant or apparatus and tests to find the fault condition
Complete work records K44 S35	Records information for work tasks in line with company procedures for data recording, documentation control and auditable records

Distinction criteria for the trade test practical assessment

Trade test practical assessment	To achieve a Distinction the apprentice must achieve ALL the Pass criteria and ALL of the following:
Prepare for power network cable jointer activities K46 S1 S2 S3	Justifies their planning in terms of efficiencies achieved and the balance of safety, environmental impact, quality and cost in planning decisions
Organise and supervise a working party S4 B3	
Maintain work site health, safety, and environment compliance K7 K11 K18 S8 S9 S11 S14 B1	Justifies how the controls they applied eliminated or reduced risks to an acceptable level using a hierarchical approach to risk assessment
Tools and equipment K23 K24 S17 S18	
Identify apparatus K25 S6	
Install, connect and repair distribution underground electrical supplies on low voltage cable networks K27 K30 K31 S20 S21	Completes procedures efficiently for example, performs activities methodically, performs activities logically to save time, avoids issues with no need to back-track

Trade test practical assessment	To achieve a Distinction the apprentice must achieve ALL the Pass criteria and ALL of the following:
Connect and repair apparatus on high voltage cable networks K29 K32 S22 S23	Completes procedures efficiently for example, performs activities methodically, performs activities logically to save time, avoids issues with no need to back-track
Make and break live conductor connections K28 S24 S25	
Identify a fault K36 S26	
Complete work records K44 S35	

Component 4: Trade test technical interview

The apprentice must demonstrate KSBs in an integrated way.

A Fail will be awarded if an apprentice has not achieved **all** the Pass criteria.

To gain a Pass, an apprentice must successfully achieve **all** the descriptors for each KSB, as shown below.

Trade test technical interview	To achieve a Pass the apprentice must achieve ALL of the following:
Role and responsibilities K4 K5 S5 B4	Outlines their role as a cable jointer including their limits of responsibility and how they report or escalate issues Describes how they respond and adapt to work demands in line with organisational requirements Explains the responsibilities of persons as defined in the industry standard safety rules: supervising a working party, competent persons, and authorisation roles and responsibilities in relation to working under safety documentation
Electrical danger - control and first aid K8 K12 K34 K35 S12	Explains the dangers of electricity and how an electric shock can be received including direct contact, induced (impressed) voltage, and arcing. Outlines electric shock emergency procedures in line with company procedures

Trade test technical interview	To achieve a Pass the apprentice must achieve ALL of the following:
	Describes how they would respond in the event of a first aid emergency, with reference to their emergency first aid training and responsibilities and measures they would take to avoid electrical risk in line with company procedures Explains HV safe systems for work control measures for working on underground cable networks including making the cable network safe (dead, isolated and earthed), screening from live equipment, identification (visual and identification devices), prove dead (visual connection to earthed equipment or cable spike), and released for work (with a safety document) in line with company procedures Explains LV cable network electrical safe system of work control measures, before and during work, when working on cables that have been made dead including the isolation process, identification and proving dead, mitigation of risk from cables becoming live from alternative sources, and screening from live equipment in line with company procedures
Electrical plant and apparatus K22 S7	Describes how they interpret network schematic diagrams and geographic records to identify running arrangements outlining power engineering electrical plant and apparatus, the properties and purpose of transformers, switchgear, earthing devices, voltage control and automated equipment

Trade test technical interview	To achieve a Pass the apprentice must achieve ALL of the following:
Low voltage networks K33	Explains LV network running arrangements and how fuses are graded to provide discrimination Explains LV operational switching and testing operations in line with company procedures with reference to different LV switching equipment (air circuit breakers, links and fuses), methods of isolation and considerations when paralleling networks
Fault diagnosis K37 K38 S27 S28	Describes how they would conduct fault diagnosis on underground cable networks for a given scenario to identify the underlying cause using problem-solving and fault-finding techniques: non-invasive visual examinations, invasive physical examinations of plant, testing procedures, root cause analysis and fault diagnostic equipment: time domain reflectometer (TDR), low voltage faults sniffer and auto-reclose equipment Makes a recommendation for the repair or restoration of plant or apparatus based on the findings of a diagnostic procedure in line with company procedure
Asset security K14 S16	Describes how they apply asset security measures in line with company procedures

Overall grading

The apprenticeship will be graded fail, pass, or distinction. The final grade will be determined by collective performance in the four assessment components.

The multiple-choice test and trade test technical interview are marked separately and awarded a fail or pass.

The interview based on an EPA portfolio and trade test practical assessment with questions are marked separately and awarded a fail, pass or distinction.

The multiple-choice test is based on the number of correct answers achieved. The grade for each of the other three assessment components is based on the number of criteria achieved.

The overall grade for the PIDCJ Standard is based on the grades in individual components as follows:

Multiple-choice test	Interview based on an EPA portfolio	Trade test practical assessment with questions	Trade test technical interview	Overall grading
Fail in any component				Fail
Pass	Pass	Pass	Pass	Pass
Pass	Distinction	Pass	Pass	Pass
Pass	Pass	Distinction	Pass	Pass
Pass	Distinction	Distinction	Pass	Distinction

The grading criteria that will be applied for each assessment criteria along with additional details can be found in Section 3 of this Specification.

The overall grading for the PIDCJ standard is based on the grades in the individual components as follows:

- Fail – if a Fail is awarded for at least one of the components

- Pass – If at least a Pass is awarded in all the components
- Distinction – If a Distinction is awarded in the interview based on an EPA portfolio and trade test practical assessment with questions, and a pass in the multiple-choice test and trade test technical interview

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.

The employer and Energy & Environment Awards agree the timescale for a re-sit or re-take. A re-sit is typically taken within 4 months of the EPA outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 6 months of the EPA outcome notification. Failed EPA components must be re-sat or re-taken within the 6 month end-point assessment period, otherwise the EPA will need to be re-sat or re-taken in full.

Re-sits and re-takes are not offered to apprentices wishing to move from pass to a higher grade.

An apprentice will get a maximum EPA grade of pass if there has been a re-sit or re-take for one or more assessment methods.

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

Section 5: Practical guidance

Preparing for the multiple-choice test

While on-programme, the employer and/or training provider should brief the apprentice on the areas to be assessed by the multiple-choice test, as detailed in Section 2 in this specification. It is good practice to identify the areas within the learning programme where the relevant knowledge is delivered, ensuring that apprentices are aware that elements of these might come up in the test.

The multiple-choice test is aligned to the standard rather than a specific job role that the apprentice may be doing. The questions have been written to reflect the Power Industry Distribution Cable Jointer role as a whole and not focussed on specific plant, machinery, or employer-specific processes.

In readiness for end-point assessment, the apprentice should complete a practice multiple-choice test. This should be undertaken in advance of the live multiple-choice test, with enough time to mark the test, and provide feedback to the apprentices.

A practice multiple-choice test is available as a printable copy - see Appendix E, PIDCJ Supporting Documents ‘Practice Multiple-choice Test’ .

For maximum effect, ensure the test is taken in exam conditions similar to those that will be experienced in a live test.

Preparing for the interview based on an EPA portfolio

A practice interview should take place between the apprentice and the person acting the role of an assessor. The apprentice should draw on evidence from their portfolio during the discussion.

Guidance on the EPA portfolio

The EPA Portfolio should be compiled towards the end of the on-programme training when the apprentice has developed the knowledge, skills and behaviours required and can evidence them in tasks and activities they carry out. The EPA portfolio is **not assessed**. The interview will draw on the evidence contained in the EPA portfolio. The EPA portfolio should reflect

- their individual experiences and the activities carried out during this period
- the requirements outlined in the assessment plan.

A completed EPA portfolio is one of the Gateway requirements.

The apprentice will have access to their EPA portfolio during the interview.

The EPA portfolio is a record of how each apprentice demonstrated the knowledge, skills and behaviours that are assessed in the interview. Each apprentice will have access to their EPA portfolio during the interview. A set of four tasks to support the compilation of the EPA portfolio has been developed. They help each apprentice focus on the specific knowledge, skills and behaviours that will be assessed in the interview.

For each task there is

- a series of questions to be answered
- a text box following each question for apprentices to provide their response. These boxes will expand to take more text; however apprentices should be aware that quality of answer is more important than quantity. Apprentices will be able to use their answers as prompts in the interview
- a table for the apprentice to record evidence that supports the examples provided in response to the questions.

Supporting evidence must be:

- produced by the apprentice (authentic)
- relevant to the task
- cross referenced and easily accessible in the portfolio
- produced during the time the apprentice are carrying out their on-programme training.

The apprentice should include their best examples to answer each question in this document. The examples should be individual to them.

The completed EPA portfolio should contain the four tasks with their responses and at least one piece of evidence backing up each of the questions. A piece of evidence may cover more than one question. No other evidence should be included.

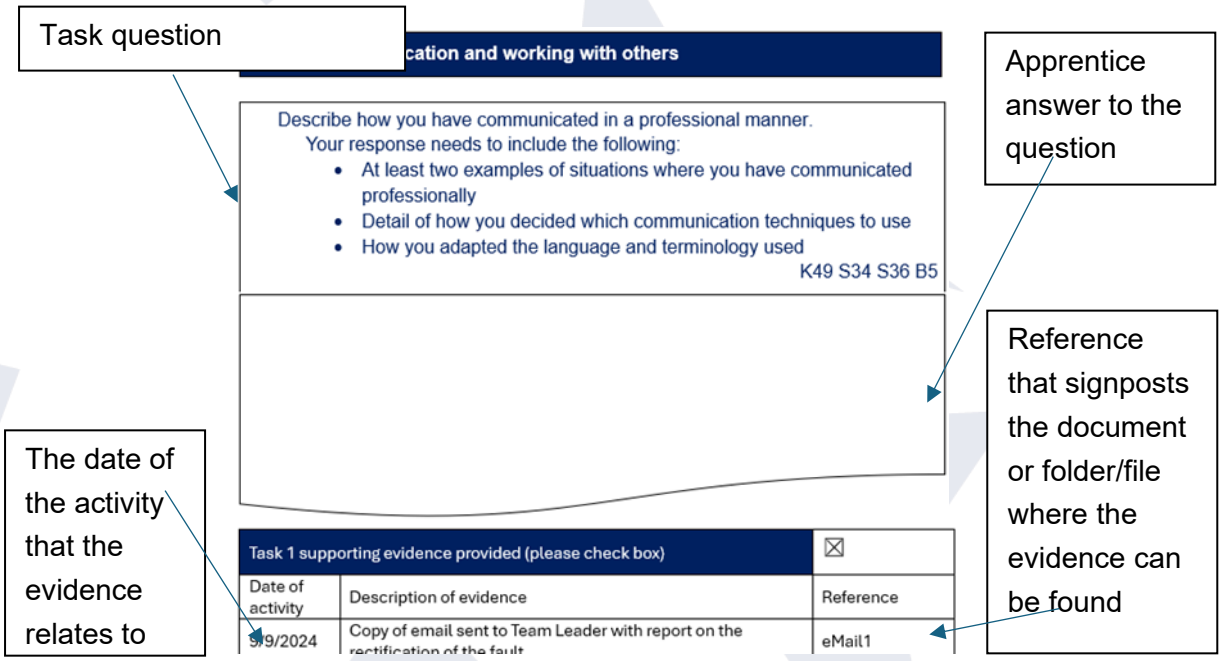
Examples of acceptable evidence:

- workplace documentation/records, for example job task sheets/job card/times sheets, equipment maintenance /service records related to the apprentice
- witness statements signed and dated by coaches/trainers
- employer contributions that focus only on direct observation of evidence (for example witness statements) rather than opinions
- annotated photographs showing the apprentice carrying out tasks
- diagrams

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.

Each piece of evidence must be given a reference. For those using e-portfolios such as ONEFILE or SMARTASSESSOR, the reference used must simply be the file or folder name the apprentice used when uploading the evidence to such systems.

How the apprentice should complete the EPA portfolio template



The role of the employer/training provider

Their employer/training provider is expected to support the apprentice in preparing their portfolio by:

- providing clear instruction and deadlines to allow the apprentice to plan and compile their portfolio in preparation for the Gateway meeting
- advising on which pieces of evidence to select
- authenticating evidence as valid
- signing off the EPA portfolio
- submitting the portfolio to Energy & Environment Awards as part of Gateway requirements.

What to expect in the practice interview?

The practice interview will be based on the EPA portfolio which will provide the apprentice with the opportunity to practice discussing their KSBs gained throughout their on-programme and by referring to the evidence from their portfolio using their responses to the tasks and associated evidence. A suitable person should be chosen to play the part of the assessor.

A practice interview based on the EPA portfolio is provided to help prepare the appropriate questions to ask and to record the apprentices' performance. See Appendix F, PIDCJ Supporting Documents 'Practice Interview based on an EPA Portfolio Form.
As part of the practice exercise, apprentices should have access to their EPA portfolio to support their responses.

Trade test practical assessment with questions approval

Purpose

Energy & Environment Awards are required to approve employers' trade test practical assessment with questions materials to be used by employer assessors, apprentices and their managers. The approval must take place before the first trade test practical assessment is carried out. Additional approvals may be taken periodically on a risk-based approach. The purpose of the approval is to provide Energy & Environment Awards with assurance that the trade test practical assessment will be conducted in line with the PIDCJ Assessment Plan.

Submitting the form to Energy & Environment Awards

To obtain approval, employers must complete the trade test practical assessment requirements and mapping form, see Appendix C, PIDCJ Supporting Documents 'Trade Test Practical Assessment Requirements and Mapping Form'. This must be submitted to Energy & Environment Awards Service Delivery Team for approval at least 3 months before Gateway. The form must be accompanied by the relevant documents, listed on page 1 of the form.

Energy & Environment Awards Approval Process

Once the trade test practical assessment requirements and mapping form has been received the approval process will be conducted by Energy & Environment Awards. The outcomes will be shared with the employer/training provider no later than 10 working days following receipt of all the relevant documents.

Preparing for the trade test practical assessment with questions

Where possible, the employer/training provider should provide the apprentice with the opportunity to carry out a practice trade test practical as close to the real assessment described in Section 2 of the specification (Component 3).

The employer/training provider should prepare tasks 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 assessor. An example trade test practical assessment recording form for assessors is provided in Supporting Documents, see Appendix G, PIDCJ Supporting Documents 'Example: Trade Test Practical Assessment Assessor Recording Form'.

Employer assessors who will be carrying out assessment of the trade test, as part of the EPA, are required to be approved by Energy & Environment Awards and listed on Energy & Environment Awards assessor register. Employers should contact Energy & Environment Awards to ensure that the approval process if followed.

Trade test technical interview approval

Purpose

Energy & Environment Awards are required to approve employers' trade test technical interview materials to be used by employer assessors, apprentices and their managers. The approval must take place before the first trade test technical interview is carried out. Additional approvals may be taken periodically on a risk-based approach. The purpose of the approval is to provide Energy & Environment Awards with assurance that the trade test technical interview will be conducted in line with the PIDCJ Assessment Plan.

Submitting the form to Energy & Environment Awards

To obtain approval, employers must complete the trade test technical interview requirements and mapping form, see Appendix D, PIDCJ Supporting Documents 'Trade Test Technical Interview Requirements and Mapping Form. This must be submitted to Energy & Environment Awards Service Delivery Team for approval at least 3 months before Gateway. The form must be accompanied by the relevant documents, listed on page 1 of the form.

Energy & Environment Awards Approval Process

Once the trade test technical interview requirements and mapping form has been received the approval process will be conducted by Energy & Environment Awards. The outcomes will be shared with the employer/training provider no later than 10 working days following receipt of all the relevant documents.

Preparing for the trade test technical interview

Where possible, the employer/training provider should provide the apprentice with the opportunity to carry out a practice trade test technical interview as close to the real assessment described in Section 2 of the specification (Component 4).

A practice technical interview should take place between the apprentice and the person acting the role of an assessor. An example trade test technical interview recording form, for assessors, is provided in Supporting Documents, see Appendix H, PIDCJ Supporting Documents 'Example: Trade Test Technical Interview Assessor Recording Form'.

Employer assessors who will be carrying out the technical interview, as part of the EPA, are required to be approved by Energy & Environment Awards and listed on Energy & Environment Awards assessor register. Employers should contact Energy & Environment Awards to ensure that the approval process is followed.

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 support the tasks (and associated KSBs) within the EPA Portfolio Template. 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 tasks (and associated KSBs) assessed during the interview based on an EPA portfolio
- **recent and up to date**: all evidence must be linked to the tasks in the EPA Portfolio Template. The evidence must be recent and current which demonstrate the apprentice's competence. The independent assessors, appointed by Energy & Environment Awards will assess current competencies. Apprentices must gather the evidence during their on-programme training.