



ENERGY &
UTILITY SKILLS

Skills for a greener world

EUIAS Level 3 End-point Assessment for Power Industry
Distribution Cable Joiner

Supporting Documents

QAN 610/4818/5
ST1332 V1.1

Supporting Documents for

EUIAS Level 3 End-point Assessment for Power Industry Distribution Cable Joiner

QAN 610/4818/5

Updates to the supporting documents	3
Appendix A: Glossary	4
Appendix B: Gateway Eligibility Form.....	5
Appendix C: Trade Test Practical Assessment Requirements and Mapping Form	9
Appendix D: Trade Test Technical Interview Requirements and Mapping Form	21
Appendix E: Practice Multiple-choice Test.....	31
Appendix F: Practice Interview Based on an EPA Portfolio Form.....	49
Appendix G: Example: Trade Test Practical Assessor Recording Form.....	60
Appendix H: Example: Trade Test Technical Interview Assessor Recording Form ...	80

Updates to the supporting documents

Since the first publication of the EUIAS Power Industry Distribution Cable Jointer Specification – the following updates have been made.

Version	Date first published	Section updated	Page(s)
v1.2	November 2024	Standard updated (V1.1) to include statement ' <i>The apprentice may choose to end the assessment method early.</i> ' For 3 assessment methods	5, 11, 19, 23, 30, 50, 53, 60-62, 80-82
v1.1	October 2024	Minor updates to align the 3 Power Industry Supporting Documents	
v1.0	October 2024	First published	All

Appendix A: Glossary

Amplification – provides more detail on how individual knowledge, skills or behaviours statements should be interpreted. Where the KSB statements, themselves are deemed self-explanatory, no amplification is provided. Assessment may include questions on anything identified in the amplification

Behaviours (as part of KSBs) – specific mindsets, attitudes or approaches identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Elements – are the knowledge, skills and behaviours and what is needed to competently undertake the duties required for an occupational standard

Gateway - the stage of the apprenticeship where the apprentice, employer and training provider determine whether the apprentice is ready to undertake end-point assessment

Guidance – is only provided where it is required to support interpretation of the KSB statements

Knowledge (as part of KSBs) – specific information, technical detail, and ‘know-how’ identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Pathways – a specialist route within an apprenticeship standard that builds on the occupational competence for a new entrant to the occupation

Skills (as part of KSBs) – the practical application of knowledge identified as part of the apprenticeship standard that must be evidenced during end-point assessment

Standard – An occupational standard is a description of an occupation. It contains occupational profile, and describes KSBs needed for someone to be competent in the occupation’s duties. Occupational standards are developed by employers for occupations that meet the Institute for Apprenticeships and Technical Education current occupation criteria

Topic - is a collection of elements grouped into a theme e.g. Health and Safety

Appendix B: Gateway Eligibility Form

(Standard Version: ST1332 version 1.1; Assessment Plan Version:1.1)

Apprentice's name:	Apprentice's job title:
Name of Employer:	Name of Training provider:
Employer representatives present:	Training provider representatives present:
Apprenticeship start date:	Apprenticeship on-programme end date:
Gateway meeting date:	
Has the apprentice taken any part of the end-point assessment for this apprenticeship standard with any other End Point Assessment Organisation?	Y / N
If "Yes" please give details:	

Apprentice's details

Eligibility requirements:

The apprentice must confirm their achievement of the following:

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (Scans of certificates MUST be included)
Achieved an English qualification in line with the apprenticeship funding rules		
Achieved a mathematics qualification in line with the apprenticeship funding rules		
Passed Emergency first aid 1 day course		
Compiled and submitted an EPA portfolio that meets the specification requirements, for the interview based on an EPA portfolio		

Gateway Eligibility Declaration

1. The apprentice, the employer and the training provider must sign this form to confirm that they understand and agree to the following:
2. The apprentice has completed the required on-programme elements of the apprenticeship and is ready for end-point assessment with EUIAS.
3. EUIAS has been informed about any reasonable adjustment and/or special considerations requests.
4. The apprentice will only submit their own work as part of end-point assessment.
5. All parties agree that end-point assessment evidence may be recorded and stored by EUIAS for quality assurance purposes.
6. The apprentice has been on-programme for a minimum duration of 365 days.
7. The apprentice has achieved English and mathematics qualifications in line with the apprenticeship funding rules.
8. The apprentice has passed an Emergency first aid 1 day course
9. The apprentice has compiled and submitted an EPA portfolio for the interview based on an EPA portfolio.
10. The apprentice, if successful, gives permission for EUIAS to request the apprenticeship certificate from the ESFA who issue the certificate on behalf of the Secretary of State.
11. The apprentice has been directed to the EUIAS Appeals Policy and Complaints Policy.
12. The employer/training provider has given the EUIAS at least three months' notice of requesting this EPA for this apprentice.
13. If the Gateway Eligibility Report is not completed in full, meeting all requirements, and submitted to EUIAS, the end-point assessment cannot take place.



Signed on behalf of the employer (print name):	Signature:	Date:
Signed on behalf of the training provider (print name):	Signature:	Date:
Apprentice's name (print):	Signature:	Date:
EUIAS use only:		
EUIAS Sign off:		
Comments/actions:		



Appendix C: Trade Test Practical Assessment Requirements and Mapping Form

Trade Test Practical Assessment with Questions Mapping Summary

Trade Test Practical Assessment Documentation

The following documentation must be provided to EUIAS upon request. This forms part of EUIAS' quality assurance process for the PIDCJ Standard. Please complete the table below by adding reference(s) to your own paperwork in the document references column.

Documentation Requirements	Please provide the document filename(s)
Employer assessor training and standardisation materials	
Employer assessor documentation	
Guidance for employer assessors	
Guidance on invigilation of apprentices	
Grading guidance	
Question bank	
Guidance for apprentice and their manager	
Tasks for apprentices	

Trade Test Practical Assessment Requirements

Please complete the table below by adding a reference(s) to your own paperwork in the document references column. In the reference column include the page(s) where evidence of the practical assessment requirements for the trade test (TT) can be located within your trade test paperwork.

Trade Test Practical Assessment Requirements	Please provide a document reference of where your documentation references the requirement
Space for the start and end date of TT to be documented <i>The trade test practical assessment with questions may take place in parts but must be completed over no more than 21 working days.</i>	
TT total time documented	
Space to <ul style="list-style-type: none"> • document an apprentice’s request to end the assessment early • indicate whether the employer assessor suggested the assessment continues 	
Guidance includes identified simulated environment(s)/locations	
Task to be conducted during practical assessment:	
a) prepare for power network cable jointer activities	
b) organise and supervise a working party including receiving and clearing a safety document, and briefing a working party	
c) maintain work site health, safety, and environmental compliance including completing a risk assessment	



Trade Test Practical Assessment Requirements	Please provide a document reference of where your documentation references the requirement
d) identify apparatus to be worked on	
e) select, prepare, use and store tools and equipment	
f) install, connect and repair distribution underground electrical supplies on low voltage cable networks	
g) connect and repair apparatus on high voltage cable network	
h) make and break live conductor connections on low voltage networks	
i) identify a fault	
j) complete work records	
k) prepare for power network cable jointer activities	
KSBs are mapped to the assessment	
Guidance to employer assessor includes statement 'must ask at least 10 questions	
KSBs observed to be documented	
Space for apprentice's responses to be documented	
KSBs demonstrated in answers to questions are indicated	
Preliminary grade achieved recorded	
Guidance for resits to include: <ul style="list-style-type: none">• different questions and tasks• resit whole TT Practical Assessment in full	

Trade Test Practical Assessment Mapping

Please complete the table below by adding a reference(s) to your own paperwork in the document references column. In the reference column include the page(s) where evidence of the KSBs can be located within your trade test practical assessment tasks.

Trade Test Theme: Prepare for power network cable jointer activities	Please provide a document reference of where the apprentice will be demonstrating the KSB
K46 Planning, prioritising and time management techniques for self and working party. Live or dead working planning considerations	
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	
S2 Prioritise and plan work with consideration for safety, environmental impact, quality, and cost	
S3 Identify and organise resources to complete tasks	



Trade Test Theme: Organise and supervise a working party	Please provide a document reference of where the apprentice will be demonstrating the KSB
S4 Receive and clear a safety document (permit to work). Brief a working party	
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	

Trade Test Theme: Maintain work site health, safety, and environment compliance	Please provide a document reference of where the apprentice will be demonstrating the KSB
K7 The hazards associated with work on or near electrical power networks	
K11 Risk assessments and method statements. Emergency procedures. Personal protective equipment (PPE). Manual handling. Fire safety	
K18 Recycling and waste management requirements	
S8 Identify hazards and risks and apply control measures	
S9 Apply health and safety procedures in compliance with regulations, standards, and guidance	
S11 Apply measures to leave power work environments in a safe condition	
S14 Segregate waste for reuse, recycling, and waste transfer	



Trade Test Theme: Maintain work site health, safety, and environment compliance	Please provide a document reference of where the apprentice will be demonstrating the KSB
B1 Prioritise health and safety. For example, risk aware, minimise risks, and proactively work towards preventing accidents	

Trade Test Theme: Tools and equipment	Please provide a document reference of where the apprentice will be demonstrating the KSB
K23 Insulated tools - selection and care considerations	
K24 Spiking gun set up and maintenance requirements	
S17 Select, check, prepare, use or operate, and store personal tools and equipment	
S18 Set up spiking gun	



Trade Test Theme: Identify apparatus	Please provide a document reference of where the apprentice will be demonstrating the KSB
K25 Positive methods for apparatus identification	
S6 Identify apparatus to be worked on	

Trade Test Theme: Install, connect and repair distribution underground electrical supplies on low voltage cable networks	Please provide a document reference of where the apprentice will be demonstrating the KSB
K27 Types of earthing systems, low voltage (LV) services and terminations	
K30 LV mains jointing techniques – mains and service; termination of services into cut outs	
K31 Joint protection materials and the considerations in application techniques to prevent moisture ingress	
S20 Follow live working 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	



Trade Test Theme: Connect and repair apparatus on high voltage cable networks	Please provide a document reference of where the apprentice will be demonstrating the KSB
K29 High voltage (HV) jointing techniques up to 11kV on both modern and legacy cable types	
K32 Phasing colours and diagrams	
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	
S23 Receive phasing colours for HV jointing tasks and interpret phasing diagrams	

Trade Test Theme: Make and break live conductor connections	Please provide a document reference of where the apprentice will be demonstrating the KSB
K28 Pre and post connection testing techniques: insulation and continuity, voltage, polarity, earth loop impedance, phase rotation	
S24 Make and break live conductor connections on LV underground networks	
S25 Perform testing procedures before and after making and breaking connections	



Trade Test Theme: Identify a fault	Please provide a document reference of where the apprentice will be demonstrating the KSB
K36 The symptoms and causes of common faults on electrical power circuits, plant and apparatus	
S26 Identify fault. Test to find the fault condition	

Trade Test Theme: Complete work records	Please provide a document reference of where the apprentice will be demonstrating the KSB
K44 Documentation requirements: data recording, documentation control, auditable records	
S35 Record information	



Employer Declaration	
This is to confirm that our Trade Test Practical Assessment documentation maps to the Assessment Requirements as detailed above. A copy of the documentation has been provided for reference.	
Employer Name	
Contact Name:	
Job Title:	
Signature:	
Date:	

EUIAS Use Only			
Copy documentation received		Mapping references confirmed	
Start / End date and Total Time of TT documented		KSBs observed to be documented	
Space to document ending assessment early		Apprentice's responses to be documented	
Guidance includes identified simulated environment(s)/ locations		KSBs demonstrated in answers to questions are indicated	
Tasks (a)-(k) covered in employer-set tasks		Preliminary grade achieved recorded	



EUIAS Use Only			
KSBs are mapped to the assessment		Guidance for resits / different questions / different tasks	
Guidance includes statement 'must ask at least 10 questions		Published grading descriptors are used	
EUIAS date of review			

Comments



Appendix D: Trade Test Technical Interview Requirements and Mapping Form

Trade Test Technical Interview Mapping Summary

Technical Interview Documentation

The following documentation must be provided to EUIAS upon request. This forms part of EUIAS' quality assurance process for the PIDCJ Standard. Please complete the table below by adding a reference(s) to your own paperwork in the document references column.

Documentation Requirements	Please provide the document filename(s)
Employer Assessor <i>training materials</i>	
Employer Assessor documentation	
Guidance for Employer Assessors	
Grading guidance	
Question bank	
Guidance for apprentice and their manager	

Technical Interview Requirements

Please complete the table below by adding a reference(s) to your own paperwork in the document references column to indicate the page(s) that where evidence of the technical interview (TI) requirements are found in your trade test paperwork.

Technical Interview Requirements	Please provide a document reference of where your documentation references the requirement
Space for the start and end time of TI to be documented <i>This will confirm that the TI has lasted at least 60 minutes</i>	
Space to document an apprentice's request to end assessment early and indicate employer assessor suggested assessment continues	
TI date documented	
Guidance includes resource requirements e.g. quiet place, procedures for remote interview	
Process in place to identify the identity of the apprentice and ensure the apprentice is not being aided	
Guidance to employer assessor includes statement 'must ask at least 6 questions (one for each theme minimum)'	
Space for apprentice's responses to be documented	
KSBs demonstrated in answers to questions are indicated	
Preliminary grade achieved recorded	
Guidance for resits / different questions	

Assessor Documentation

Please complete the table below by adding a reference(s) to your own paperwork in the document references column to indicate the page(s) that where evidence of the grading statements is found in your completed trade test paperwork. If there are sub-bullets i.e. parts a, b, c then it would be helpful to identify where evidence for each of those sub-bullets would be found.

Trade Test Theme: Role and responsibilities	Please provide a document reference of where the assessor is assessing the grading descriptor
Pass descriptors	
Outlines their role as a cable joiner including their limits of responsibility and how they report or escalate issues. K4, S5, B4	
Describes how they respond and adapt to work demands in line with organisational requirements. K4, S5, B4	
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. K5	

Trade Test Theme: Electrical danger - control and first aid	Please provide a document reference of where the assessor is assessing the grading descriptor
Pass descriptors	
<p>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. (K8, K12, S12)</p>	
<p>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. K8, K12, S12</p>	
<p>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. K34</p>	

Trade Test Theme: Electrical danger - control and first aid	Please provide a document reference of where the assessor is assessing the grading descriptor
<p>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.</p> <p>K35</p>	

Trade Test Theme: Electrical plant and apparatus	Please provide a document reference of where the assessor is assessing the grading descriptor
Pass descriptors	
<p>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.</p> <p>K22, S7</p>	

Trade Test Theme: Low voltage networks		Please provide a document reference of where the assessor is assessing the grading descriptor
Pass descriptors		
Explains LV network running arrangements and how fuses are graded to provide discrimination. K33		
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. K33		

Trade Test Theme: Fault diagnosis		Please provide a document reference of where the assessor is assessing the grading descriptor
Pass descriptors		
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		

Trade Test Theme: Fault diagnosis	Please provide a document reference of where the assessor is assessing the grading descriptor
and fault diagnostic equipment: time domain reflectometer (TDR), low voltage faults sniffer and auto-reclose equipment. K37, K38, S27	
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. S28	

Trade Test Theme: Asset security	Please provide a document reference of where the assessor is assessing the grading descriptor
Pass descriptors	
Describes how they apply asset security measures in line with company procedures. K14, S16	

Employer Declaration

This is to confirm that our Trade Test Technical Interview documentation maps to the Assessment Requirements as detailed above. A copy of the requested documentation has been provided for reference:

Employer Name

Contact Name:

Job Title:

Signature:

Date:

EUIAS Use Only			
Copy documentation received		Guidance includes resource requirements e.g. quiet place, procedures for remote interview	
Mapping references confirmed		Guidance for resits / different questions	
Start / End time of TI documented		Published grading descriptors are used	
TI date documented		Apprentice's responses recorded	
Space to document ending assessment early		KSBs demonstrated in answers to questions are indicated	
Guidance includes statement 'must ask at least 6 questions (one for each theme minimum)'		Preliminary grade achieved recorded	
EUIAS date of review			

Comments



Appendix E: Practice Multiple-choice Test



Level: 3

Power Industry Distribution Cable Joints

Practice Paper

This examination consists of 40 multiple-choice questions.

The Pass mark is 28 correct answers.

The duration of this examination is 60 minutes.

You are NOT allowed any assistance to complete the answers.

You must use a **pencil** to complete the answer sheet - pens must NOT be used.

When completed, please leave the examination answer sheet and question paper on the desk.

For this paper the use of a scientific calculator (non-programmable) is permitted.

For each question, fill in ONE answer ONLY.

If you make a mistake, ensure you erase it thoroughly.

You must mark your choice of answer by shading in ONE answer circle only. Please mark each choice like this:

MARKING INSTRUCTIONS

A B C D **ANSWER COMPLETED CORRECTLY**

Examples of how NOT to mark your examination sheet. **These will not be recorded**

A B C D **DO NOT** partially shade the answer circle.

A B C D **DO NOT** use ticks or crosses.

A B C D **DO NOT** use circles.

A B C D **DO NOT** shade over more than one circle.



You may use this page for rough work. This page must not be removed.



Question 1 K1-4

What is a key difference between IDNOs (Independent Distribution Network Operators) and traditional DNOs (Distribution Network Operators)?

Possible answers

a)	IDNOs operate only in rural areas, while DNOs operate in urban areas
b)	IDNOs can operate nationwide without regional restrictions, while DNOs have specific geographic regions
c)	IDNOs generate electricity, while DNOs distribute it
d)	IDNOs regulate electricity prices, while DNOs do not

Question 2 K1-5

Identify ONE of the primary roles of an ICP (Independent Connections Provider).

Possible answers

a)	Generating electricity
b)	Regulating electricity prices
c)	Supplying electricity to consumers
d)	Designing electrical infrastructure

Question 3 K1-6

Identify ONE responsibility of an electricity supplier.

Possible answers

a)	Ensuring the reliability of the network of power lines
b)	Maintaining the high-voltage transmission grid
c)	Billing customers for electricity usage
d)	Installing home electrical systems



Question 4 K1-7

What is the primary role of a power generator?

Possible answers

- | | |
|----|---|
| a) | Converting mechanical energy into electrical energy |
| b) | Distributing electricity to end consumers |
| c) | Maintaining the transmission grid |
| d) | Regulating electricity prices |

Question 5 K1-2

What is the significance of cross-border electricity flows managed by TNOs (Transmission Network Operators)?

Possible answers

- | | |
|----|--|
| a) | They help balance supply and demand across regions |
| b) | They increase the cost of electricity |
| c) | They reduce the reliability of the grid |
| d) | They are only used in emergencies |

Question 6 K2-1

To achieve their objectives, Ofgem operate a statutory framework set by the:

Possible answers

- | | |
|----|---|
| a) | European Court of Human Rights |
| b) | Confederation of British Industry |
| c) | Department for Business, Enterprise and Regulatory Reform |
| d) | UK Parliament |



Question 7 K2-2

If offences by relevant utility operators have been identified, Ofgem have the authority to impose:

Possible answers

a)	public order reports
b)	fines and enforcement orders
c)	restrictions on industry award nominations
d)	limitations on public access to the website for the company under investigation

Question 8 K3-1

Identify ONE of the basic requirements of The Electricity at Work Regulations 1989.

Possible answers

a)	Employers must assess electrical risks and implement appropriate control measures
b)	Outlines quality standards for the voltage levels
c)	Employers must follow its guidelines for designing and installing electrical systems
d)	Sets standards for the frequency and duration of power outages

Question 9 K3-2

The Electricity Safety, Quality and Continuity Regulations 2002 (ESQCR) state that network owners shall ensure that their equipment is constructed, installed, protected, used and maintained to prevent danger, in which two areas?

Possible answers

a)	Electrical and mechanical operation
b)	Daytime and night-time working practices
c)	Indoor and outdoor asset housings
d)	Urban and rural locations



Question 10 K6-1

Identify ONE role of customer feedback in power industry operations.

Possible answers

- | | |
|----|-------------------------------|
| a) | To increase operational risks |
| b) | To improve service quality |
| c) | To increase operational costs |
| d) | To reduce energy production |

Question 11 K6-2

What is a significant financial challenge for the UK power industry in achieving net-zero emissions by 2035?

Possible answers

- | | |
|----|---------------------------------------|
| a) | Increasing operational inefficiencies |
| b) | High initial investment costs |
| c) | Decreasing energy demand |
| d) | Lack of regulatory support |

Question 12 K6-4

Identify ONE impact of ethical business practices on an organisation.

Possible answers

- | | |
|----|------------------------------------|
| a) | Maximised short-term profits |
| b) | Increased brand reputation |
| c) | Higher long-term operational costs |
| d) | Higher employee turnover rates |



Question 13 K9-1

If asbestos is left undisturbed and is in a reasonably good visible condition, which ONE of the following practices should the company adopt?

Possible answers

a)	By law, the company must remove the asbestos
b)	Carry out an inspection on an ad-hoc basis
c)	The asbestos should be removed from sight by use of boxing-in
d)	The asbestos should be left in-situ and monitored

Question 14 K9-2

In the context of the Construction (Design and Management) Regulations 2015 (CDM 2015), what are individuals such as overhead linesperson, cable jointers and substation fitters defined as?

Possible answers

a)	Controller
b)	Designer
c)	Worker
d)	Delegate

Question 15 K9-3

According to Section 2 of the Health and Safety at Work Act 1974, it is the responsibility of every employer, as far as is reasonably practicable, to ensure employees:

Possible answers

a)	health, safety and welfare
b)	have opportunities for future financial incentives
c)	have access to flexible working procedures
d)	Personal Protective Equipment (PPE) fits correctly



Question 16 K9-4

According to The Confined Spaces Regulations 1997, before work commences, which ONE of the following key duties must be fulfilled?

Possible answers

a)	The local weather forecast is consulted
b)	Inspection and maintenance records data are referred to for guidance
c)	Vehicles near the work area are moved outside a five metre exclusion zone
d)	Adequate emergency arrangements must be put in place

Question 17 K9-5

Which ONE of the following substances is covered by the Control of Substances Hazardous Health Regulations 2002 (COSHH)?

Possible answers

a)	White spirit
b)	Radioactive substances
c)	Lead
d)	Asbestos

Question 18 K9-6

Regulation 8(2) of the Lifting Operations and Lifting Equipment Regulations 1998 (LOLER) defines a lifting operation as 'an operation concerned with the lifting or lowering of:

Possible answers

a)	a pallet
b)	a load
c)	plant and switchgear
d)	any item requiring more than two persons to lift it

Question 19 K9

Identify the regulations that requires employers to carry out lone worker risk assessments.

Possible answers

a)	The Provision and Use of Work Equipment Regulations 1998
b)	Management of Health and Safety at Work Regulations 1999
c)	Working Time Regulations 1998
d)	Health and Safety (Signs and Signals) Regulations 1996

Question 20 K9-10

After how many days of absence due to a work-related injury must an employer report the incident under RIDDOR (Reporting of Injuries, Diseases and Dangerous Occurrences Regulations 2013)?


Possible answers

a)	14
b)	10
c)	7
d)	3

Question 21 K9-11

What type of sign is this?

Possible answers

a)	Prohibition	
b)	Warning	
c)	Mandatory	
d)	Help	



Question 22 K10-1

What factors need to be considered, daily, before working at height?

Possible answers

a)	Weather conditions
b)	Optional PPE choices
c)	Time allowed for reaching and leaving the work area for comfort breaks
d)	Safe area around work zone for dropping of tools when a task is completed

Question 23 K17-1

Identify ONE purpose of the Environmental Protection Act (EPA) 1990.

Possible answers

a)	To increase industrial production
b)	To reduce government regulations
c)	To promote urban development
d)	To improve control of pollution

Question 24 K17-2

Which ONE of the following is a key consideration when working near Sites of Special Scientific Interest (SSSI)?

Possible answers

a)	Minimising environmental impact
b)	Maximising construction speed
c)	Ignoring local wildlife
d)	Reducing project costs



Question 25 K19-1

A power plant generates 2.4 GW of power. What is this value in scientific notation?

Possible answers

a)	$2.4 \times 10^6 \text{ W}$
b)	$2.4 \times 10^7 \text{ W}$
c)	$2.4 \times 10^8 \text{ W}$
d)	$2.4 \times 10^9 \text{ W}$

Question 26 K19-3

In a power plant efficiency table, which column would you expect to find the highest values?

Possible answers

a)	Input energy
b)	Output energy
c)	Efficiency percentage
d)	Energy loss

Question 27 K19-5

The power (P) in a circuit is given by ($P = VI$), where (V) is the voltage and (I) is the current.

What is the power when ($V = 230$) volts and ($I = 10$) amps?

Possible answers

a)	2,000 watts
b)	2,300 watts
c)	2,500 watts
d)	2,600 watts



Question 28 K19-4

A cable needs to be laid underground between two points, A and B, which are 100 metres apart horizontally. The cable route includes a drop of 20 metres.

What is the actual length of the cable needed between points A and B? Give your answer to the nearest metre.

Possible answers

a)	100 metres
b)	102 metres
c)	112 metres
d)	120 metres

Question 29 K19-2

A cable route requires a bend to avoid an obstacle. The cable needs to change direction by 30 degrees.

To ensure the bend is smooth and within the cable's bending radius, the jointer needs to calculate the arc length of the bend. The radius of the bend is 6 metres. The arc length (L) can be calculated using:

$$L = 2\pi r \times \frac{\theta}{360}$$

where (θ) is the angle in degrees, (r) is the radius and $\pi \sim 3.14$

What is the length of cable (L) needed to avoid the obstacle?

Possible answers

a)	1.57 metres
b)	3.14 metres
c)	10.46 metres
d)	37.68 metres



Question 30 K20-1

Which type of circuit allows current to flow through multiple paths?

Possible answers

a)	Series Circuit
b)	Parallel Circuit
c)	Open Circuit
d)	Short Circuit

Question 31 K20-2

What is the unit of magnetic flux?

Possible answers

a)	Farad
b)	Henry
c)	Tesla
d)	Weber

Question 32 K20-3

Which law explains the operation of transformers?

Possible answers

a)	Ohm's Law
b)	Faraday's Law of Electromagnetic Induction
c)	Coulomb's Law
d)	Kirchhoff's Law



Question 33 K20-2

Which law explains the force experienced by a current-carrying conductor in a magnetic field?

Possible answers

a)	Faraday's Law
b)	Lenz's Law
c)	Coulomb's Law
d)	Lorentz Force Law

Question 34 K21-1

What is the main advantage of using renewable energy sources for power generation?

Possible answers

a)	Lower initial cost
b)	Unlimited supply
c)	Higher efficiency
d)	Easier maintenance

Question 35 K21-2

What is the primary purpose of high-voltage transmission lines?

Possible answers

a)	To reduce energy losses over long distances
b)	To increase the current flow
c)	To step down voltage levels
d)	To store electrical energy



Question 36 K21

What is the typical voltage level for primary distribution in the UK?

Possible answers

a)	132 kV
b)	33 kV
c)	11 kV
d)	415 V

Question 37 K26-1

What is the primary purpose of XLPE insulation in cables?

Possible answers

a)	To increase current carrying capacity
b)	To provide mechanical protection
c)	To improve thermal stability and electrical properties
d)	To reduce cable weight

Question 38 K26-3

Which British Standard specifies the construction and requirements for cross-linked polyethylene (XLPE) insulated cables up to 33 kV?

Possible answers

a)	BS 5467
b)	BS 6622
c)	BS 6346
d)	BS 7671



Question 39 K26-4

Which component in paper-insulated cables provides mechanical protection and prevents moisture ingress?

Possible answers

a)	XLPE insulation
b)	Aluminium conductor
c)	Lead sheath
d)	Polyvinyl chloride (PVC) sheath

Question 40 K39-1

Who typically grants a wayleave?

Possible answers

a)	Local authorities
b)	Landowners or landlords
c)	Utility companies
d)	Government agencies

End of Questions



Practice Multiple-choice Test

Answer scheme

Question	Answer	Question	Answer	Question	Answer
1	B	15	A	29	B
2	D	16	D	30	B
3	C	17	A	31	D
4	A	18	B	32	B
5	A	19	B	33	D
6	D	20	C	34	B
7	B	21	B	35	A
8	A	22	A	36	C
9	A	23	D	37	C
10	B	24	A	38	B
11	B	25	D	39	C
12	B	26	C	40	B
13	D	27	B		
14	C	28	B		

Appendix F: Practice Interview Based on an EPA Portfolio Form

Employers/training providers are recommended to arrange for apprentices to carry out a practice Interview based on an EPA portfolio prior to end-point assessment.

Instructions

This should be read in conjunction with the PIDCJ Specification.

This template has been designed to help the suitable person playing part of the independent assessor and has three purposes:

1. To prepare for a practice interview based on an EPA portfolio
2. Designed to holistically assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship by the apprentice
3. To provide feedback to the apprentice in preparation for the live assessment

The assessor should:

- complete the form below which has two parts to assess the apprentice's Interview
- review the apprentice's EPA portfolio before the practice assessment

Quick Tip – How to complete the form below:

Full Name of Apprentice	
Apprentice ID checked	<input type="checkbox"/>
Location of End-point Assessment	
Full Name of Independent Assessor	
Date of Interview	
Start Time	
End Time	
Apprentice asked to end the assessment early (check the box)	<input type="checkbox"/>
Ind. Assessor suggested assessment continues (check the box)	<input type="checkbox"/>
Resit (check the box)	<input type="checkbox"/>
Assessor additional comments	
	Grade
Please indicate the apprentice's preliminary grade for the interview (F/P/D):	

It is important to ensure that the page illustrated is completed by the assessor.

The assessor should write additional comments to support the provisional grade decision.

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and ALL the distinction descriptors	D
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	<input type="checkbox"/>	Justifies the application of sustainability practices in the power industry	<input type="checkbox"/>

Check the pass box, and distinction box, if the apprentice achieved the descriptors.

Portfolio reference	
Pass questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Distinction questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Note any additional questions asked during interview	

Include the page number(s) of where in the portfolio of evidence has been seen that meets the descriptor above.

Develop some open ended questions in relation to the KSBs.

Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Distinction <input type="checkbox"/>
Summary of response to question(s): <small>Box will expand to take all comments</small>		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the Pass criteria <small>Box will expand to take all comments</small>		

If follow up questions are asked include them here.

Check the fail, pass or distinction box to confirm the grade for this group.

Power Industry Distribution Cable Jointer Interview

Full Name of Apprentice	
Apprentice ID checked	<input type="checkbox"/>
Location of End-point Assessment	
Full Name of Independent Assessor	
Date of Interview	
Start Time	
End Time	
Apprentice asked to end the assessment early (check the box)	<input type="checkbox"/>
Ind. Assessor suggested assessment continues (check the box)	<input type="checkbox"/>
Resit (check the box)	<input type="checkbox"/>
Assessor additional comments	

	Grade
Please indicate the apprentice's preliminary grade for the interview (F/P/D):	

By signing below, I confirm that the information provided is correct and the preliminary grade awarded is a true reflection of the performance by the apprentice.

Independent Assessor Full Name and Signature:	Date:

Please Note:

To achieve a Pass, the Apprentice must achieve all the pass descriptors.

To achieve a Distinction, the Apprentice must achieve all the pass descriptors and **all** the distinction descriptors.

Fail: the apprentice does not demonstrate all the pass descriptors.

Introduction

At the start of the interview the assessor will:

- Introduce themselves
- State their role
- State the date of the interview
- Request and confirm ID from the apprentice prior to beginning the assessment
- Provide apprentice with information on the format of the interview, including the timescales they will be working to

The apprentice will:

- Confirm their full name
- Confirm their date of birth
- Give their employer's name
- Confirm their location and that no one else is present in the room, if remote apprentice to pan camera 360°
- Confirm they are prepared for the interview; and confirm they can continue with the interview
- Confirm that the evidence within the portfolio relates to the KSB's that will be assessed during the interview

Important points to inform the apprentice

- Please don't judge anything by the notes being taken, nor infer anything positive or negative from how long the interview lasts
- Please don't consider me rude if I tell you that we need to move onto the next question. This will ensure that you get the opportunity to fully demonstrate your competencies within the time allowed
- Ensure the apprentice has a drink of water to hand
- Please ensure that your mobile is switched off or placed somewhere where you will not be interrupted during the interview
- Confirm that a sign is placed on the door of the interview room. Interview in progress 'Do not disturb'

Note: The live interview will be fully recorded for the purpose of audit and quality assurance

Assessor Guidance

Delivery

- The interview will last 60 minutes. An additional 10% is allowed for the apprentice to complete their last answer
- You must be in full control. Time management is key! If the apprentice veers off track, they need to be reined back in
- The apprentice may choose to end the assessment method early
- You must ensure the apprentice is fully aware of all assessment requirements
- You cannot suggest or choose to end the assessment methods early, unless in an emergency
- You must ensure the apprentice understands the implications of ending an assessment early if they choose to do so
- You may suggest the assessment continues
- You must document the apprentice's request to end the assessment early
- You must ask a minimum of **eight** open questions
- The purpose of the questions is to cover the following topics: Communication and working with others; Sustainability; CPD and improvement activities; Working on the highway, excavations and laying cables
- Please work through the sections in the order they appear within this document
- Additional follow-up questions are allowed to seek clarification and to make a judgement against grading descriptor
- The text of additional questions must be recorded on this document
- Adapt the questions to the apprentice's circumstances following your review of their portfolio evidence
- Supply brief written notes where each criterion has been met
- If the apprentice does not achieve a descriptor, provide written notes that EUIAS can feed back to the apprentice to help the apprentice prepare for a resit
- Both the recording and the written notes will be subject to IQA

At the end of the interview - Thank the apprentice for their time

Task 1: Communication and working with others

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and ALL the distinction descriptors	D
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	<input type="checkbox"/>	Justifies the application of teamworking principles to meeting work goals	<input type="checkbox"/>
Describes how they communicate in a professional manner by using communication techniques and industry terminology suitable for the context	<input type="checkbox"/>		
Describes how they apply written communication techniques to produce or amend documents in their work that are suitable for the context	<input type="checkbox"/>		
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	<input type="checkbox"/>		

Portfolio reference	
Pass questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Distinction questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Note any additional questions asked during interview	

Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Distinction <input type="checkbox"/>
--------------------------------------	--------------------------------------	---



Summary of response to question(s):

Box will expand to take all comments

Feedback that you can provide to the apprentice if the apprentice has failed to meet the Pass criteria

Box will expand to take all comments

K47 K48 S33 B6 Teamwork

K49 S34 S36 B5 Communication

K45 S37 Information and digital technology



Task 2: Sustainability

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and ALL the distinction descriptors	D
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	<input type="checkbox"/>	Justifies the application of sustainability practices in the power industry	<input type="checkbox"/>

Portfolio reference	
Pass questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Distinction questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Note any additional questions asked during interview	

Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Distinction <input type="checkbox"/>
Summary of response to question(s): Box will expand to take all comments		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the Pass criteria Box will expand to take all comments		

K16 S15 B2 Sustainability

Task 3: CPD and improvement activities

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and ALL the distinction descriptors	D
Describes how they have identified an area for improvement in the workplace	<input type="checkbox"/>	Justifies the potential impact of the improvement suggestion with consideration to benefits and any potential risks	<input type="checkbox"/>
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	<input type="checkbox"/>		

Portfolio reference	
Pass questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Distinction questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Note any additional questions asked during interview	

Fail <input type="checkbox"/>	Pass <input type="checkbox"/>	Distinction <input type="checkbox"/>
Summary of response to question(s): Box will expand to take all comments		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the Pass criteria Box will expand to take all comments		

S32 Contribute to improvement activities

S38 B7 Continued professional development



Task 4: Working on the highway, excavations and laying cables

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and ALL the distinction descriptors
Describes how they conduct plant or vehicle checks in line with company requirements	<input type="checkbox"/>	
Describes how they carry out visual inspections, use electronic locating equipment to identify evidence of overhead services and buried utilities, and 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)	<input type="checkbox"/>	
Describes how they erect and maintain signing, lighting and guarding in line with the New Roads and Street Works Act	<input type="checkbox"/>	
Describes how they monitor works using mechanical excavators in line with company procedures taking account of mechanical equipment limitations and exclusions	<input type="checkbox"/>	
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	<input type="checkbox"/>	
Describes how they install cables and apply protection to protect the	<input type="checkbox"/>	



To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P	To achieve a DISTINCTION the apprentice must achieve ALL the pass descriptors and ALL the distinction descriptors
cables from damage in line with company procedures		

Portfolio reference	
Pass questions - to be tailored to apprentice portfolio	
Develop some open-ended questions	
Note any additional questions asked during interview	

Fail <input type="checkbox"/>	Pass <input type="checkbox"/>
Summary of response to question(s): <small>Box will expand to take all comments</small>	
Feedback that you can provide to the apprentice if the apprentice has failed to meet the Pass criteria <small>Box will expand to take all comments</small>	

- K15 S13** Plant or vehicle checks
- K13 S10** Location and avoidance of utilities
- K40 K41 K42 S29 S30 S31** Excavations including working on highways
- K43 S19** Laying cables

Appendix G: Example: Trade Test Practical Assessor Recording Form

EUIAS are required to approve employers' trade test practical assessment with questions materials to be used by employer assessors, apprentices and their managers. The following pages include an example trade test practical assessment recording form for assessors. This form can be used by employers without adaptation or as a starting point for creating an employer-specific trade test practical assessment with questions recording form for employer assessors.

Power Industry Distribution Cable Jointer

Trade Test Practical Assessment with Questions

Instructions for the employer assessor

Delivery

- The trade test practical assessment with questions
 - must take 30 - 37.5 hours.
 - 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
- You must
 - observe apprentices in line with the employer's trade test assessment specification including the ratio of employer assessors to apprentices. You must be as unobtrusive as possible.
 - 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
 - ask at least 10 questions. Questioning can occur both during and after the practical assessment
 - use the questions from the employer's question bank or tailor questions to suit individual circumstances
 - write each tailored question below the sample standardised question
- You can ask follow-up questions to clarify answers given by the apprentice. These questions are in addition to the above set number of questions for the trade test practical assessment with questions

The time for questioning is included in the overall assessment time.

Answers to questions, must be documented.

The apprentice may choose to end the assessment method early

- You must ensure the apprentice is fully aware of all assessment requirements

- You cannot suggest or choose to end the assessment methods early, unless in an emergency
- You must ensure the apprentice understands the implications of ending an assessment early if they choose to do so
- You may suggest the assessment continues
- You must document the apprentice's request to end the assessment early



Name of Apprentice	
<input type="checkbox"/> Apprentice ID checked	
Are Reasonable Adjustments required? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Please give details	
Location of Trade Test	
Full Name of Employer Assessor	
Date(s) of Trade Test	
Total Assessment Time	
Apprentice asked to end the assessment early (check the box)	<input type="checkbox"/>
Employer Assessor suggested assessment continues (check the box)	<input type="checkbox"/>

Grading

Fail - does not meet pass criteria

To achieve a PASS the apprentice must demonstrate ALL the PASS descriptors

To achieve a DISTINCTION the apprentice must achieve ALL the PASS descriptors and ALL of the DISTINCTION descriptors

Preliminary Grade awarded (Please tick the relevant box)	Distinction	Pass	Fail
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Employer assessor justification for preliminary grade awarded:			



Trade Test Practical Assessment Summary	Pass	Distinction
Group 1: Prepare for power network cable jointer activities K46 S1 S2 S3	<input type="checkbox"/>	<input type="checkbox"/>
Group 2: Organise and supervise a working party S4 B3	<input type="checkbox"/>	
Group 3: Maintain work site health, safety, and environment compliance K7 K11 K18 S8 S9 S11 S14 B1	<input type="checkbox"/>	<input type="checkbox"/>
Group 4: Tools and equipment K23 K24 S17 S18	<input type="checkbox"/>	
Group 5: Identify apparatus K25 S6	<input type="checkbox"/>	
Group 6: Install, connect and repair distribution underground electrical supplies on low voltage cable networks K27 K30 K31 S20 S21	<input type="checkbox"/>	<input type="checkbox"/>
Group 7: Connect and repair apparatus on high voltage cable networks K29 K32 S22 S23	<input type="checkbox"/>	<input type="checkbox"/>
Group 8: Make and break live conductor connections K28 S24 S25	<input type="checkbox"/>	
Group 9: Identify a fault K36 S26	<input type="checkbox"/>	
Group 10: Complete work records K44 S35	<input type="checkbox"/>	

Introduction

At the start of the trade test the Employer Assessor will:

- Introduce themselves
- Confirm their role
- Provide apprentice with information on the format of the trade test, including the timescales they will be working to.

(The Employer Assessor can share the grading guidance with the apprentice as this appears in the assessment plan)

The apprentice will:

- Give their full name
- Their date of birth
- Confirm they are prepared for the trade test; and confirm they can continue with the trade test.

The apprentice will be asked to show their identification to the Employer Assessor prior to beginning the assessment

Important points to inform the apprentice

- If at any point during the trade test you perform an unsafe act/task which contravenes Health and Safety, I will immediately stop the trade test.
- Please do not judge anything by me taking notes and you should not infer anything positive or negative from how long the trade test lasts.
- Ensure that your mobile is turned off or placed somewhere where you will not be interrupted during the trade test.



Group 1: Prepare for power network cable jointer activities

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Reviews drawings, instructions or information to understand the task's requirements.(S1)	<input type="checkbox"/>
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. (K46, S2, S3)	<input type="checkbox"/>

To achieve a DISTINCTION the apprentice must achieve ALL the PASS descriptors and ALL of the following:descriptors	D
Justifies their planning in terms of efficiencies achieved and the balance of safety, environmental impact, quality and cost in planning decisions. (K46, S2, S3)	<input type="checkbox"/>

Comments: (what was observed)
Questions to help evidence the Pass and Distinction descriptors above <i>Develop some open-ended questions</i>
Write down the question(s) asked:
Summary of response to question(s):
Provide comments explaining the reasons for awarding a Fail, Pass or Distinction grade awarded for Group 1: Prepare for power network cable jointer activities



Group 1 - Fail	<input type="checkbox"/>	
Group 1 - Pass	<input type="checkbox"/>	
Group 1 - Distinction	<input type="checkbox"/>	

K46: Planning, prioritising and time management techniques for self and working party. Live or dead working planning considerations.

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.

S2: Prioritise and plan work with consideration for safety, environmental impact, quality, and cost.

S3: Identify and organise resources to complete tasks.



Group 2: Organise and supervise a working party

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors		P
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. (S4, B3)		<input type="checkbox"/>
Comments: (what was observed)		
Questions to help evidence the Pass descriptors above Develop some open-ended questions		
Write down the question(s) asked:		
Summary of response to question(s):		
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 2: Organise and supervise a working party		
Group 2 - Fail	<input type="checkbox"/>	
Group 2 - Pass	<input type="checkbox"/>	

S4: Receive and clear a safety document (permit to work). Brief a working party.
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.

Group 3: Maintain work site health, safety, and environment compliance

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Identifies hazards and risks in the workplace and applies control measures including consideration of hazards associated with work on or near electrical power networks. (K7, K11, S8, S9, B1)	<input type="checkbox"/>
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. (K7, K11, S8, S9, B1)	<input type="checkbox"/>
Applies measures to leave power work environments in a safe condition in line with company procedures. (S11)	<input type="checkbox"/>
Segregates resources for reuse, recycling, and waste handling in line with company procedures for recycling and waste transfer. (K18, S14)	<input type="checkbox"/>
To achieve a DISTINCTION the apprentice must achieve ALL the PASS descriptors and ALL of the following:descriptors	D
Justifies how the controls they applied eliminated or reduced risks to an acceptable level using a hierarchical approach to risk assessment	<input type="checkbox"/>
Comments: (what was observed)	
Questions to help evidence the Pass and Distinction descriptors above Develop some open-ended questions	
Write down the question(s) asked:	
Summary of response to question(s):	



Provide comments explaining the reasons for awarding a Fail, Pass or Distinction grade awarded for Group 3: Maintain work site health, safety, and environment compliance

Group 3 - Fail	<input type="checkbox"/>	
Group 3 - Pass	<input type="checkbox"/>	
Group 3 - Distinction	<input type="checkbox"/>	

- K7:** The hazards associated with work on or near electrical power networks.
- K11:** Risk assessments and method statements. Emergency procedures. Personal protective equipment (PPE). Manual handling. Fire safety.
- K18:** Recycling and waste management requirements.
- S8:** Identify hazards and risks and apply control measures.
- S9:** Apply health and safety procedures in compliance with regulations, standards, and guidance.
- S11:** Apply measures to leave power work environments in a safe condition.
- S14:** Segregate waste for reuse, recycling, and waste transfer.
- B1:** Prioritise health and safety. For example, risk aware, minimise risks, and proactively work towards preventing accidents.



Group 4: Tools and equipment

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Selects, checks, and prepares personal tools and equipment in line with insulated tools selection and care considerations. (K23, S17)	<input type="checkbox"/>
Uses or operates personal tools and equipment in line with safety and operational requirements. (K23, S17)	<input type="checkbox"/>
Stores personal tools and equipment in line with company requirements. (K23, S17)	<input type="checkbox"/>
Sets up spiking gun in line and completes post use maintenance requirements in line with company procedures. (K24, S18)	<input type="checkbox"/>

Comments: (what was observed)	
Questions to help evidence the Pass descriptors above <i>Develop some open-ended questions</i>	
Write down the question(s) asked:	
Summary of response to question(s):	
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 4: Tools and equipment	
Group 4 - Fail	<input type="checkbox"/>
Group 4 - Pass	<input type="checkbox"/>

K23: Insulated tools - selection and care considerations.

K24: Spiking gun set up and maintenance requirements.

S17: Select, check, prepare, use or operate, and store personal tools and equipment.

S18: Set up spiking gun.



Group 5: Identify apparatus

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Identifies apparatus to be worked on using positive identification methods suitable for the equipment and the situation. (K25, S6)	<input type="checkbox"/>

Comments: (what was observed)

Questions to help evidence the Pass descriptors above

Develop some open-ended questions

Write down the question(s) asked:

Summary of response to question(s):

Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 5: Identify apparatus

Group 5 - Fail

Group 5 - Pass

K25: Positive methods for apparatus identification.

S6: Identify apparatus to be worked on.

Group 6: Install, connect and repair distribution underground electrical supplies on low voltage cable networks

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Follows approved live working procedures. (S20)	<input type="checkbox"/>
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. (K27, K30, K31, S21)	<input type="checkbox"/>
Explains how application technique will prevent moisture ingress. (K27, K30, K31, S21)	<input type="checkbox"/>

To achieve a DISTINCTION the apprentice must achieve ALL the PASS descriptors and ALL of the following: descriptors	D
Completes procedures efficiently for example, performs activities methodically, performs activities logically to save time, avoids issues with no need to back-track. (K27, K30, K31, S21)	<input type="checkbox"/>

Comments: (what was observed)
<p>Questions to help evidence the Pass and Distinction descriptors above <i>Develop some open-ended questions</i></p> <p>Write down the question(s) asked:</p>
Summary of response to question(s):



Provide comments explaining the reasons for awarding a Fail, Pass or Distinction grade awarded for Group 6: Install, connect and repair distribution underground electrical supplies on low voltage cable networks

Group 6 - Fail	<input type="checkbox"/>	
Group 6 - Pass	<input type="checkbox"/>	
Group 6 - Distinction	<input type="checkbox"/>	

K27: Types of earthing systems, low voltage (LV) services and terminations.

K30: LV mains jointing techniques – mains and service; termination of services into cut outs.

K31: Joint protection materials and the considerations in application techniques to prevent moisture ingress.

S20: Follow live working 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.

Group 7: Connect and repair apparatus on high voltage cable networks

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Joins 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. (K29, S22)	<input type="checkbox"/>
Receives phasing colours and interprets phasing diagrams to enable completion of HV jointing tasks to required specification. (K32, S23)	<input type="checkbox"/>
To achieve a DISTINCTION the apprentice must achieve ALL the PASS descriptors and ALL of the following:descriptors	D
Completes procedures efficiently for example, performs activities methodically, performs activities logically to save time, avoids issues with no need to back-track. (K29, S22)	<input type="checkbox"/>
Comments: (what was observed)	
Questions to help evidence the Pass and Distinction descriptors above <i>Develop some open-ended questions</i>	
Write down the question(s) asked:	
Summary of response to question(s):	
Provide comments explaining the reasons for awarding a Fail, Pass or Distinction grade awarded for Group 7: Connect and repair apparatus on high voltage cable networks	



Group 7 - Fail	<input type="checkbox"/>	
Group 7 - Pass	<input type="checkbox"/>	
Group 7 - Distinction	<input type="checkbox"/>	

K29: High voltage (HV) jointing techniques up to 11kV on both modern and legacy cable types.

K32: Phasing colours and diagrams.

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.

S23: Receive phasing colours for HV jointing tasks and interpret phasing diagrams.

Group 8: Make and break live conductor connections

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Makes and breaks live conductor connections on low voltage underground networks in line with company procedures. (S24)	<input type="checkbox"/>
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. (K28, S25)	<input type="checkbox"/>

Comments: (what was observed)	
Questions to help evidence the Pass descriptors above <i>Develop some open-ended questions</i>	
Write down the question(s) asked:	
Summary of response to question(s):	
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 8: Make and break live conductor connections	
Group 8 - Fail	<input type="checkbox"/>
Group 8 - Pass	<input type="checkbox"/>

K28: Pre and post connection testing techniques: insulation and continuity, voltage, polarity, earth loop impedance, phase rotation.

S24: Make and break live conductor connections on LV underground networks.

S25: Perform testing procedures before and after making and breaking connections.



Group 9: Identify a fault

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Identifies a common fault on an electrical power circuit, plant or apparatus and tests to find the fault condition. (K6, S26)	<input type="checkbox"/>

Comments: (what was observed)	
Questions to help evidence the Pass descriptors above <i>Develop some open-ended questions</i>	
Write down the question(s) asked:	
Summary of response to question(s):	
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 9: Identify a fault	
Group 9 - Fail	<input type="checkbox"/>
Group 9 - Pass	<input type="checkbox"/>

K36: The symptoms and causes of common faults on electrical power circuits, plant and apparatus.

S26: Identify fault. Test to find the fault condition.

Group 10: Complete work records

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors		P
Records information for work tasks in line with company procedures for data recording, documentation control and auditable records. (K44, S35)		<input type="checkbox"/>
Comments: (what was observed)		
Questions to help evidence the Pass descriptors above Develop some open-ended questions		
Write down the question(s) asked:		
Summary of response to question(s):		
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 10: Complete work records		
Group 10 - Fail	<input type="checkbox"/>	
Group 10 - Pass	<input type="checkbox"/>	

K44: Documentation requirements: data recording, documentation control, auditable records.

S35: Record information.

Appendix H: Example: Trade Test Technical Interview Assessor Recording Form

EUIAS are required to approve employers' trade test technical interviews materials to be used by employer assessors, apprentices and their managers. The following pages include an example trade test technical interview recording form for assessors. This form can be used by employers without adaptation or as a starting point for creating an employer-specific trade test technical interview recording form for employer assessors.



Power Industry Distribution Cable Jointer

Trade Test Technical Interview – Example of Assessor Recording Form

Instructions for the employer assessor

Delivery

- The interview will last at least 60 minutes
- This is an Employer Assessor led formal interview and not a professional discussion. You must be in full control. Time management is key! If the apprentice veers off track, they need to be reined back in
- You must ask a minimum of six open questions
- Tailor questions to suit individual circumstances
- The purpose of the questions is to cover the following topics: role and responsibilities; electrical danger and control; electrical plant and apparatus; low voltage networks; fault diagnosis; asset security
- Answers to questions, must be documented.
- If the interview is conducted by video conferencing, timeline each question to the recording. Only log the time for the start of each question asked
- Additional follow-up questions are allowed to seek clarification and to make a judgement against grading descriptor
- Supply brief written notes where each criterion has been met
- Complete the summary report page
- Record a preliminary grade
- Complete the justification for the preliminary grade
- Both the recording and the written notes will be subject to IQA by EUIAS.

The apprentice may choose to end the assessment method early

- You must ensure the apprentice is fully aware of all assessment requirements
- You cannot suggest or choose to end the assessment methods early, unless in an emergency
- You must ensure the apprentice understands the implications of ending an assessment early if they choose to do so

- You may suggest the assessment continues

At the end of the interview -Thank the apprentice for their time and wish them good luck



Name of Apprentice	
<input type="checkbox"/> Apprentice ID checked	
Are Reasonable Adjustments required? Yes <input type="checkbox"/> No <input type="checkbox"/>	
Please give details	
Location of Technical Interview	
Full Name of Employer Assessor	
Date of Technical Interview	
Start Time	
End Time	
Apprentice asked to end the assessment early (check the box)	<input type="checkbox"/>
Employer Assessor suggested assessment continues (check the box)	<input type="checkbox"/>

Grading

Fail - does not meet pass criteria

To achieve a PASS the apprentice must demonstrate ALL the PASS descriptors

Preliminary Grade awarded (Please tick the relevant box)	Pass <input type="checkbox"/>	Fail <input type="checkbox"/>
Employer assessor justification for preliminary grade awarded:		



Trade Test Technical Interview Summary	Pass
Group 1: Role and responsibilities K4 K5 S5 B4	<input type="checkbox"/>
Group 2: Electrical danger - control and first aid K8 K12 K34 K35 S12	<input type="checkbox"/>
Group 3: Electrical plant and apparatus K22 S7	<input type="checkbox"/>
Group 4: Low voltage networks K33	<input type="checkbox"/>
Group 5: Fault diagnosis K37 K38 S27 S28	<input type="checkbox"/>
Group 6: Asset security K14 S16	<input type="checkbox"/>

Introduction

At the start of the trade test the Employer Assessor will:

- Introduce themselves
- State their role
- State the date of the interview
- Request and confirm ID from the apprentice
- Provide apprentice with information on the format of the technical interview, including the timescales they will be working to.

The apprentice will:

- Confirm their full name
- Confirm their date of birth
- Confirm they are prepared for the interview; and confirm they can continue with the interview

Important points to inform the apprentice

- Please do not judge anything by the notes being taken, nor infer anything positive or negative from how long the interview lasts.
- We are not allowed to give you feedback at any point. So unfortunately, we will not be able to give you any indication of your grade and whether you have passed or failed at the end.
- Please ensure that your mobile off or somewhere where you will not be interrupted during the interview.
- Sign placed on the door of the interview room. Interview in progress 'Do not disturb'.
- This interview will be fully recorded for the purpose of audit and quality assurance.

Group 1: Role and responsibilities

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Outlines their role as a cable jointer including their limits of responsibility and how they report or escalate issues. (K4, S5, B4)	<input type="checkbox"/>
Describes how they respond and adapt to work demands in line with organisational requirements. (K4, S5, B4)	<input type="checkbox"/>
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. (K5)	<input type="checkbox"/>

Timeline reference:	<i>Record time if interview conducted by video conferencing</i>
----------------------------	---

Write down the question(s) asked:

Summary of response to question(s):

Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 1: Role and responsibilities

Group 1 - Fail	<input type="checkbox"/>	
Group 1 - Pass	<input type="checkbox"/>	

K4: Cable jointer's role and responsibilities. Limitations of role and escalation procedures
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



S5: Report or escalate issues outside limits of responsibility

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

Group 2: Electrical danger - control and first aid

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
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. (K8, K12, S12)	<input type="checkbox"/>
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. (K8, K12, S12)	<input type="checkbox"/>
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. (K34)	<input type="checkbox"/>
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. (K35)	<input type="checkbox"/>

Timeline reference:	<i>Record time if interview conducted by video conferencing</i>
Write down the question(s) asked:	
Summary of response to question(s):	

Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 2: Electrical danger - control and first aid

Group 2 - Fail	<input type="checkbox"/>	
Group 2 - Pass	<input type="checkbox"/>	

K8: The dangers of electricity and how an electric shock can be received: direct contact, induced (impressed) voltage, and arcing. Electric shock emergency procedures

K12: Emergency first aid

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)

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

S12: Respond in the event of an emergency first aid situation including situations where there is electrical risk

Group 3: Electrical plant and apparatus

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors		P
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. (K22, S7)		<input type="checkbox"/>
Timeline reference:	<i>Record time if interview conducted by video conferencing</i>	
Write down the question(s) asked:		
Summary of response to question(s):		
Provide comments explaining the reasons for awarding a Fail, Pass or Distinction grade awarded for Group 3: Electrical plant and apparatus		
Group 3 - Fail	<input type="checkbox"/>	
Group 3 - Pass	<input type="checkbox"/>	

K22: Power engineering electrical plant and apparatus, the properties and purpose of transformers, switchgear, earthing devices, voltage control and automated equipment
S7: Interpret network schematic diagrams and geographic records to identify running arrangements

Group 4: Low voltage networks

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors		P
Explains LV network running arrangements and how fuses are graded to provide discrimination. (K33)		<input type="checkbox"/>
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. (K33)		<input type="checkbox"/>
Timeline reference:	<i>Record time if interview conducted by video conferencing</i>	
Write down the question(s) asked:		
Summary of response to question(s):		
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 4: Low voltage networks		
Group 4 - Fail	<input type="checkbox"/>	
Group 4 - Pass	<input type="checkbox"/>	

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

Group 5: Fault diagnosis

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
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. (K37, K38, S27)	<input type="checkbox"/>
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. (S28)	

Timeline reference:	<i>Record time if interview conducted by video conferencing</i>
Write down the question(s) asked:	
Summary of response to question(s):	
Provide comments explaining the reasons for awarding a Fail or Pass grade awarded for Group 5: Fault diagnosis	
Group 5 - Fail	<input type="checkbox"/>
Group 5 - Pass	<input type="checkbox"/>

K37: Problem-solving and fault-finding techniques: non-invasive visual examinations, invasive physical examinations of plant, testing procedures, root cause analysis

K38: Fault diagnostic equipment purpose and operation: time domain reflectometer (TDR), low voltage faults sniffer. Fitting and setting up of auto-reclose equipment.

S27: Conduct fault diagnosis on underground cable networks to identify underlying cause

S28: Make recommendations for the repair or restoration of plant or apparatus based on the findings of diagnostic procedures

Group 6: Asset security

To achieve a PASS the apprentice must demonstrate ALL the following pass descriptors	P
Describes how they apply asset security measures in line with company procedures. (K14, S16)	<input type="checkbox"/>

Timeline reference:		
Write down the question(s) asked:		
Summary of response to question(s):		
Provide comments explaining the reasons for awarding a Fail, Pass or Distinction grade awarded for Group 6: Asset security		
Group 6 - Fail	<input type="checkbox"/>	
Group 6 - Pass	<input type="checkbox"/>	

K14: Asset security requirements

S16: Apply security measures



© Energy & Utility Skills

All rights reserved. No part of this publication may be reproduced, stored in a retrievable system, or transmitted in any form or by any means whatsoever without prior written permission from the copyright holder.

www.euskills.co.uk