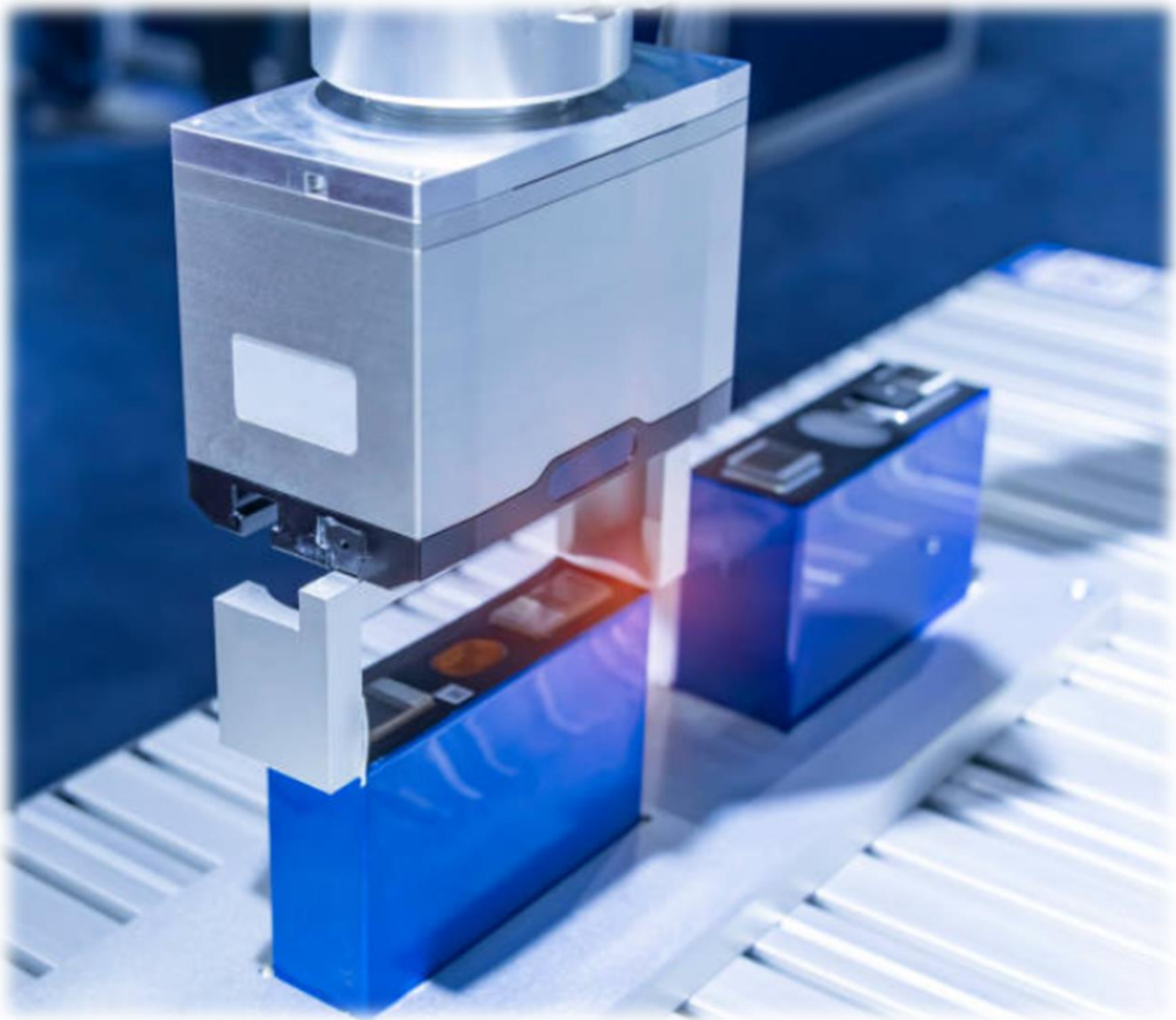


**Battery Manufacturing Technician
Level 3 Apprenticeship Standard (ST1338)
Specification**



This guide describes the different types of End-Point Assessment tests, the test rules and who should be involved. Preparing for End-Point Assessment and working with SIAS are also covered.

SIAS is the science industry assessment service. It is part of the Cogent Skills Group. For further information about apprenticeship standards and Trailblazers please contact info@siasuk.com.

Version History

Version	Comments
1.0	This guide refers to Assessment Plan version 1.0

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Objective

The aim of this End-Point Assessment (EPA) is to ensure that the apprentice is occupationally competent against the knowledge, skills and behaviours outlined in the assessment plan for this standard.

Battery manufacturing technicians are found in the process manufacturing sector, producing cells and batteries.

Cells and batteries store chemical energy and convert it to electrical energy. A cell is a single unit, whereas two or more cells is a battery. They are used in transport - micro-mobility such as scooters and bikes, cars, vans, lorries, buses, trains, planes, and ships. Domestic applications such as power walls. Power industry grid balancing facilities. Mobile phones and laptops and many more. Batteries play a key role in the environmental agenda, providing storage for renewable energy generation and power to electric vehicles.

This is a core and options apprenticeship. An apprentice must be trained and assessed on the core and one option relevant to their role. The options are:

- Option 1. Electrode technician
- Option 2. Cell assembly technician
- Option 3. Ageing, formation and testing technician
- Option 4. Module and pack technician

Battery manufacturing technicians prepare for and conduct processes in one stage of cell or battery manufacture. Electrode technicians produce the component that goes in battery cells. They perform processes such as mixing, coating, drying, calendaring, and electrode slitting. Cell assembly technicians make individual cells performing processes such as winding, stacking, filling, and sealing. Formation technicians perform formation, ageing and testing processes and final inspection of cells, ensuring cells are charged and working. Module and pack technicians combine individual cells to make battery modules and packs, and conduct end of line testing and cell finishing. In relation to the stage that they work in, technicians conduct quality assurance and maintain process records. Maintaining workplace health, safety and environment is also key. Technicians also support other activities including continuous improvement, inventory control, and maintenance.

In their daily work, they interact with other members of the manufacturing team. They also have contact with other teams for example, process engineers, maintenance engineers, supply chain staff and warehouse staff.

They are responsible for complying with health, safety, environmental and sustainability regulations, standards, and guidance. This may include wearing specialist personal protective equipment for working in clean and dry facilities, and with high voltage and hazardous materials such as electrolyte. They must ensure that products meet quality specifications and manufacturing guidelines and are produced to schedule and cost. They may work as part of a small or large manufacturing team.

They typically report to a production manager.

Prior Learning and Qualifications

Employers may require candidates to have a health screening before working in a clean room.

Overview

A full-time battery manufacturing technician apprentice typically spends 36 months on-programme. The apprentice must spend at least 12 months on-programme and complete the required amount of off-the-job training in line with the apprenticeship funding rules.

The End-Point Assessment should be completed within an End-Point Assessment period lasting typically 3 months. The apprentice must complete their training and meet the gateway requirements before starting their End-Point Assessment. The End-Point Assessment will assess occupational competence. This End-Point Assessment has 3 assessment methods. The grades available for each assessment method are below.

Assessment method 1 - observation with questions:

- fail
- pass
- distinction

Assessment method 2 - interview underpinned by a portfolio of evidence:

- fail
- pass
- distinction

Assessment method 3 - multiple-choice test:

- fail
- pass

The result from each assessment method is combined to decide the overall apprenticeship grade. The following grades are available for the apprenticeship:

- fail
- pass
- merit
- distinction

Competence Evaluation

During the apprenticeship, regular evaluation of the competence of the apprentice against the apprenticeship standard will help to ensure that they achieve full occupational competence by the end of their training, and they are ready for End-Point Assessment. Confirmation from the employer that the apprentice is fully competent is needed before End-Point Assessment can take place.

As competence evaluation is an in-programme activity, the process that is used for this has not been mandated. It is for the employer supported by their training provider to decide how they wish to do this. To help with this SIAS has produced the SIAS Competence Tracker.

Gateway Requirements

Apprentices must complete the gateway requirements and provide evidence to SIAS as detailed below before taking the End-Point Assessment. On completion of the gateway requirements, the employer must confirm the apprentice as ready for the End-Point Assessment.

The apprentice must:

- confirm they are ready to take the End-Point Assessment
- have achieved English and mathematics qualifications in line with the apprenticeship funding rules
- submit a portfolio of evidence for the interview underpinned by a portfolio of evidence

Assessment Methods

The standard is assessed using three assessment methods that can be delivered in any order.

1. Observation with Questions.
2. Interview Underpinned by a Portfolio of Evidence.
3. Multiple-Choice Test

Assessment Method 1: Observation with Questions

In the observation with questions, an end-point assessor observes the apprentice in their workplace and asks questions. The apprentice completes their day-to-day duties under normal working conditions. Simulation is not allowed. The end-point assessor must only observe one apprentice at a time to ensure quality and rigour. They must be as unobtrusive as possible.

SIAS will give the apprentice 2 weeks' notice of the observation with questions. The observation will be 3 hours long and the end-point assessor can increase the time of the observation with questions by up to 10% to allow the apprentice to complete a task or respond to a question if necessary. The observation may be split into discrete sections held on the same working day.

SIAS will manage invigilation of the apprentice during the assessment, to maintain security of the End-Point Assessment, in line with their malpractice policy. This includes breaks and moving between locations.

The end-point assessor will explain to the apprentice the format and timescales of the observation with questions before it starts. This does not count towards the assessment time.

The end-point assessor should observe the following during the observation:

Core

- organise work
- maintain workplace health, safety and environment following safety, environmental and risk management systems including risk assessments
- undertake quality control processes

- complete process manufacturing records for example, process records
- verbal communication with others

Electrode technician

- prepare for electrode manufacturing including use of specialist personal protective equipment
- perform electrode manufacturing processes for example: mixing, coating, calendaring, slitting and cutting including use of Human Machine Interface (HMI)

Cell assembly technician

- prepare for cell assembly manufacturing including use of specialist personal protective equipment
- perform cell assembly processes for example: preparation (drying), winding, stacking, can insertion, electrode slitting (cylindrical cells) and cutting (pouch cells), stacking, and assembly (deep draw and heat sealing) including use of HMI

Formation, ageing and testing technician

- prepare for formation, ageing and testing manufacturing
- perform formation, ageing and testing processes including use of HMI
- monitor fire risk

Module and pack technician

- prepare for module and pack manufacturing
- perform module and pack processes for example: final assembly, end of line testing, and cell finishing
- monitor fire risk

The end-point assessor must ask questions which can occur both during and after the observation. The purpose of the questions is to assess the apprentice's level of competence against the grading descriptors. The time for questioning is included in the overall assessment time. The end-point assessor must ask at least 4 questions. To remain as unobtrusive as possible, the end-point assessor should ask questions during natural stops between tasks and after completion of work rather than disrupting the apprentice's flow. Follow-up questions are allowed where clarification is required.

The end-point assessor must ask questions about KSBs that were not observed to gather assessment evidence. These questions are in addition to the above set number of questions for the observation with questions and should be kept to a minimum.

The end-point assessor must make the grading decision and assess the observation and responses to questions holistically when deciding the grade.

The observation with questions must take place in the apprentice's normal place of work for example, their employer's premises or a customer's premises. Equipment and resources needed for the observation must be provided by the employer and be in good and safe working condition.

Questioning that occurs after the observation should take place in a suitable environment, for example a quiet room, free from distractions and influence.

Observation with Questions - Grading Descriptors

Theme KSBs	Pass	Distinction
<p>(Core) Work organisation K29 S1 S2</p>	<p>P1 Obtains and reads instructions or information to understand the task's requirements. (S1)</p> <p>P2 Plans the task and identifies and organises resources required to complete it using planning, prioritising, and time management techniques with consideration for safety, security, environmental impact, cost, and quality. (K29, S2)</p>	<p>D1 Justifies the balance of safety, security, environmental factors, cost, and quality in planning decisions. (K29, S2)</p>
<p>(Core) Maintain the work area: health, safety, and environment K4 S3 S4 S5 S6 B1</p>	<p>P3 Identifies hazards and risks in the workplace in line with company procedures.</p> <p>P4 Prioritises and applies health, safety, and environmental procedures in compliance with regulations, standards and codes of practice mitigating against risks including lock out, tag out (LOTO), manual handling, personal protective equipment (PPE), risk assessment and safe systems of work. (K4, S3, S4, B1)</p> <p>P5 Reinstates work area including housekeeping and replacing tools and</p>	<p>D2 Justifies complying with and prioritising health, safety, and environmental procedures in their work. (K4, S3, S4, B1)</p>

Theme KSBs	Pass The apprentice must demonstrate all of the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all of the pass and distinction descriptors for the Core and their option
	<p>equipment in line with company procedures. (S5)</p> <p>P6 Segregates resources for reuse, recycling, and waste handling in line with company procedures. (S6)</p>	
<p>(Core) Quality control K14 S8 B3</p>	<p>P7 Takes responsibility for the quality of their own work by following their company's operational procedures and on-going quality assurance (visual, tolerances, and non-conformances) requirements. (K14, S8, B3)</p>	<p>D3 Justifies their application of operational procedures and on-going quality assurance in battery manufacturing. (K14, S8, B3)</p>
<p>(Core) Transfer to next stage S9</p>	<p>P8 Transfers product (intermediate or final) to next stage in line with company procedures or instructions. (S9)</p>	<p>None</p>
<p>(Core) Verbal communication K26 S17</p>	<p>P9 Uses verbal communication techniques with others suitable for the context. (K26, S17)</p>	<p>None</p>
<p>(Core) Complete documentation K16 S11</p>	<p>P10 Records or enters data for work tasks - paper based or electronic - in line with company procedures for documentation control and auditable records. (K16, S11)</p>	<p>None</p>
<p>(Electrode technician) Prepare for electrode processing S22 S23</p>	<p>P11 Receives and checks electrode manufacturing materials required for the process in line with company procedures. (S22)</p> <p>P12 Follows specialist PPE procedures for over suits,</p>	<p>None</p>

Theme KSBs	Pass The apprentice must demonstrate all of the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all of the pass and distinction descriptors for the Core and their option
	overshoes, boots, gloves, masks, eyewear, and self-contained breathing apparatus required for the process in line with company procedures. (S23)	
(Electrode technician) Perform electrode processes K40 S24 S25	P13 Operates Human Machine Interface (HMI) to meet process requirements in line with company procedures. (S24) P14 Runs, monitors and adjusts HMI settings within permissions for electrode processes in line with company procedures. (K40, S25)	D4 Justifies their application of the processes in line with procedures with reference to impact down-line. (K40, S24, S25)
(Cell assembly technician) Prepare for cell assembly processes S26 S28	P15 Follows specialist PPE procedures for over suits, overshoes, boots, gloves, masks, and eyewear required for the process in line with company procedures. (S26) P16 Receives and checks cell assembly manufacturing materials required for the process in line with company procedures. (S28)	None
(Cell assembly technician) Perform cell assembly processes K44 S27 S29 S30	P17 Applies electrolyte safety precautions required for the process in line with company procedures. (S27) P18 Operates HMI to meet process requirements in line	D5 Justifies their application of the processes in line with procedures with reference to impact down-line. (K44, S27, S29, S30)

Theme KSBs	Pass The apprentice must demonstrate all of the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all of the pass and distinction descriptors for the Core and their option
	with company procedures. (S29) P19 Runs, monitors and adjusts HMI settings within permissions for cell assembly processes in line with company procedures. (K44, S30)	
(Formation, ageing and testing technician) Prepare for formation, ageing and testing processes S31	P20 Receives and checks formation, ageing and testing manufacturing materials required for the process in line with company procedures. (S31)	None
(Formation, ageing and testing technician) Perform formation, ageing and testing processes K51 K53 S32 S33 S34 S35 S36	P21 Loads and handles cells required for the process in line with company procedures. (S32) P22 Operates HMI to meet process requirements in line with company procedures. (S33) P23 Identifies trends in data using data analysis techniques (data recording, analysis, and translation). (K53, S34) P24 Runs, monitors and adjusts settings HMI within permissions for formation, ageing, and testing processes in line with company procedures. (K51, S35)	D6 Justifies their application of the processes in line with procedures with reference to impact down-line. (K51, S32, S33, S35, S36)

Theme KSBs	Pass The apprentice must demonstrate all of the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all of the pass and distinction descriptors for the Core and their option
	P25 Monitors fire risks in line with company procedures. (S36)	
(Module and pack technician) Prepare for module and pack processes K55 S37 S38	P26 Applies anti-static procedures required for the task in line with company procedures. (S37) P27 Obtains and checks module and pack manufacturing materials required for the task in line with stock control requirements. (K55, S38)	None
(Module and pack technician) Perform module and pack processes K56 K57 K59 S39 S40 S41 S42 S43 S44	P28 Interprets engineering and design documentation required for the task. (K56, S39) P29 Prepares materials required for the task requirements in line with company procedures. (S40) P30 Checks and uses hand tools and equipment required for the task to conduct module and pack processes in line with company procedures and live pack handling requirements. (K57, K59, S41, S42) P31 Completes end-of-process check required for the task in line with company procedures. (S43)	D7 Justifies their application of the processes in line with procedures with reference to impact down-line. (K57, S40, S41, S42, S43, S44)

Theme KSBs	Pass The apprentice must demonstrate all of the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all of the pass and distinction descriptors for the Core and their option
	P32 Monitors fire risks in line with company procedures. (S44)	

Fail – An apprentice will fail where they do not demonstrate all the pass descriptors.

Observation with Questions - Knowledge, Skills and Behaviours

Ref	KSB Statement
Knowledge	
K4	Core. Health and safety practice - Lock out, tag out (LOTO). Manual handling. Personal Protective Equipment (PPE) requirements. Risk assessment and safe systems of work.
K14	Core. Operational procedures and on-going quality assurance requirements.
K16	Core. Documentation requirements: documentation control, auditable records.
K26	Core. Verbal communication techniques.
K29	Core. Planning, prioritising, and time management techniques.
K40	Electrode technician. Option 1. Electrode process procedures.
K44	Cell assembly technician. Option 2. Cell assembly processes procedures.
K51	Formation, ageing and testing technician. Option 3. Formation, ageing and testing company processes procedures.
K53	Formation, ageing and testing technician. Option 3. Data techniques: data recording, analysis, and translation.
K55	Module and pack technician. Option 4. Stock control requirements.
K56	Module and pack technician. Option 4. Engineering and design documentation application considerations.
K57	Module and pack technician. Option 4. Module and pack assembly processes procedures.
K59	Module and pack technician. Option 4. Live pack handling requirements.
Skills	
S1	Core. Obtain and read instructions or information to understand task
S2	Core.

	Plan task. Identify and organise resources with consideration for safety, security, environmental impact, cost, and quality.
S3	Core. Identify hazards and risks in the workplace.
S4	Core. Apply health, safety and environmental procedures in compliance with regulations, standards and codes of practice for example lock out tag out (LOTO).
S5	Core. Reinstate work area: housekeeping, replacing tools and equipment.
S6	Core. Segregate resources for reuse, recycling, and handling.
S8	Core. Follow operational procedures including on-going quality checks: visual, tolerances, and non-conformances.
S9	Core. Transfer product, intermediate or final, to next stage.
S11	Core. Record or enter information - paper based or electronic. For example, process and production records, traceability records, and quality assurance records.
S17	Core. Communicate with others verbally for example, colleagues and stakeholders.
S22	Electrode technician. Option 1. Receive and check electrode manufacturing materials.
S23	Electrode technician. Option 1. Follow specialist PPE procedures for over suits, overshoes, boots, gloves, masks, eyewear, and self-contained breathing apparatus.
S24	Electrode technician. Option 1. Operate Human Machine Interface (HMI).
S25	Electrode technician. Option 1. Run, monitor and adjust HMI settings within permissions.
S26	Cell assembly technician. Option 2. Follow specialist PPE procedures for over suits, overshoes, boots, gloves, masks, and eyewear.
S27	Cell assembly technician. Option 2. Apply electrolyte safety precautions.
S28	Cell assembly technician. Option 2. Receive and check cell assembly manufacturing materials.
S29	Cell assembly technician. Option 2. Operate Human Machine Interface (HMI).
S30	Cell assembly technician. Option 2. Run, monitor and adjust HMI settings within permissions.
S31	Formation, ageing and testing technician. Option 3. Receive and check formation, ageing and testing manufacturing materials.
S32	Formation, ageing and testing technician. Option 3. Load and handle cells.

S33	Formation, ageing and testing technician. Option 3. Operate Human Machine Interface (HMI): set up, shut down, and cleaning modes.
S34	Formation, ageing and testing technician. Option 3. Identify trends in data.
S35	Formation, ageing and testing technician. Option 3. Run, monitor and adjust HMI settings within permissions.
S36	Formation, ageing and testing technician. Option 3. Monitor fire risks.
S37	Module and pack technician. Option 4. Apply anti-static procedures for example, earth straps, rubber matting.
S38	Module and pack technician. Option 4. Obtain and check module and pack manufacturing materials.
S39	Module and pack technician. Option 4. Interpret engineering and design documentation.
S40	Module and pack technician. Option 4. Prepare materials.
S41	Module and pack technician. Option 4. Check hand tools and equipment.
S42	Module and pack technician. Option 4. Uses hand tools and equipment. For example, crimping machines, soldering irons, and heat guns.
S43	Module and pack technician. Option 4. Complete end-of-process check.
S44	Module and pack technician. Option 4. Monitor fire risks.
Behaviours	
B1	Core. Prioritise health, safety and environment.
B3	Core. Take responsibility for the quality of own work.

Assessment Method 2: Interview Underpinned by a Portfolio of Evidence

An end-point assessor will conduct and assess the interview. In the interview they will ask the apprentice questions which give the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method. The apprentice can refer to and illustrate their answers with evidence from their portfolio of evidence. The interview must be structured to give the apprentice the opportunity to demonstrate the KSBs mapped to this assessment method to the highest available grade.

The purpose of the end-point assessor's questions is to assess the apprentice's competence against the following themes:

Core

- battery technician's role and responsibilities
- sustainability

- preventative maintenance
- problem solving
- continuous improvement
- digital technology
- written communication
- team working
- continued professional development

Electrode technician

- electrode processing potential issues
- formulation of materials

Cell assembly technician

- cell assembly potential issues
- formulation of materials
- cell assembly finishing requirements

Formation, ageing and testing technician

- formation, ageing and testing potential issues
- formulation of materials

Module and pack technician

- module and pack potential issues
- module and pack finishing

SIAS will give an apprentice 2 weeks' notice of the interview and the end-point assessor will have at least 2 weeks to review the supporting documentation.

Portfolio of evidence requirements

The apprentice must compile a portfolio of evidence during the on-programme period of the apprenticeship. It should only contain evidence related to the KSBs that will be assessed by this assessment method. It will typically contain 10 discrete pieces of evidence. Evidence must be mapped against the KSBs. Evidence may be used to demonstrate more than one KSB; a qualitative as opposed to quantitative approach is suggested.

Evidence sources may include:

- workplace documentation and records
- workplace policies and procedures
- witness statements
- annotated photographs
- video clips with a maximum total duration of 10 minutes; the apprentice must be in view and identifiable

This is not a definitive list; other evidence sources can be included.

The portfolio of evidence should not include reflective accounts or any methods of self-assessment. Any employer contributions should focus on direct observation of performance for example, witness statements rather than opinions. The evidence provided should be valid and attributable to the apprentice; the portfolio of evidence should contain a statement from the employer and apprentice confirming this.

SIAS will not assess the portfolio of evidence directly as it underpins the interview. The end-point assessor will review the portfolio of evidence to prepare questions for the interview. They are not required to provide feedback after this review.

The apprentice will have access to their portfolio of evidence during the interview and can refer to and illustrate their answers with evidence from their portfolio of evidence.

The interview will last for 60 minutes but the end-point assessor can increase the time of the interview by up to 10% to allow the apprentice to respond to a question if necessary. The end-point assessor will ask at least 8 questions and follow-up questions are allowed where clarification is required.

The end-point assessor will make the grading decision and will keep accurate records of the assessment. They will record:

- the apprentice’s answers to questions
- the KSBs demonstrated in answers to questions
- the grade achieved

The interview will take place in a suitable venue selected by SIAS for example, the employer’s premises. The interview should take place in a quiet room, free from distractions and influence.

Interview Underpinned by a Portfolio of Evidence - Grading Descriptors

Theme KSBs	Pass The apprentice must demonstrate all the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all the pass and distinction descriptors for the Core and their option
(Core) Battery technician's role and responsibilities K2 K5 S19 B6	P1 Outlines their role as a cell or battery manufacturing technician including their limits of responsibility, describing how they escalate issues, and how they respond and adapt to work demands in line with organisational requirements. (K2, S19, B6)	None

Theme KSBs	Pass The apprentice must demonstrate all the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all the pass and distinction descriptors for the Core and their option
	P2 Outlines their company's procedures for incident and near miss reporting and emergencies. (K5)	
(Core) Sustainability K8 S7 B2	P3 Describes how they consider and apply the principles of sustainability including energy efficiency, reuse of resources, and recycling procedures in their work. (K8, S7, B2)	D1 Supports the development of environmental and sustainability practice in the workplace for example, through promoting good practice to others, or identifying improvement to practice. (K8, S7, B2)
(Core) Preventative maintenance K18 S10	P4 Describes how they apply preventative maintenance procedures in line with company requirements to support wider maintenance practices. (K18, S10)	D2 Justifies the benefits of applying preventative maintenance practices. (K18, S10)
(Core) Problem solving K22 S12 S13	P5 Describes how they apply problem solving techniques to identify root cause and how they have made suggestions to solve problems in their work, including the interpretation and use of data to validate suggestions. (K22, S12, S13)	D3 Justifies the suggestion in terms of potential impact. (S13)
(Core) Continuous improvement K15 K23 S14 S15	P6 Describes how they have applied continuous improvement techniques to devise a suggestion for improvement to a battery manufacturing related issue or process. (K23, S14, S15) P7 Outlines how operational procedures are developed and reviewed in their	D4 Justifies the improvement suggestion in terms of potential impact. (S15)

Theme KSBs	Pass The apprentice must demonstrate all the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all the pass and distinction descriptors for the Core and their option
	workplace to support continuous improvement. (K15)	
(Core) Digital technologies K24 S20	P8 Describes how they use digital technologies in work tasks in compliance with general data protection regulation (GDPR) and organisational cyber security regulations and policies. (K24, S20)	None
(Core) Written communication K27 S18	P9 Describes how they apply written communication and technical report writing techniques to produce communications in their work suitable for context. (K27, S18)	None
(Core) Team working K28 S16 B5	P10 Describes how they apply team working principles to meet work goals in line with their company's policy on equality, diversity, and inclusion. (K28, S16, B5)	D5 Explains how their team focus and commitment to inclusivity extends to wider teams or stakeholders. (K28, S16, B5)
(Core) Continued professional development S21 B4 B7	P11 Describes the planned and unplanned continued professional development (CPD) activities they have carried out and recorded to meet personal development needs, being responsive to constructive feedback and showing a commitment to future CPD. P12 Evaluates what the impact of their CPD has been and how it has	None

Theme KSBs	Pass The apprentice must demonstrate all the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all the pass and distinction descriptors for the Core and their option
	benefited the business. (S21, B4, B7)	
(Electrode technician) Electrode processing potential issues K42	P13 Explains potential issues in electrode processing and how defect identification operates in their company. (K42)	None
(Electrode technician) Formulation of materials K38	P14 Outlines what formations of materials are and explains the importance of following them in battery manufacturing, with reference to manual and automated methods. (K38)	None
(Cell assembly technician) Cell assembly potential issues K46	P15 Explains potential issues in cell assembly and how defect identification operates in their company. (K46)	None
(Cell assembly technician) Formulation of materials K43	P16 Outlines what formations of materials are and explains the importance of following them in battery manufacturing, with reference to manual and automated methods. (K43)	None
(Cell assembly technician) Cell finishing requirements K48	P17 Explains how cell finishing monitoring and recording operates in their company. (K48)	None
(Formation, ageing and testing technician) Formation, ageing and testing potential issues K54	P18 Explains potential issues in formation, ageing and testing and how defect identification operates in their company. (K54)	None
(Formation, ageing and testing technician) Formulation of materials K49	P19 Outlines what formations of materials are and explains the importance of following them in battery manufacturing, with	None

Theme KSBs	Pass The apprentice must demonstrate all the pass descriptors for the Core and their option	Distinction The apprentice must demonstrate all the pass and distinction descriptors for the Core and their option
	reference to manual and automated methods. (K49)	
(Module and pack technician) Module and pack potential issues K61	P20 Explains potential issues in module and pack production and how defect identification operates in their company. (K61)	None
(Module and pack technician) Module and pack finishing K62	P21 Explains how module and pack finishing monitoring and recording operates in their company. (K62)	None

Fail – An apprentice will fail where they do not demonstrate all the pass descriptors.

Interview Underpinned by a Portfolio of Evidence - Knowledge, Skills and Behaviours

Ref	KSB Statement
Knowledge	
K2	Core. Battery manufacturing technician’s role. Limits of responsibility. Escalation procedures.
K5	Core. Incident and near miss reporting. Emergency procedures.
K8	Core. Sustainability practice: energy efficiency, reuse of resources, recycling procedures.
K15	Core. Development and review of operational procedures.
K18	Core. Maintenance practices. Preventative maintenance requirements.
K22	Core. Problem solving and fault-finding techniques: root cause analysis.
K23	Core. Continuous improvement (CI) systems and techniques.
K24	Core. Digital technologies. General data protection regulation (GDPR). Cyber security.
K27	Core. Written communication techniques. Technical report writing techniques.
K28	Core. Principles of team working. Equality, diversity, and inclusion.
K38	Electrode technician.

	Option 1. Formulations of materials - what they are and importance of following them. Manual and automated mixing methods.
K42	Electrode technician. Option 1. Potential issues in electrode processing and defect identification.
K43	Cell assembly technician. Option 2. Formulations of materials - what they are and importance of following them. Manual and automated mixing methods.
K46	Cell assembly technician. Option 2. Potential issues in cell assembly and defect identification.
K48	Cell assembly technician. Option 2. Cell finishing monitoring and recording requirements.
K49	Formation, ageing and testing technician. Option 3. Formulations of materials - what they are and importance of following them. Manual and automated mixing methods.
K54	Formation, ageing and testing technician. Option 3. Potential issues in formation, ageing and testing and defect identification methods.
K61	Module and pack technician. Option 4. Potential issues in module and pack and defect identification.
K62	Module and pack technician. Option 4. Module and pack finishing - monitoring and recording requirements (traceability).
Skills	
S7	Core. Apply sustainability principles for example, in choice of materials, minimising waste.
S10	Core. Follow preventative maintenance practices. For example, cleaning electrodes, ensuring tooling is within calibration date, checking guarding, lubrication of tooling, safety checks, and inspection for wear and tear.
S12	Core. Apply problem solving techniques. Make suggestions to resolve problems.
S13	Core. Interpret data for example, process data, quality control and test procedure data. Use data to validate suggestions.
S14	Core. Apply continuous improvement techniques for example, lean, 6 Sigma, KAIZEN.
S15	Core. Devise suggestions for improvement. For example, improving the energy consumption or waste profile of processes and procedures to improve the sustainability or carbon footprint of a product, process or task.
S16	Core. Apply team working principles.
S18	Core. Communicate in writing in the workplace for example, handover notes or emails, non-conformances, design change requests.

S19	Core. Escalate issues outside limits of responsibility.
S20	Core. Use digital technologies. Comply with GDPR and cyber security regulations and policies.
S21	Core. Plan how to meet personal development needs. Carry out and record planned and unplanned continued professional development (CPD) activities. Evaluate CPD against plans made.
Behaviours	
B2	Core. Consider sustainability when using resources and carrying out processes.
B4	Core. Responsive to constructive feedback.
B5	Core. Team-focus to meet work goals including a commitment to equality, diversity and inclusion.
B6	Core. Respond and adapt to work demands.
B7	Core. Committed to continued professional development.

Assessment Method 3: Multiple-Choice Test

In the multiple-choice test, the apprentice answers questions in a controlled and invigilated environment. It gives the apprentice the opportunity to demonstrate the knowledge mapped to this assessment method. The multiple-choice test must be structured to give the apprentice the opportunity to demonstrate the knowledge mapped to this assessment method to the highest available grade.

The test will be computer based and will consist of 40 multiple-choice questions, with each question having four options, including one correct answer. The apprentice will be given at least 2 weeks' notice of the date and time of the test and will have 60 minutes to complete the test. The test is closed book which means that the apprentice cannot refer to reference books or materials whilst taking the test.

The apprentice must take the test in a suitably controlled and invigilated environment that is a quiet room, free from distractions and influence. SIAS will check that the venue is suitable. The test can take place remotely if the appropriate technology and systems are in place to prevent malpractice.

Multiple-Choice Test - Grading Boundaries

Grade	Minimum Marks Required	Maximum Marks Required
Fail	0	27
Pass	28	40

Multiple-Choice Test - Knowledge, Skills and Behaviours

Ref	KSB Statement
Knowledge	
K1	Core. Battery manufacturing industry awareness: manufacturing environments, types of employers, types of customers. Business: Industrial strategy, ethical sourcing, and battery supply chain practice.
K3	Core. Health and safety regulations, standards, and guidance. ATEX - safety requirements for workplaces and equipment used in explosive atmospheres. The Control of Major Accident Hazards Regulations (COMAH). Control of Substances Hazardous to Health (COSHH). Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). Electrical safety and compliance. Fire safety. Health and Safety at Work Act – responsibilities. Legionella. Lifting Operations and Lifting Equipment Regulations (LOLER). Lone working. Management of health and safety at work. Noise regulation. Permits to work. Provision and Use of Work Equipment Regulations (PUWER). REACH — Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals. Safety signage and purpose. spill response handling Slips trips and falls. The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). Working at Height. Working in confined spaces.
K6	Core. Battery health and safety. Battery manufacturing safety guidance. Battery failures and faults – causes and consequences. Battery manufacturing safety hazards – risks they pose and management. Responding to battery fires, chemical spillages, gas leakages, and incidents.
K7	Core. Environmental and sustainability regulations, standards, and guidance: Environmental Management Systems standard, Environmental Protection Act, Climate Change Act, Energy Act, Control of Pollution Act. Principles of control and management of emissions and waste. Environmental signage and notices.
K9	Core. The environmental benefits of batteries in the move towards net zero emissions. Sustainability and carbon footprint of different types of batteries and materials used in production: how that can be mitigated for by selection and whole of lifecycle considerations.
K10	Core. Production requirements: product specification, processing specification, rate of production. Material safety data sheet, product labelling and product codes; the importance of identifying non-conforming materials and products. Overall Equipment Effectiveness (OEE). Stock control principles.
K11	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Process control systems and their constituent components.
K12	Core.

	Need and requirements for clean and dry rooms in battery manufacturing – protocols for entering, working in, exiting. Safe working within a clean and dry room: risks.
K13	Core. Quality assurance vs quality control; key differences. Quality standards. Consequences of not achieving quality standards. Line side and lab quality control. Purpose of audits.
K17	Core. Representative sampling. Common methods of analysis. Principles of quality procedures in the laboratory.
K19	Core. Numerical approximations and unit conversion tables. Areas, volumes, and flow rates calculations. Statistical data. Basic rules of algebra to solve problems.
K20	Core. British standards for engineering representations, drawings, and graphical information.
K21	Core. Application of digital systems to support manufacture: CAD (computer-aided design), CAM (computer-aided manufacturing), CMM (coordinate measuring machine), 3D printing, Human Machine Interface (HMI).
K25	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Industry 4.0.
K30	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Battery manufacturing terminology: cell, battery, anodes, and cathodes.
K31	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Different types of battery and their technologies: pouch, cylindrical, prismatic, solid state, and monobloc, new technologies. Primary and secondary batteries. Developments in battery manufacturing.
K32	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Cell materials: solvents, and electrolyte.
K33	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Batteries and their applications.
K34	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Basic chemistry awareness: the Periodic Table, ionic and covalent bonding, the different current types of battery chemistry and their uses.
K35	Core. Battery standards and market certification.
K36	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Battery structure: cells, packs, anodes, cathodes, battery management systems.
K37	Core.

	Requirements for transportation of lithium cells and batteries.
K39	Electrode technician. Option 1. Materials used in electrode slurries: binder, solvents and active materials. Types of mixing equipment; pros and cons.
K41	Electrode technician. Option 1. The purpose of electrode processes: mixing (semi continuous, continuous and batch), coating (continuous and intermittent or skip coating, extrusion methods), calendaring (hot and cold), electrode slitting and cutting.
K45	Cell assembly technician. Option 2. Cell assembly purpose of processes: preparation (drying), winding (manual and automated approaches), can insertion, electrode slitting (cylindrical cells) and cutting (pouch cells), stacking, and assembly (deep draw and heat sealing).
K47	Cell assembly technician. Option 2. Different types of cells: pouch, cylindrical, prismatic, solid state, monobloc, and new technologies.
K50	Formation, ageing and testing technician. Option 3. Electrical components in physics: voltage, current, resistance, power, charge and discharge – definition and calculation. The relationship between resistance, heat and cell chemistry. Kirchhoff's Laws, Ohm's Law. Flow of electrons.
K52	Formation, ageing and testing technician. Option 3. Formation, ageing and testing purpose of processes: formation (current methods), ageing (current methods) and testing (open-circuit voltage, end of line, grading).
K58	Module and pack technician. Option 4. Implications of hazardous voltage.
K60	Module and pack technician. Option 4. Module and pack purpose of processes: preparation, bonding, welding manual and automated methods (nickel tabs, bus bars), soldering, crimping, encapsulation and final assembly.

Final Grade

Performance in the End-Point Assessment determines the overall grade of:

- fail
- pass
- merit
- distinction

An end-point assessor must individually grade the observation with questions and interview underpinned by a portfolio of evidence in line with this End-Point Assessment plan. SIAS will combine the individual assessment method grades to determine the overall End-Point Assessment grade.

If the apprentice fails one assessment method or more, they will be awarded an overall fail. To achieve an overall pass, the apprentice must achieve at least a pass in all the assessment

methods. To achieve an overall merit, the apprentice must achieve a distinction in the observation with questions, a pass in the interview underpinned by portfolio of evidence, and a pass in the multiple-choice test. To achieve an overall distinction, the apprentice must achieve a distinction in the observation with questions and the interview underpinned by a portfolio of evidence, and a pass in the multiple-choice test.

Grades from individual assessment methods must be combined in the following way to determine the grade of the EPA overall.

Observation with Questions	Interview Underpinned by a Portfolio of Evidence	Multiple-Choice Test	Overall Grading
Fail	Any Grade	Any Grade	Fail
Any Grade	Fail	Any Grade	Fail
Any Grade	Any Grade	Fail	Fail
Pass	Pass	Pass	Pass
Pass	Distinction	Pass	Pass
Distinction	Pass	Pass	Merit
Distinction	Distinction	Pass	Distinction

Moderation

Assessment organisations will undertake moderation of end-point assessor decisions through observations and examination of documentation on a risk sampling basis. Results cannot be confirmed until moderation has been completed.

Re-takes and re-sits

If the apprentice fails one assessment method or more, they can take a re-sit or a re-take at their 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, whereas a re-take does. The apprentice should have a supportive action plan to prepare for a re-sit or a re-take.

The employer and SIAS should agree the timescale for a re-sit or re-take. A re-sit is typically taken within 2 months of the End-Point Assessment outcome notification. The timescale for a re-take is dependent on how much re-training is required and is typically taken within 4 months of the End-Point Assessment outcome notification.

Failed assessment methods must be re-sat or re-taken within a 6-month period from the End-Point Assessment outcome notification, otherwise the entire End-Point Assessment will need to be re-sat or re-taken in full.

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

The apprentice will get a maximum End-Point Assessment grade of pass if they need to re-sit or re-take one or more assessment methods, unless SIAS determines there are exceptional circumstances.

Certification

The outcomes from the End-Point Assessment will be reviewed and a grade conferred by SIAS in accordance with SIAS QA procedures, which are available from SIAS. SIAS will notify the employer of the outcome of each of the assessments.

SIAS will apply for the apprentice’s certificate, which will be sent by ESFA. The certificate confirms that the apprentice has passed the End-Point Assessment, has demonstrated full competency across the standard and is job-ready.

Assessment Specification

The assessment specification can be found in the published assessment plan for the standard. Details of which elements of the apprenticeship standard will be tested by each test are given in the Mapping Knowledge, Skills, and Behaviours section of this guide.

Mapping of Knowledge, Skills, and Behaviours

Key:	
Observation with Questions	O
Interview Underpinned by a Portfolio of Evidence	I
Multiple-Choice Test	MCT

Ref	KSB to be assessed	Assessment Method
Knowledge		
K1	Core. Battery manufacturing industry awareness: manufacturing environments, types of employers, types of customers. Business: Industrial strategy, ethical sourcing, and battery supply chain practice.	MCT
K2	Core. Battery manufacturing technician’s role. Limits of responsibility. Escalation procedures.	I
K3	Core. Health and safety regulations, standards, and guidance. ATEX - safety requirements for workplaces and equipment used in explosive atmospheres. The Control of Major Accident Hazards Regulations (COMAH). Control of Substances Hazardous to Health (COSHH). Dangerous Substances and Explosive Atmospheres Regulations (DSEAR). Electrical safety and compliance. Fire safety. Health and Safety at Work Act – responsibilities. Legionella. Lifting Operations and Lifting Equipment Regulations (LOLER). Lone working. Management of health and safety at work. Noise regulation. Permits to work. Provision and Use of Work Equipment Regulations (PUWER).	MCT

Ref	KSB to be assessed	Assessment Method
	REACH — Regulation for Registration, Evaluation, Authorisation and Restriction of Chemicals. Safety signage and purpose. spill response handling Slips trips and falls. The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR). Working at Height. Working in confined spaces.	
K4	Core. Health and safety practice - Lock out, tag out (LOTO). Manual handling. Personal Protective Equipment (PPE) requirements. Risk assessment and safe systems of work.	O
K5	Core. Incident and near miss reporting. Emergency procedures.	I
K6	Core. Battery health and safety. Battery manufacturing safety guidance. Battery failures and faults – causes and consequences. Battery manufacturing safety hazards – risks they pose and management. Responding to battery fires, chemical spillages, gas leakages, and incidents.	MCT
K7	Core. Environmental and sustainability regulations, standards, and guidance: Environmental Management Systems standard, Environmental Protection Act, Climate Change Act, Energy Act, Control of Pollution Act. Principles of control and management of emissions and waste. Environmental signage and notices.	MCT
K8	Core. Sustainability practice: energy efficiency, reuse of resources, recycling procedures.	I
K9	Core. The environmental benefits of batteries in the move towards net zero emissions. Sustainability and carbon footprint of different types of batteries and materials used in production: how that can be mitigated for by selection and whole of lifecycle considerations.	MCT
K10	Core. Production requirements: product specification, processing specification, rate of production. Material safety data sheet, product labelling and product codes; the importance of identifying non-conforming materials and products. Overall Equipment Effectiveness (OEE). Stock control principles.	MCT
K11	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Process control systems and their constituent components.	MCT
K12	Core. Need and requirements for clean and dry rooms in battery manufacturing – protocols for entering, working in, exiting. Safe working within a clean and dry room: risks.	MCT
K13	Core.	MCT

Ref	KSB to be assessed	Assessment Method
	Quality assurance vs quality control; key differences. Quality standards. Consequences of not achieving quality standards. Line side and lab quality control. Purpose of audits.	
K14	Core. Operational procedures and on-going quality assurance requirements.	O
K15	Core. Development and review of operational procedures.	I
K16	Core. Documentation requirements: documentation control, auditable records.	O
K17	Core. Representative sampling. Common methods of analysis. Principles of quality procedures in the laboratory.	MCT
K18	Core. Maintenance practices. Preventative maintenance requirements.	I
K19	Core. Numerical approximations and unit conversion tables. Areas, volumes, and flow rates calculations. Statistical data. Basic rules of algebra to solve problems.	MCT
K20	Core. British standards for engineering representations, drawings, and graphical information.	MCT
K21	Core. Application of digital systems to support manufacture: CAD (computer-aided design), CAM (computer-aided manufacturing), CMM (coordinate measuring machine), 3D printing, Human Machine Interface (HMI).	MCT
K22	Core. Problem solving and fault-finding techniques: root cause analysis.	I
K23	Core. Continuous improvement (CI) systems and techniques.	I
K24	Core. Digital technologies. General data protection regulation (GDPR). Cyber security.	I
K25	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Industry 4.0.	MCT
K26	Core. Verbal communication techniques.	O
K27	Core. Written communication techniques. Technical report writing techniques.	I
K28	Core. Principles of team working. Equality, diversity, and inclusion.	I

Ref	KSB to be assessed	Assessment Method
K29	Core. Planning, prioritising, and time management techniques.	O
K30	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Battery manufacturing terminology: cell, battery, anodes, and cathodes.	MCT
K31	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Different types of battery and their technologies: pouch, cylindrical, prismatic, solid state, and monobloc, new technologies. Primary and secondary batteries. Developments in battery manufacturing.	MCT
K32	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Cell materials: solvents, and electrolyte.	MCT
K33	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Batteries and their applications.	MCT
K34	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Basic chemistry awareness: the Periodic Table, ionic and covalent bonding, the different current types of battery chemistry and their uses.	MCT
K35	Core. Battery standards and market certification.	MCT
K36	Electrode technician, Cell assembly technician, Formation, ageing and testing technician, Module and pack technician. Battery structure: cells, packs, anodes, cathodes, battery management systems.	MCT
K37	Core. Requirements for transportation of lithium cells and batteries.	MCT
K38	Electrode technician. Option 1. Formulations of materials - what they are and importance of following them. Manual and automated mixing methods.	I
K39	Electrode technician. Option 1. Materials used in electrode slurries: binder, solvents and active materials. Types of mixing equipment; pros and cons.	MCT
K40	Electrode technician. Option 1. Electrode process procedures.	O
K41	Electrode technician. Option 1. The purpose of electrode processes: mixing (semi continuous, continuous and batch), coating (continuous and intermittent or skip coating, extrusion methods), calendaring (hot and cold), electrode slitting and cutting.	MCT
K42	Electrode technician.	I

Ref	KSB to be assessed	Assessment Method
	Option 1. Potential issues in electrode processing and defect identification.	
K43	Cell assembly technician. Option 2. Formulations of materials - what they are and importance of following them. Manual and automated mixing methods.	I
K44	Cell assembly technician. Option 2. Cell assembly processes procedures.	O
K45	Cell assembly technician. Option 2. Cell assembly purpose of processes: preparation (drying), winding (manual and automated approaches), can insertion, electrode slitting (cylindrical cells) and cutting (pouch cells), stacking, and assembly (deep draw and heat sealing).	MCT
K46	Cell assembly technician. Option 2. Potential issues in cell assembly and defect identification.	I
K47	Cell assembly technician. Option 2. Different types of cells: pouch, cylindrical, prismatic, solid state, monobloc, and new technologies.	MCT
K48	Cell assembly technician. Option 2. Cell finishing monitoring and recording requirements.	I
K49	Formation, ageing and testing technician. Option 3. Formulations of materials - what they are and importance of following them. Manual and automated mixing methods.	I
K50	Formation, ageing and testing technician. Option 3. Electrical components in physics: voltage, current, resistance, power, charge and discharge – definition and calculation. The relationship between resistance, heat and cell chemistry. Kirchhoff's Laws, Ohm's Law. Flow of electrons.	MCT
K51	Formation, ageing and testing technician. Option 3. Formation, ageing and testing company processes procedures.	O
K52	Formation, ageing and testing technician. Option 3. Formation, ageing and testing purpose of processes: formation (current methods), ageing (current methods) and testing (open-circuit voltage, end of line, grading).	MCT
K53	Formation, ageing and testing technician. Option 3. Data techniques: data recording, analysis, and translation.	O
K54	Formation, ageing and testing technician. Option 3. Potential issues in formation, ageing and testing and defect identification methods.	I
K55	Module and pack technician. Option 4. Stock control requirements.	O
K56	Module and pack technician. Option 4. Engineering and design documentation application considerations.	O

Ref	KSB to be assessed	Assessment Method
K57	Module and pack technician. Option 4. Module and pack assembly processes procedures.	O
K58	Module and pack technician. Option 4. Implications of hazardous voltage.	MCT
K59	Module and pack technician. Option 4. Live pack handling requirements.	O
K60	Module and pack technician. Option 4. Module and pack purpose of processes: preparation, bonding, welding manual and automated methods (nickel tabs, bus bars), soldering, crimping, encapsulation and final assembly.	MCT
K61	Module and pack technician. Option 4. Potential issues in module and pack and defect identification.	I
K62	Module and pack technician. Option 4. Module and pack finishing - monitoring and recording requirements (traceability).	I
Skills		
S1	Core. Obtain and read instructions or information to understand task.	O
S2	Core. Plan task. Identify and organise resources with consideration for safety, security, environmental impact, cost, and quality.	O
S3	Core. Identify hazards and risks in the workplace.	O
S4	Core. Apply health, safety and environmental procedures in compliance with regulations, standards and codes of practice for example lock out tag out (LOTO).	O
S5	Core. Reinstate work area: housekeeping, replacing tools and equipment.	O
S6	Core. Segregate resources for reuse, recycling, and handling.	O
S7	Core. Apply sustainability principles for example, in choice of materials, minimising waste.	I
S8	Core. Follow operational procedures including on-going quality checks: visual, tolerances, and non-conformances.	O
S9	Core. Transfer product, intermediate or final, to next stage.	O
S10	Core. Follow preventative maintenance practices. For example, cleaning electrodes, ensuring tooling is within calibration date, checking	I

Ref	KSB to be assessed	Assessment Method
	guarding, lubrication of tooling, safety checks, and inspection for wear and tear.	
S11	Core. Record or enter information - paper based or electronic. For example, process and production records, traceability records, and quality assurance records.	O
S12	Core. Apply problem solving techniques. Make suggestions to resolve problems.	I
S13	Core. Interpret data for example, process data, quality control and test procedure data. Use data to validate suggestions.	I
S14	Core. Apply continuous improvement techniques for example, lean, 6 Sigma, KAIZEN.	I
S15	Core. Devise suggestions for improvement. For example, improving the energy consumption or waste profile of processes and procedures to improve the sustainability or carbon footprint of a product, process or task.	I
S16	Core. Apply team working principles.	I
S17	Core. Communicate with others verbally for example, colleagues and stakeholders.	O
S18	Core. Communicate in writing in the workplace for example, handover notes or emails, non-conformances, design change requests.	I
S19	Core. Escalate issues outside limits of responsibility.	I
S20	Core. Use digital technologies. Comply with GDPR and cyber security regulations and policies.	I
S21	Core. Plan how to meet personal development needs. Carry out and record planned and unplanned continued professional development (CPD) activities. Evaluate CPD against plans made.	I
S22	Electrode technician. Option 1. Receive and check electrode manufacturing materials.	O
S23	Electrode technician. Option 1. Follow specialist PPE procedures for over suits, overshoes, boots, gloves, masks, eyewear, and self-contained breathing apparatus.	O
S24	Electrode technician.	O

Ref	KSB to be assessed	Assessment Method
	Option 1. Operate Human Machine Interface (HMI).	
S25	Electrode technician. Option 1. Run, monitor and adjust HMI settings within permissions.	0
S26	Cell assembly technician. Option 2. Follow specialist PPE procedures for over suits, overshoes, boots, gloves, masks, and eyewear.	0
S27	Cell assembly technician. Option 2. Apply electrolyte safety precautions.	0
S28	Cell assembly technician. Option 2. Receive and check cell assembly manufacturing materials.	0
S29	Cell assembly technician. Option 2. Operate Human Machine Interface (HMI).	0
S30	Cell assembly technician. Option 2. Run, monitor and adjust HMI settings within permissions.	0
S31	Formation, ageing and testing technician. Option 3. Receive and check formation, ageing and testing manufacturing materials.	0
S32	Formation, ageing and testing technician. Option 3. Load and handle cells.	0
S33	Formation, ageing and testing technician. Option 3. Operate Human Machine Interface (HMI): set up, shut down, and cleaning modes.	0
S34	Formation, ageing and testing technician. Option 3. Identify trends in data.	0
S35	Formation, ageing and testing technician. Option 3. Run, monitor and adjust HMI settings within permissions.	0
S36	Formation, ageing and testing technician. Option 3. Monitor fire risks.	0
S37	Module and pack technician. Option 4. Apply anti-static procedures for example, earth straps, rubber matting.	0
S38	Module and pack technician. Option 4. Obtain and check module and pack manufacturing materials.	0
S39	Module and pack technician. Option 4. Interpret engineering and design documentation.	0
S40	Module and pack technician. Option 4. Prepare materials.	0
S41	Module and pack technician. Option 4. Check hand tools and equipment.	0
S42	Module and pack technician. Option 4. Uses hand tools and equipment. For example, crimping machines, soldering irons, and heat guns.	0
S43	Module and pack technician.	0

Ref	KSB to be assessed	Assessment Method
	Option 4. Complete end-of-process check.	
S44	Module and pack technician. Option 4. Monitor fire risks.	O
Behaviours		
B1	Core. Prioritise health, safety and environment.	O
B2	Core. Consider sustainability when using resources and carrying out processes.	I
B3	Core. Take responsibility for the quality of own work.	O
B4	Core. Responsive to constructive feedback.	I
B5	Core. Team-focus to meet work goals including a commitment to equality, diversity and inclusion.	I
B6	Core. Respond and adapt to work demands.	I
B7	Core. Committed to continued professional development.	I

Further Information

For information about SIAS policies, quality assurance, re-sits, appeals, complaints and general enquiries please see our website: www.siasuk.com

or contact:

SIAS – 01925515211 - info@siasuk.com



Floor 1, 720 Mandarin Court
Centre Park, WARRINGTON
WA1 1GG

T: 01925 515211
E: info@siasuk.com
W: www.siasuk.com