ST0847

LEVEL 4

Engineer Surveyor

End-Point Assessment Specification

LEIA ASSESSMENT

About the Apprenticeship Standard

Apprenticeship Standard	Engineer Surveyor
Standard code (ST0xxx)	ST0847
Level	4
Date apprenticeship standard approved for delivery	2020 – last reviewed April 2024
Date apprenticeship standard scheduled for review	April 2027
Typical Duration of apprenticeship (excluding EPA)	24 months
Pre-entry requirements for apprenticeship	For individual employers to decide

Knowledge, skills and behaviours

The knowledge, skills and behaviours of the apprenticeship standard that must be learnt during the apprenticeship prior to End-Point Assessment.

Gateway to end-point assessment (pre-entry requirements to end-point assessment)	
Mandated qualifications during apprenticeship	None
Minimum time in learning prior to undertaking end-point assessment	12 months (24 months recommended)
Maths (level)	16-18 L2 19+ Not mandatory
English (level)	16-18 L2 19+ Not mandatory
Any other gateway requirementsquarantine forms and reports of thorough examination.	Portfolio of Evidence
The process for Reasonable adjustments	Application at least 3 months prior to EPA via Reasonable Adjustments and Special Considerations Policy (EPA21)

End-point Assessment (EPA)

EPA		
Name of end-point assessment organisation		LEIA
End-point organisation code		EPA0269
About LEIA		Trade association for the Lift and Escalator industry
Contracting, planning and scheduling end-point assessment		Email epa@leia.co.uk
Duration of EPA		6 months
Assessment Plan version number that LEIA is operating to		Version 1.1
Objective of the end-point assessment		To complete the apprenticeship
End-point assessment methods	**Assessment method 1:**	Knowledge Test
	Assessment method 2:	Observation
	Assessment method 3:	Professional interview
Language of the end-point assessment		All components of the EPA will be conducted in English. The apprentice may be assessed in British Sign Language where it is permitted for the purpose of reasonable adjustment.
Mock materials provided		MCQ Test / Professional Interview Questions

End-point Assessment method 1 – Knowledge Test	
KSBs to be assessed	See assessment plan
Duration	60 minutes
Delivery methods (face to face / remote)	Remote assessment or face to face
Location	Employers' premises or agreed suitable location
Equipment or resources required	Computer with webcam and microphone, stable internet connection, resource material
Assessor apprentice ratio	10:1 face to face, 1:1 remote
Number of questions (if applicable)	30
Grading	Fail, pass, distinction

End-point Assessment (EPA) (cont.)

End-point Assessment method 2 – Observation	
KSBs to be assessed	See assessment plan
Duration	5 hours +10%
Delivery methods (face to face / remote)	Face to face
Location	Customers site/ employers premises
Equipment or resources required	The following activities MUST be observed during the observation: • Inspection of 3 items of plant, machinery, or equipment (that provides the breadth and depth of the core KSBs and the option KSBs across the 3 inspections) to assess condition. • Production of a report to document findings identified and completed during the examination and inspection activity. This can be used when assessing the Report Writing cluster of grade descriptors (K6, K16 and S5). • Interaction with customer (K16). • Application of technical inspection procedures and safe systems of work, including preparation of a risk assessment to support the Risk Assessment cluster of grade descriptors (K7, K15, S7 and S8). • Use of appropriate PPE and tools as required for the task.
Assessor apprentice ratio	1:1
Number of questions (if applicable)	30 minutes – post observation – minimum of 5 questions
Grading	Fail / Pass

End-point Assessment (EPA) (cont.)

End-point Assessment method 3 – Professional Interview	
KSBs to be assessed	See assessment plan
Duration	90 minutes +10%
Delivery methods (face to face / remote)	Remote / face to face
Location	Apprentice should be at the employer's premises
Equipment or resources required	Quiet room, computer with camera, microphone and stable internet connection
Assessor apprentice ratio	1:1
Number of questions (if applicable)	Minimum of 12 questions
Grading	Fail, pass, distinction

Results and grading

The process for Special Considerations	Application after assessment within 48 hours as per Reasonable Adjustments and Special Considerations Policy (EPA21)
End-Point assessment final grading	Pass, Distinction
Re-sits and retakes	Within the EPA 8 months
Complaints and appeals	Formal request via Complaints and Appeals Policy (EPA06)
Certification process	Certificate claimed directly from the Education Skills Funding Agency

Knowledge Test

Core Knowledge	
Ref	KSB
K9	Appropriate legislation and standards including all relevant Health and Safety requirements.
K10	Appropriate mathematical problem-solving tools including engineering mathematics such as: • calculus, • algebraic transformation techniques, • logarithmic and exponential functions • and algebraic methods, • trigonometric functions, • the radian measure, • trigonometric identities • and graphs.
K11	Engineering science, including the behavioral characteristics of elements of static engineering systems, the behavioral characteristics of elements of dynamic engineering systems.
Mechanical Knowledge	
Ref	KSB
K17	Fixed equipment installation requirements.
K12	Mechanical Materials science, including the properties, characteristics and selection criteria of materials from tests and data sources including, metallic, ceramic, polymer and composite material.
K19	Principles of materials engineering, including the relationships between manufacturing processes and material behaviour, the impact of heat treatment, liquid processing and mechanical processing methods.
Electrical Knowledge	
Ref	KSB
K22	Electrical installation methods and practices.
K13	Principles of electrical engineering, including technical drawings, circuits, distribution boards, wiring, measurement and testing of electrical circuits.
K18	AC and DC theory and how this can be used to solve electrical and electronic engineering problems

Knowledge Test (cont.)

Core Skills	
Ref	KSB
S11	Apply engineering science, to identify the behavioral characteristics of elements of static engineering systems, the behavioral characteristics of elements of dynamic engineering systems and AC and DC theory and use this knowledge to identify equipment defects and suggest solutions.
Mechanical Skills	
Ref	KSB
S13	Apply the appropriate mechanical engineering science principles when inspecting a mechanical installation, to reach overall conclusions.
Electrical Skills	
Ref	KSB
S12	Apply the appropriate electrical engineering science principles when inspecting, testing and commissioning an electrical installation, to reach overall conclusions.

Practical Assessment

Knowledge	
Ref	KSB
K1	Company inspection procedures and processes.
K2	The equipment being inspected and how it is used.
K3	Use a range of measurement tools and equipment to carry out inspections such as Vernier Calipers, Pressure Gauges, electrical test equipment, flow meters - where appropriate.
K6	Report writing tools and note taking techniques and correct use of Systems International (SI) units of abbreviations.
K7	Risk assessment methodology and appropriate control measures.
K8	How and when to use appropriate IT tools, including spreadsheets and word processing packages.
K14	A detailed technical awareness of the equipment being inspected.
K15	Safe access and egress.
K16	Effective oral and written communication strategies, the terminology used in this occupation and the appropriate format of inspection reports.
Skills	
Ref	KSB
S1	Carry out inspections of engineering equipment in accordance with company policies, relevant legislation and standards.
S3	Use appropriate inspection equipment.
S5	Prepare succinct inspection reports using appropriate IT systems.
S6	Use engineering principles to reach an overall conclusion about the condition of the equipment.
S7	Prepare Risk Assessments and apply Safe Systems of Work.
S8	Identify and manage risks of health, safety and welfare.
S10	Manage own time and tasks.
S16	Read and interpret drawings, data and other relevant information.
S18	Work competently and safely in the workplace to meet regulatory and legislative requirements.

Practical Assessment (cont.)

Behaviours	
Ref	KSB
B2	Logical approach: Able to structure a plan and develop activities following a logical thought process, but also able to quickly "think on feet" when working through them.
B4	Quality focus: Follows rules, procedures and principles in ensuring work completed is fit for purpose and pays attention to detail. Checks for errors.

Professional Interview

Ref	KSB
S2	Identify equipment defects - both common and complex - and take appropriate action to advise a compliant outcome.
K4	Management techniques including customer relationship management, negotiating and influencing techniques, commercial awareness, conflict management and assertiveness techniques.
S4	Use negotiating techniques to build and maintain customer relationships.
S14	Manage and diffuse potential conflicts.
B3	Problem solving orientation: Identifies issues quickly, enjoys solving complex problems and applies appropriate solutions. Has a strong desire to push to ensure the true root cause of any problem is found and a solution is identified which prevents recurrence.
B5	Personal responsibility and resilience: Motivated to succeed. Accountable and persistent to complete task.
K5	Roles and responsibilities within the organisation, team dynamics and their own boundaries of authority.
B7	Team player: Not only plays own part but able to work and communicate clearly and effectively within a team and interacts with and helps others when required. Does so in a respectful manner.
S15	Work safely at height.
B13	Health and Safety: Maintains a health and safety focus at all times, challenging unacceptable behavior.
S17	Interpret appropriate engineering mathematical formulae and compare results with actual on-board readings, data/calculations and inspection findings.
B8	Maintains competence and keeps pace with change: Continuous improvement in driving effectiveness and efficiency and maintenance of regulations and rules.
B9	Adaptability: Able to adjust to different conditions, technologies, situations and environments.
B10	Self-motivation: A "self-starter" who wants to give their best, sets themselves challenging targets and can make their own decisions.
B1	Strong work ethic: Positive attitude, motivated by engineering, dependable, ethical, responsible and reliable.
B11	Commitment: Able to commit to beliefs, goals and standards of their own employer and to the wider industry and its professional standards.
K20	The in-service causes of failure of engineering materials, including the most common causes of in- service failure and appropriate remedial action.
K21	Health and safety requirements which apply when inspecting, testing and commissioning principles of electrical installations. (Requirements for inspecting and testing electrical installations, requirements for the safe inspection of electrical installations, requirements for the safe testing of electrical installations, inspection and testing procedures of electrical installations).

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LEIA Assessment
Lift and Escalator Industry Association
Rotherwick House, 3 Thomas More St,
St Katharine's & Wapping, London E1W 1YZ

www.leia-assessment.co.uk

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