

Acoustics Technician Apprenticeship Pack



Supported by the ANC and IOA, a new Level 4 Apprenticeship Technician Scheme has been developed in partnership with London South Bank University.



APPRENTICESHIP ROADMAP FOR EMPLOYERS

STEP 01

Register for the Apprenticeship Service as an employer. Visit www.gov.uk to find out how to register and use the apprenticeship service as an employer



STEP 02

Establish funding parameters related to the company's Apprenticeship Levy tax obligations – how much can you claim for your apprentice?



STEP 04

Advertise for an apprentice (see template advertisement as a starter)



STEP 05

Interview potential apprentices



STEP 06

Once you've chosen to take on an apprentice, go through the necessary administration



STEP 07

Enjoy mentoring, training, and working with the next generation of acousticians!



STEP 03

Note where your apprentice will attend the course, and how (hybrid or in person)



Click here to watch a video about the necessary paperwork, and how to complete it

Acoustics Technician Apprenticeship Pack

This pack contains:

- Acoustics Technician Template Advert PDF (Word version [here](#))
- Apprenticeship Agreement Template PDF (Word version [here](#))
- Acoustics Technician Details of Standard PDF
- Acoustics Technician End-Point Assessment plan PDF

This pack will be updated as and when new information becomes available. Please check the version number in the footnote.

Acoustics Technicians Apprenticeship Level 4	
Start	September 2022
Location	London South Bank University
Hybrid Learning Option	TBC
Time commitment	20% working week plus assignments and attended laboratories in London
Delivery	Day release (1 day per week)
Duration	24 months (not including End Point Assessment Period)
About your business	This section should be completed by the employer, using their standard information detailing what the company does.
Overview of role (amend in line with primary business functions)	<p>Becoming an Acoustics Technician Apprentice will open you up to a world of sound and vibration across many different industries and sectors. Whilst work with us in the field of [INSERT EMPLOYERS BUSINESS DESCRIPTION], you will develop a wide range of key Knowledge, Skills and Behaviours (KSBs), giving you the tools to develop a career in one of the fastest growing and exciting areas of applied science. Among these you will learn the technical skills required to develop [INSERT TYPE OF WORK e.g. architectural acoustic design solutions], alongside broader skills such as project management, communication and collaborating with teams comprising a wide variety of personalities and skills in their own right.</p> <p>No two days are usually the same in the field of acoustics and vibration, with the role offering opportunities to:</p> <ul style="list-style-type: none"> • Gain mentorship and knowledge from more experience members of the team; • Learn the operation, maintenance, and data analysis associated with measurement equipment; • Analyse data for a variety of practical design and manufacturing outputs; • Develop reports to communicate analysis outputs to colleagues and clients; • Develop an understanding of sound and how it behaves in buildings and the environment; • Collaborate with a wide variety of professionals in the field to develop holistic outcomes using the knowledge you will accumulate. <p>Becoming an apprentice offers boundless opportunities to learn and grow in a practical environment, giving rise to onward opportunities for a career in the field of acoustics and vibration.</p>
What you need	<ul style="list-style-type: none"> • 3 A-levels at grade C or above (including Maths) OR a BTEC National Diploma or Level 3 equivalent (including Maths) • GCSE passes in five subjects (grade C or above), including English Language and Mathematics. • Experience of (or interest in) working with sound • Experience of design or coding • Enthusiasm about the built environment, engineering, environmental and suitability issues.

What we offer	<ul style="list-style-type: none"> • Competitive salary • Level 4 qualification opening doors to the next educational stages • Stimulating professional environment • Pathway to Membership of the Institute of Acoustics and registration with the Engineering Council
How to apply	[EMPLOYER TO INSERT HOW THEY WANT APPLICANTS TO APPLY FOR THE ROLE]
Interview period	[EMPLOYER TO INSERT TIMELINE IF NEEDED]

APPRENTICESHIP AGREEMENT TEMPLATE

An apprenticeship agreement must be in place at the start of the apprenticeship.

The purpose of the apprenticeship agreement is to identify:

- the apprenticeship standard connected to the apprenticeship;
- the dates during which the apprenticeship is expected to take place; and
- the amount of off the job training that the apprentice is to receive.

Before completing the template, please see the notes and references provided on the following two pages.

Apprenticeship Particulars:

Apprentice name:	
Relevant apprenticeship standard and level:	
Place of work (employer):	

Start date of apprenticeship (see note 3):		End date of apprenticeship (see note 3):	
Start date of practical period (see note 4):		Estimated end date of practical period (see note 4):	
Duration of practical period (see note 4):		Planned amount of off-the-job training (hours) (see notes 9 and 10):	

Signatories:

Apprentice:		Date:
Employer:		Date:

Attached to this document should be a commitment statement. The commitment statement includes what the apprentice, employer and training provider can expect from each other. For example, it will specify the off-the-job training the apprentice will receive.

APPRENTICESHIP AGREEMENT

Notes and references

1. The apprenticeship agreement

The apprenticeship agreement is a statutory requirement for the employment of an apprentice in connection with an approved apprenticeship standard. It forms part of the individual employment arrangements between the apprentice and the employer; it is a contract of service (i.e. a contract of employment) and not a contract of apprenticeship. If all the requirements of section 1 of the Employment Rights Act 1996 are complied with, the apprenticeship agreement can also serve as the written statement of particulars of employment. You are not required to use this template, but the requirements of the legislation as described below must be met when you form your apprenticeship agreement.

2. Why an apprenticeship agreement is required

The Apprenticeships, Skills, Children and Learning Act 2009 (ASCLA) introduced the requirement for an apprenticeship agreement to be in place when engaging an apprentice under a statutory apprenticeship. The requirements for an apprenticeship agreement can be found in section A1 of ASCLA and the Apprenticeships (Miscellaneous Provisions) Regulations 2017.

3. When the apprenticeship agreement must be in place

An apprenticeship agreement must be in place when an individual starts a statutory apprenticeship programme and should remain in place throughout the apprenticeship. The end date is when the end-point assessment is due to be completed.

4. The 'practical period'

The practical period is the period for which an apprentice is expected to work and receive training under an approved English apprenticeship agreement. The practical period does not include the end-point assessment. For the purpose of meeting the Education and Skills Funding Agency funding requirements, the practical period start date set out in the apprenticeship agreement must match the practical period start date in the commitment statement and the start date in the Individual Learner Record.

5. In certain circumstances, an apprenticeship can be completed without an apprenticeship agreement being in place

To *commence* a statutory apprenticeship (when an individual starts their apprenticeship programme) it is a legal requirement that an apprenticeship agreement be in place. The two circumstances in which an apprentice can complete a statutory apprenticeship without an apprenticeship agreement are where (i) they are holding office as an apprentice police constable, or as an apprentice minister of a religious organisation; or (ii) where they have been made redundant with less than six months of their apprenticeship's practical period left to run (see regulation 6 of the Apprenticeships (Miscellaneous Provisions) Regulations 2017).

6. Who needs to sign the apprenticeship agreement?

The employer and the apprentice need to sign the agreement – it is an agreement between these two parties only. Training providers sign a separate commitment statement which outlines the planned content and schedule for training, what is expected of and offered by the employer, provider and the apprentice, and how to resolve queries or complaints.

7. What you need to do with the signed agreement

You (the employer) must keep the agreement for the duration of the apprenticeship and give a copy to the apprentice and the training provider.

8. Information needed in an apprenticeship agreement

The apprenticeship agreement must comply with the requirements as provided in ASCLA. It must:

- provide for the apprentice to work for the employer for reward in an occupation for which a standard has been published by the Institute for Apprenticeships and Technical Education;
- provide for the apprentice to receive training in order to assist the apprentice to achieve the standard in the work done under the agreement;
- specify the apprenticeship's practical period; and
- specify the amount of off-the-job training the apprentice is to receive.

9. Specifying the amount of off-the-job training

This is a requirement of the Apprenticeships (Miscellaneous Provisions) Regulations 2017. Off-the-job training is a critical requirement of apprenticeships and, in order to meet the Education and Skills Funding Agency's funding rules, this must be at least 20% of the apprentice's normal working hours over the total duration of the apprenticeship (until gateway). Off-the-job training can only be received by an apprentice during their normal working hours. Maths and English, up to and including level 2, does not count towards the minimum 20% off-the-job training requirement. The amount of off-the-job training should be agreed with the main provider. The provider must account for relevant prior learning the apprentice has received and reduce the content and duration of off-the-job training as necessary to achieve occupational competence. All apprenticeships must be of minimum duration of 12 months and include at least 20% off-the-job training.

10. Off-the-job training definition

Off-the-job training is defined as training which is received by the apprentice, during the apprentice's normal working hours, for the purpose of achieving the standard connected to the apprenticeship. It is not on the job training received by the apprentice for the sole purpose of enabling the apprentice to perform the work to which the apprenticeship agreement relates. More information, including examples of off-the-job training, can be found on gov.uk¹.

11. The apprenticeship agreement does not mean a change to existing contracts or terms and conditions

Any apprenticeship entered into before 15 January 2018 (the date the Apprenticeships (Miscellaneous Provisions) Regulations 2017 came into force) will not be affected by the additional requirements that must be set out in an apprenticeship agreement. Any apprenticeship entered into after 15 January 2018 in connection with an apprenticeship standard must satisfy the requirements of the 2017 Regulations.

¹ <https://www.gov.uk/government/publications/apprenticeships-off-the-job-training>

ACOUSTICS TECHNICIAN

Reference Number: ST0613

Details of standard

Acoustics deals with all types of waves in a variety of different situations. The waves may include sound and vibration in air and water, as well as very low (infra) and very high (ultra) sound waves. A knowledge of how these waves behave in different media has enabled technologies to develop in fields as diverse as architectural, musical and medical engineering. Acoustics is considered in many construction and major engineering projects, such as Crossrail, HS2, and The Sage Concert Hall Gateshead, amongst many others.

Typically, companies that are involved in acoustics include specialist consulting firms for the built environment; planning consultants; construction companies; health and safety practitioners; entertainment and performing arts venues; product manufacturers; engineering, and national and local government. Due to the specialist nature of the subject, an Acoustics Engineering Technician would commonly be part of a wider project team, focusing on the acoustic aspects of a project alongside fellow specialists such as Acoustics Consultants and Engineers.

An Acoustics Engineering Technician will undertake tasks in support of practitioners in acoustics, including consultants, laboratories, local authorities, transport authorities and other engineering disciplines in a variety of professional areas. Specific job roles that would be relevant to an Acoustics Engineering Technician would include:

- Architectural and Environmental Acoustics Technician
- Acoustics Laboratory Technician
- Acoustics Calibration Engineering Technician
- Supporting Environmental Health Practitioner for noise
- Acoustics Product Design Technician

An Acoustics Engineering Technician understands the science of sound and vibration propagation and applies this to work areas relevant to their employer's working practices. They often apply the same fundamental principles to solving acoustic problems in different contexts e.g. architectural and environmental acoustics would be applicable as part of a planning application.

Typical duties would include noise/vibration surveying and testing; data acquisition, processing and analysis; calculation; specialist acoustics modelling; reporting; maintenance and calibration of equipment and client liaison.

Knowledge: An Acoustics Engineering Technician has knowledge and understanding of:

- The principles and responsibilities, imposed law and other regulations in acoustics engineering environments.
- Scientific principles that underpin acoustics including the transmission of sound through different materials and behaviour and control of sound.
- Level 4 mathematics for undertaking hand and spreadsheet based acoustic calculations.
- The range of equipment used to measure sound and vibration including calibration and maintenance techniques.
- Sound and vibration measuring and recording techniques in laboratory, internal and external environments.
- Sustainable practices in the design and manufacture of acoustic products.
- Technical drawing using Computer Aided Design software packages.
- Acoustic modelling software and methods and their use in the sector.
- Technical report writing techniques for both internal and external audiences.
- The standards and guidance applicable to acoustics practitioners (e.g. Approved Document E of the Building Regulations, Control of Pollution Act 1974, Building Bulletin 93: Acoustics Design of Schools).

Skills: An Acoustics Engineering Technician can:

- Identify risk of activities and apply safe working practices both in laboratory and site environments.
 - Plan, measure, analyse and report acoustic data.
 - Operate acoustic modelling software appropriate to their organisation.
 - Operate Computer Aided Design software packages.
 - Calibrate, operate and maintain acoustic equipment to maintain the appropriate British Standards (e.g. BS EN 61672-2: 2014 Electroacoustics, Sound Level Meters).
 - Undertake acoustics calculations manually and using spreadsheets.
 - Apply standards and guidance in the context of acoustics including those related to the built environment, construction, and laboratory/on-site testing.
- Listen critically and interpret sound correctly.

- Communicate effectively, contributing to meetings and presenting information in a variety of ways including oral and written.
- Produce succinct and understandable reports for the end user.
- Think critically, analyse and clearly present the outputs of acoustic information.

Behaviours: An Acoustics Engineering Technician demonstrates:

- Accuracy and diligence in practical work in both laboratory and site contexts.
- Team working with others in a collaborative and non-confrontational way.
- Attention to detail in results outputs against standards, guidance and client briefs.
- Time management
- Commitment to Equality and Diversity

Entry Requirements

Whilst any entry requirements will be a matter for individual employers, typically an apprentice might be expected to have already achieved qualifications equivalent to a level 3 apprenticeship, preferably in the fields of mathematics, science, technology, engineering or design (collectively known as STEM).

Apprentices without Level 2 English and Maths will need to achieve this level prior to taking the end point assessment. For those with an education, health and care plan or a legacy statement, the apprenticeship English and Maths minimum requirement is Entry Level 3 and British Sign Language qualifications are an alternative to an English qualification for those for whom this is their primary language.

Duration

The typical duration for this apprenticeship is 24 months.

Level :

4

Professional Recognition

It is our intention that successful apprentices will be eligible to register with the Engineering Council, at EngTech level. This will be confirmed before the apprenticeship goes live.

Review

3 years.

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Find an apprenticeship

Version log

VERSION	CHANGE DETAIL	EARLIEST START DATE	LATEST START DATE	LATEST END DATE
1.0	Approved for delivery	11/06/2019	Not set	Not set



End-point assessment plan for Acoustics Technician apprenticeship standard

Standard reference number	Level of this EPA plan	Integrated
ST0613	4	n/a

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Introduction and overview

This document sets out the requirements for end-point assessment (EPA) for the Acoustics Technician apprenticeship standard. It is for end-point assessment organisations (EPAOs) who need to know how EPA for this apprenticeship must operate. It will also be of interest to Acoustics Technician apprentices, their employers and training providers.

Full time apprentices will typically spend 24 months on-programme (before the gateway) working towards the occupational standard, with a minimum of 20% off-the-job training. All apprentices will spend a minimum of 12 months on-programme.

The EPA period should only start, and the EPA be arranged, once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, all of the pre-requisite gateway requirements for EPA have been met and that they can be evidenced to an EPAO.

All pre-requisites for EPA assessment methods must also be complete and available for the assessor as necessary.

For level 3 apprenticeships and above apprentices without English and mathematics at level 2 must achieve level 2 prior to taking their EPA.

The EPA must be completed within an EPA period lasting typically 6 months, beginning when the apprentice has met the EPA gateway requirements.

The EPA consists of 2 distinct assessment methods.

The individual assessment methods will have the following grades:

Assessment Method 1: Project and Presentation

Distinction

Pass

Fail

Assessment Method 2: Professional Discussion (based on portfolio)

Distinction

Pass

Fail

Performance in the EPA will determine the overall apprenticeship grades of:

Distinction

Pass

Fail

EPA summary table

On-programme (typically 24 months)	Training to develop the occupation standard's knowledge, skills and behaviours.
End Point Assessment Gateway	<ul style="list-style-type: none"> • Employer is satisfied the apprentice is consistently working at, or above, the level of the occupational standard. • English/mathematics Level 2 <p>Apprentices must complete:</p> <ul style="list-style-type: none"> • The work-based portfolio
End Point Assessment (which would typically take 6 months)	Assessment Method 1: Project and Presentation Assessment Method 2: Professional Discussion (based on portfolio)
Professional recognition	Aligns with recognition by: <ul style="list-style-type: none"> • The Engineering Council at Eng Tech level

Length of end-point assessment period:

The EPA (including all assessment methods) must be completed typically within **6** months of the apprentice passing the gateway.

Order of assessment methods

The assessment methods can be delivered in any order.

Gateway

The EPA period should only start once the employer is satisfied that the apprentice is consistently working at or above the level set out in the occupational standard, that is to say they are deemed to have achieved occupational competence. In making this decision, the employer may take advice from the apprentice's training provider(s), but the decision must ultimately be made solely by the employer.

In addition to the employer's confirmation that the apprentice is working at or above the level in the occupational standard, the apprentice must have completed the following gateway requirements prior to beginning EPA:

English and mathematics at level 2.

Work-based portfolio

For those with an education, health and care plan or a legacy statement the apprenticeships English and mathematics minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.

For the Professional Discussion, the apprentice will be required to submit:

- Work-based portfolio. This should include:
- Typically ten individual pieces of evidence to demonstrate competence against one or more of the KSBs mapped to this assessment method. The collated evidence when combined should cover all KSBs mapped to this method.
- Evidence sources may include evidence of work undertaken which may be supported by: client feedback, witness testimonies, employer/trainer feedback, training records, appraisal records, training course completion. This list is not definitive, other evidence sources are permissible however reflective accounts and self-evaluations are not allowed.

Assessment Methods

Assessment Method 1: Project and Presentation

This method has 2 components (both components are assessed holistically and must be passed)

Component 1: Project

Overview

Apprentices will undertake a project which would typically take 4 weeks and produce a report that appropriately covers all of the KSBs assigned to this method of assessment.

The project will be based on a typical real work-based acoustics project such as:

- Sound insulation test;
- Compliance Noise monitoring;
- Room acoustic design;
- Mechanical services assessment;
- Laboratory building element test;
- Acoustic assessment in support of a planning application
- Road traffic noise assessment

The project used in assessment method 1 must not be one of the projects included in assessment method 2. The project brief must be agreed at the gateway between the apprentice, the employer and EPAO and the project report will cover the following as a minimum:

- project context;
- the apprentice's responsibilities and action taken by the apprentice (planning and execution);
- acoustic calculations;
- demonstration of skills and knowledge used;
- results.

The report must include an annex containing a maximum of 10 pieces of evidence relating to the project. The evidence must be attributable to the apprentice, in part or in full. Evidence must be accompanied by a statement outlining the apprentice's contribution, signed by the apprentice and their employer thereby authenticating it. Example evidence may include plans, diagrams, calculations, blog content, press releases, client feedback, manager feedback, video clips. This list

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is not definitive and other evidence sources apart from self-reflection are permissible. The annex must include a mapping of the evidence to the KSBs assessed by this assessment method.

Delivery

Apprentices must submit a project report to their EPAO within 30 working days of the agreed project start date.

The project report must be 2,500 words +/-10%, excluding annexes.

The project will be assessed by the independent assessor however they may consult with an independent technical expert where clarification is needed. The technical expert will only supply clarification on technical matters* to do with the job role. The assessment decision is made solely by the independent assessor.

*

Due to the number of specialisms that this occupation covers, the independent assessor can request representation from a technical expert in the professional discussion. So for example, the assessor may be a specialist in highways acoustics and the project completed in room acoustics therefore technical advice may be required in respect of terminology, equipment or procedures. The rules governing their role are described in the Roles & Responsibilities section of this document. The technical expert cannot be from the employer in order to maintain independence and they are only required if the independent assessor does not have the technical expertise required to accurately assess the apprentice in a specialist area.

Component 2: Presentation & Questioning

Overview

Apprentices will prepare and deliver a presentation that appropriately covers the KSBs assigned to assessment method 1.

The presentation will be based on a summary of the project report and will cover the following as a minimum:

- a summary of the project report;
- explanation of how and why specific techniques and criteria have been selected;
- recommendations;
- evaluation against project brief.

The independent assessor will then draw out any further information using questions. EPAOs must develop 'question banks' of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure the questions are fit for purpose'. The assessor may also generate no more than 4 of their own questions if required.

The presentation will be completed and submitted after the gateway and will be presented to an independent assessor, either face-to-face or via online video conferencing. If using an online platform, EPAOs must ensure appropriate measures are in place to prevent misrepresentation and ensure the apprentice is not being aided in some way.

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The apprentice will submit the presentation between submission of the project report and the presentation date provided by the EPAO. The presentation must be submitted 10 days before the presentation to allow the assessor to review it.

The rationale for this assessment method is:

As part of an acoustics technicians' role they will be expected to carry out research projects before relating the findings back to various audiences through presentations and discussions. Therefore this method of assessment is deemed as the most appropriate for this situation as it accurately reflects the environments and future tasks of the apprentice.

Delivery

The presentation will last for 30 minutes including questioning. The assessor has the discretion to increase the time of the presentation by up to 10% to allow the apprentice to complete their last point.

The independent assessor will ask a minimum of 8 questions at the end of the presentation. Follow up questions are allowed for clarification of a point.

To deliver the presentation, the apprentice will have access to:

- PowerPoint
- flip chart
- work products
- videos
- interactive demonstrations
- notes
- computer

The above list is not exhaustive and other presentation methods may be permissible where appropriate.

The presentation will be conducted as follows:

The independent assessor will ask competency type questions based on the Grading descriptors to ensure a consistent approach is adopted. The independent assessor may ask additional follow up questions to seek clarification where required. Assessment should take place against the knowledge and skills listed in mapping section of this document.

The presentation will typically last 10 minutes and the question session 20 minutes.

The independent assessor must:

- a. plan the assessment prior to it taking place;
- b. ensure that the location for the assessment is appropriate;
- c. ensure the presentation and discussion takes place in a room free from distractions with no other people present except those with prior approval from the EPAO;
- d. ensure the technical expert is fully briefed about their role before the assessment commences;
- e. ensure any special needs of the apprentice are taken into consideration in-line with the EPAO's Reasonable Adjustments Policy;
- f. ensure that the apprentice understands the assessment process, the possible outcomes and how it is graded;
- g. ensure that the apprentice is at ease;
- h. ensure that the grading criteria and relevant documentation are to hand before commencing;
- i. capture an audio record of the presentation and discussion;
- j. document the outcomes using the EPAO's standard documentation;

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- k. collect all presentation materials from the apprentice;
- l. ensure the apprentice is not informed of the outcome of the assessment at this stage;
- m. make the final decision about the outcome of the assessment and the grade;
- n. send documentation to the EPAO within the agreed time.

The independent assessor will make all grading decisions. The grade will be based on a holistic view of the project report, presentation and questions and calculated using the grading criteria.

Venue

EPAOs must ensure that the presentation and questioning elements are conducted in a suitable controlled environment in any of the following:

- employer's premises
- other suitable venue selected by the EPAO (e.g. a training provider). If the employer's premises is not used, the EPAO is responsible for ensuring that it can facilitate the EPA.

The venue should be a quiet room, free from distraction and external influence.

Other relevant information

The representation can be:

- independent assessor
- technical expert (due to the number of specialisms this apprenticeship covers). See Roles and Responsibilities section for rules governing this. The technical expert cannot be from the employer in order to maintain independence and they are only required if the independent assessor does not have the technical expertise required to accurately assess the apprentice in a specialist area.

Support material

Support materials must be produced to ensure the report (component 1) and presentation (component 2) are marked consistently and accurately.

EPAOs will produce the following material to support this assessment method:

Standard documentation for recording of assessment results.

Question bank

Assessment Method 2: Professional Discussion (based on work-based portfolio)

Overview

This assessment will take the form of a professional discussion, which must be appropriately structured to draw out the best of the apprentice's competence and excellence and cover the KSBs assigned to this assessment method. It will focus on:

- the projects, work based training, development activities and performance reviews that the apprentice has undertaken during the "on-programme" apprenticeship period ;
- details of the projects undertaken which will include a high-level overview of the project, key objectives and deliverables, dates and time periods for the project and a detailed description of the activities of the apprentice in order to achieve the project deliverables;
- The portfolio should demonstrate how each work project and work-based training activity helps to achieve the Knowledge, Skills and Behaviours (KSBs) set out in the apprenticeship standard.

End Point Assessment Organisations (EPAOs) will receive a copy of the Portfolio at the gateway point to provide sufficient time to review its content.

EPAOs must provide guidance on what format the portfolio might take, including how it will be submitted and stating that it should not include any reflective self-assessment.

The content of the portfolio is expected to be used to support the professional discussion. The portfolio of evidence itself is not assessed, it is used to inform the questioning for the professional discussion. The portfolio of evidence must contain at least one piece of evidence mapped clearly to each of the knowledge, skills and behaviours (KSBs) relating to the professional discussion. Although each piece of evidence may map to more than one KSB, this will typically result in 10 pieces of evidence to cover all KSBs assigned to the professional discussion.

The professional discussion can take place in any of the following:

- employer's premises
- a suitable venue selected by the EPAO (e.g. a training provider's premises). If the employer's premises is not used, the EPAO is responsible for ensuring that it can facilitate the EPA.

The rationale for this assessment method is:

The Professional Discussion is an accurate method to assess those KSBs are not likely to occur in the post gateway project. An acoustics technician will be expected to be able to discuss their findings and results of projects in a formal setting with confidence and be able to explain in detail their results.

Delivery

The independent assessors will conduct and assess the professional discussion.

The professional discussion must last for 45 minutes. The assessor has the discretion to increase the time of the professional discussion by up to 10% to allow the apprentice to complete their last answer. Further time may be granted for apprentices with appropriate needs, in-line with the EPAO's Reasonable Adjustments Policy.

During the discussion, the independent assessor must combine questions from the EPAO's question bank and those generated by themselves. The independent assessor will ask a minimum of 10 questions during the professional discussion, 5 from the question bank and 5 generated by themselves. The independent assessor may ask follow up questions to seek clarification where required. Assessment should take place against the knowledge, skills and behaviours listed in the mapping section of this document.

The purpose of the professional discussion is to:

- clarify any questions the independent assessor has from their review of the work-based Portfolio;
- explore aspects of the work, including how it was carried out, in more detail;
- require the apprentice to draw on their evidence to demonstrate the KSBs.

Requirements:

- Apprentices must receive appropriate notice of their professional discussion time. There should be a minimum of 3-weeks' notice of the time, date and venue.
- EPAOs must structure a series of topic areas for discussion based on the areas of the standard to be tested as detailed in the KSB mapping section of this document.
- The professional discussion must seek to assess the depth of understanding to determine performance against the grading criteria.
- Video conferencing can be used to conduct the professional discussion, but the EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided in some way.
- Independent assessors must assess the professional discussion using the grading criteria in this document.
- Apprentices may refer to their Portfolio when answering the questions.

The independent assessor must use the assessment tools and procedures that are set by the EPAO to record the professional discussion.

The independent assessor will make all grading decisions.

Venue

The professional discussion should take place in a quiet room, free from distractions.

Other relevant information

A structured topic areas specification and question bank must be developed by EPAOs. The 'question bank' must be of sufficient size to prevent predictability and review it regularly (and at least once a year) to ensure that it, and its content, are fit for purpose. The specifications, including questions relating to the underpinning knowledge, skills and behaviours, must be varied yet allow assessment of the relevant KSBs.

Due to the number of specialisms that this occupation covers, the independent assessor can request representation from a technical expert in the professional discussion. The rules governing their role are described in the Roles & Responsibilities section of this document. The technical expert cannot be from the employer in order to maintain independence and they are only required if the independent assessor does not have the technical expertise required to accurately assess the apprentice in a specialist area.

EPAOs must ensure that apprentices have a different set of questions in the case of re-sits/re-takes.

Independent assessors must be developed and trained by the EPAO in the conduct of professional discussions and reaching consistent judgement.

EPAOs will produce the following material to support this assessment method:

Standard documentation for recording of assessment results.

Sample questions for assessors

Question bank

Weighting of assessment methods

All assessment methods are weighted equally in their contribution to the overall EPA grade.

Grading

Assessment Method 1: Project and Presentation

KSBs	Fail	Pass	Distinction
K1, K2, K3, K4, K7, K8, K9, S2, S4, S6, S8, S9, S10, S11, B3	Does not meet pass criteria	<p>Underpins methods and conclusions used in the project with correctly interpreted scientific principles and responsibilities, imposed law and other regulations appropriate to their discipline. This includes transmission of sound through different materials and behaviour and control of sound. (K1, K2)</p> <p>Uses Level 4 hand and spreadsheet calculations in the project to carry out acoustic calculations. (K3, S6)</p> <p>Uses a range of equipment in the project to measure sound and vibration and describes the methods and requirements to calibrate and maintain each piece of equipment used. (K4)</p> <p>Calculations and conclusions demonstrate that they have listened critically and interpreted sound correctly (S8)</p> <p>Uses CAD software packages in the project to produce technical drawings and describes why these packages were the most appropriate for the task. (K7, S4)</p> <p>Uses an acoustic modelling software package in the project and explains how it is used in the acoustic sector. (K8)</p> <p>Produces a succinct and understandable report and presentation. Can describe the key components of a technical report</p>	<p>Justifies the methods and techniques used in the project based upon the principles, laws and regulations that underpin them.</p> <p>Explains the evidence and assumptions underpinning the acoustic calculations applied to the project, along with a comparison with alternative methods of calculation.</p> <p>Explains the purpose of and how to operate the equipment used for measurements undertaken for the project including why the equipment was deemed the most suitable.</p> <p>Interprets and explains the results produced by acoustic modelling software, including an explanation of any limitations.</p>

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		<p>and how to ensure it is suitable for both internal and external audiences. (K9, S10)</p> <p>Conducts structured and planned data analysis in the project using at least one appropriate measurement and analytical technique to test information and data. (S2)</p> <p>Uses critical thinking in the project to analyse the outputs of acoustic information, testing results against standards, guidance and client briefs. Clearly presents the outputs of acoustic information.(S11, B3)</p>	
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Assessment Method 2: Professional Discussion (based on portfolio)

KSBs	Fail	Pass	Distinction
K5, K6, K10, S1, S3, S5, S7, S9 (S9 meetings context only), B1, B2, B4, B5	Does not meet pass criteria	<p>Describes the sound and vibration measuring and recording techniques used in laboratory, internal and external environments and explains how these were used to produce accurate acoustic results. (K5, B1)</p> <p>Describes and explains the sustainable practices used in the design and manufacture of acoustic products. (K6)</p> <p>Lists the standards and guidance applicable to acoustics practitioners and explain where they are applicable to their role. (K10)</p> <p>Identifies risks associated to their activities and describes how they have applied safe working practices both in laboratory and site environments (S1)</p>	<p>Compares and contrasts sound and vibration measuring and recording techniques, evaluating the benefits and pitfalls of each and justifies why the techniques achieved accurate results.</p> <p>Describes the content of Standards and Guidance related to their area of work in acoustics and provides reasoning as to the implications of not following these</p> <p>Explains the reasons for calibration in the operation of sound and vibration equipment and the implications of not doing so.</p>

		<p>Explains where and how they have effectively operated acoustic modelling software and justifies why it was appropriate to their organisation. (S3)</p> <p>Explains where and how they have calibrated, operated and maintained acoustic equipment and identifies the appropriate British Standards (e.g. BS EN 61672-2: 2014 Electroacoustics, Sound Level Meters) this maintained. (S5)</p> <p>Identifies relevant standards and guidance and explains when they have applied these in the context of acoustics including those related to the built environment, construction, and laboratory/on-site testing. (S7)</p> <p>Describes when they have communicated effectively and contributed to meetings including presenting information both orally and written. Can describe how they evaluated the impact of their message. (S9 meetings context only)</p> <p>Provides evidence of timely reports produced for the end user and describes an example of where they have had to employ time management techniques to resolve conflicting priorities. (B4)</p> <p>Describes when they have worked with others in a collaborative and non-confrontational way, taking into consideration equality and diversity. Can explain why the approach they took was the most appropriate. (B2, B5)</p>	
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Overall EPA grading

All EPA methods must be passed for the EPA to be passed overall.

Fail - Fail in at least one method

Pass- A pass in one method plus a Pass or higher in the other method

Distinction – Distinction in both methods

Grades from individual assessment methods should be combined in the following way to determine the grade of the EPA as a whole:

Assessment Method 1	Assessment Method 2	Overall grading
Fail	Fail	Fail
Fail	Pass	Fail
Fail	Distinction	Fail
Distinction	Fail	Fail
Pass	Fail	Fail
Pass	Pass	Pass
Distinction	Pass	Pass
Pass	Distinction	Pass
Distinction	Distinction	Distinction

Roles and responsibilities

Role	Responsibility
Apprentice	<ul style="list-style-type: none"> • complete the on-programme element of the apprenticeship • prepare for and complete the EPA
Employer	<ul style="list-style-type: none"> • identify when the apprentice is ready to pass the gateway and undertake their EPA • notify the EPAO that the apprentice has passed the gateway
EPAO	<p>As a minimum EPAOs should:</p> <ul style="list-style-type: none"> • appoint administrators/invigilators and markers to administer/invigilate and mark the EPA • provide training and CPD to the independent assessors they employ to undertake the EPA • have no direct connection with the apprentice, their employer or training provider i.e. there must be no conflict of interest • have processes in place to conduct internal quality assurance and do this on a regular basis • organise standardisation events and activities in accordance with this plan's IQA section • organise and conduct moderation of independent assessors' marking in accordance with this plan • have, and operate, an appeals process
Independent assessor	<p>As a minimum an Independent assessor should:</p> <ul style="list-style-type: none"> • be independent of the apprentice, their employer and training provider(s) i.e. there must be no conflict of interest • hold or be working towards an independent assessor qualification e.g. A1 and have had training from their EPAO in terms of good assessment practice, operating the assessment tools and grading • have the capability to assess the apprentice at this level • attend the required number of EPAOs standardisation and training events per year (as defined in the IQA section)
Training provider	<p>As a minimum the training provider should:</p> <ul style="list-style-type: none"> • work with the employer to ensure that the apprentice is given the opportunities to develop the KSBs outlined in the standard and monitor their progress during the on-programme period • advise the employer, upon request, on the apprentice's readiness for EPA prior to the gateway <p>• Plays no part in the EPA itself</p>
Technical Expert	<p>Due to the number of specialisms within the acoustics sector it is recognised that assessors will not have an in depth knowledge of all of these. Therefore the assessor will</p>

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	<p>communicate with the technical expert after reviewing the submitted project and portfolio to clarify specific nuances of the occupational specialism only.</p> <p>The technical expert can provide guidance such as confirming company policies, procedures, processes or providing context on technical information. Any information provided by the technical expert must only be at the request of the end-point assessor who has the final say over the assessment and grade awarded. The technical expert must not provide evidence on behalf of the apprentice. The technical expert must not amplify or clarify anything in the presentation or portfolio. The technical expert cannot be from the employer in order to maintain independence and they are only required if the independent assessor does not have the technical expertise required to accurately assess the apprentice in a specialism.</p>
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Internal Quality Assurance (IQA)

Internal quality assurance refers to the requirements that EPA organisations must have in place to ensure consistent (reliable) and accurate (valid) assessment decisions. EPA organisations for this EPA must:

- appoint independent assessors who have knowledge of the following areas:
Acoustics and Vibration (various areas)
General Science
Mathematics
These must all be at least one level above the apprentice and evidenced by certification.
- appoint independent assessors who have recent relevant experience of the occupation/sector at least at the same level as the apprentice gained in the last 3 years or significant experience of the occupation/sector.
- The assessor will have the following minimum skills, knowledge and occupational competence:
 - Independent assessors must hold a current UK qualification for workplace vocational assessors or a Workplace Competence Assessor Award or be working towards this and be working under supervision.
 - Independent Assessors must be competent in the occupation they are assessing. This is shown through the individual having achieved a qualification at a level equivalent to or higher than the level of the apprenticeship standard being assessed; or by holding professional recognition at a level equivalent to or higher than the registration level of the apprenticeship standard being assessed. Individuals must be able to demonstrate they possess up-to-date knowledge of current working practices and regulations appropriate to the sector in which they are carrying out assessment practice.
 - Maintain a continuous, up-to-date and accurate record of their CPD activities this should equate to at least 5 days CPD in the last year
 - Demonstrate that their CPD activities are of learning activities relevant to current or future practice
 - Seek to ensure that their CPD has benefited the quality of their practice
 - Seek to ensure that their CPD has benefited the users of their work
 - Present a written profile containing evidence of their CPD on request
 - There may be a requirement to hold additional specialist training or security clearance as required by the industry sector.
 - Individuals must complete an EPAO induction to demonstrate working knowledge of the apprenticeship standard and assessment methodology
- provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading
- have robust quality assurance systems and procedures that support fair, reliable and consistent assessment across the organisation and over time.
- operate induction training and standardisation events for independent assessors when they begin working for the EPAO on this standard and before they deliver an updated assessment method for the first time
- Require assessors to attend at least one standardisation event per year and deliver standardisation events

Re-sits and retakes

Apprentices who fail one or more assessment method will be offered the opportunity to take a re-sit or a re-take. A re-sit does not require further learning, whereas a re-take does.

Apprentices should have a supportive action plan to prepare for the re-sit or a re-take. The apprentice's employer will need to agree that either a re-sit or re-take is an appropriate course of action.

An apprentice who fails an assessment method, and therefore the EPA in the first instance, will be required to re-sit any failed assessment methods only.

Any assessment method re-sit or re-take must be taken during the EPA period, otherwise the entire EPA must be taken again, unless in the opinion of the EPAO exceptional circumstances apply outside the control of the apprentice or their employer.

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

Where any assessment method has to be re-sat or re-taken, the apprentice will be awarded a maximum EPA grade of pass, unless the EPAO determines there are exceptional circumstances requiring a re-sit or re-take.

Affordability

Affordability of the EPA will be ensured by using at least some of the following practice:

- using an employer's premises
- Professional discussion can be done via remote means

Professional body recognition

This apprenticeship is designed to prepare successful apprentices to meet the requirements for registration as Engineering Technician with the Engineering Council.

Reasonable adjustments

The EPAO must have in place clear and fair arrangements for making Reasonable Adjustments for this standard. This should include how an apprentice qualifies for Reasonable Adjustment and what Reasonable Adjustments will be made. The adjustments must maintain the validity, reliability and integrity of the assessment methods outlined in this assessment plan.

Mapping of KSBs

PD – Professional Discussion based on Portfolio

P&P – Project & Presentation

KSB code	KSB statement	Methods mapped against
Knowledge		
K1	The principles and responsibilities, imposed law and other regulations in acoustics engineering environments	P&P
K2	Scientific principles that underpin acoustics including the transmission of sound through different materials and behaviour and control of sound.	P&P
K3	Level 4 mathematics for undertaking hand and spreadsheet based acoustic calculations.	P&P
K4	The range of equipment used to measure sound and vibration including calibration and maintenance techniques.	P&P
K5	Sound and vibration measuring and recording techniques in laboratory, internal and external environments	PD
K6	Sustainable practices in the design and manufacture of acoustic products.	PD
K7	Technical drawing using Computer Aided Design software packages.	P&P
K8	Acoustic modelling software and methods and their use in the sector	P&P
K9	Technical report writing techniques for both internal and external audiences	P&P
K10	The standards and guidance applicable to acoustics practitioners (e.g. Approved Document E of the Building Regulations, Control of Pollution Act 1974, Building Bulletin 93: Acoustics Design of Schools).	PD
Skills		
S1	Identify risk of activities and apply safe working practices both in laboratory and site environments	PD
S2	Plan, measure, analyse and report acoustic data.	P&P

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S3	Operate acoustic modelling software appropriate to their organisation.	PD
S4	Operate Computer Aided Design software packages.	P&P
S5	Calibrate, operate and maintain acoustic equipment to maintain the appropriate British Standards (e.g. BS EN 61672-2: 2014 Electroacoustics, Sound Level Meters).	PD
S6	Undertake acoustics calculations manually and using spreadsheets.	P&P
S7	Apply standards and guidance in the context of acoustics including those related to the built environment, construction, and laboratory/on-site testing.	PD
S8	Listen critically and interpret sound correctly.	P&P
S9	Communicate effectively, contributing to meetings and presenting information in a variety of ways including oral and written.	P&P (except meetings) PD (meetings only)
S10	Produce succinct and understandable reports for the end user.	P&P
S11	Think critically, analyse and clearly present the outputs of acoustic information.	P&P
Behaviours		
B1	Accuracy and diligence in practical work in both laboratory and site contexts	PD
B2	Team working with others in a collaborative and non-confrontational way	PD
B3	Attention to detail in results outputs against standards, guidance and client briefs.	P&P
B4	Time Management	PD
B5	Commitment to Equality & Diversity	PD