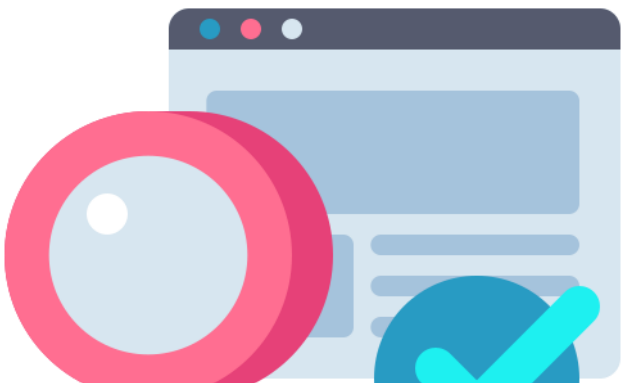
EPA Handbook

ST0805: Construction Equipment Maintenance Mechanic



EPA HANDBOOK

Version history

Version	Date	Change(s) made	Section(s)	Publication source(s)
0.1	29/03/2023	Input draft content	All	Dev team
0.2	20/05/2023	Check against new template	All	Dev team
0.3	31/05/23	Scrutiny Check	All	SR
0.4	5/9/23	Gateway clarifications	Gateway	RR

Contents

About Open Awards

Set up in 1981 as Open College Network North West Region (OCNNWR) and now trading as Open Awards, we have been in business for 40 years. During that time, we have helped thousands of learners get started on the education ladder, return to learning, achieve qualifications to help their careers and progress into further and higher education.

We were the first awarding organisation to design qualifications and courses based on credit accumulation so that learners could achieve in “bite sized” chunks. We designed the units and qualifications that became the basis of the Qualification and Credit Framework (QCF).

We are more than just another Awarding Organisation. Uniquely, we have deep roots in the education sector as forward-thinking organisations, FE Colleges and Local Authorities, created Open College Networks (OCNs) to promote education and achievement. We have a governance structure, which is drawn from the people who use our services – our providers and centres – so that we can truly say we are “of the sector and for the sector”. Our purpose is to meet the needs of our provider organisations and their learners. We are a not-for-profit organisation and a registered charity and we use our funds to invest in our products and services to support the very organisations that use our products.

Open Awards qualifications are approved by the regulators (Ofqual in England and CCEA in Northern Ireland) and are designed to meet the needs of learners and employers. The range of qualifications we offer is designed to meet the aspirations of learners who are seeking a stepping stone to their career, returning to learning or wishing to progress and build their skills and experience. We are constantly adding to our qualification portfolio to ensure that it is fresh and up to date.

We are delighted to have expanded our scope, becoming an end-point assessment organisation (EPAO) for a growing number of apprenticeship standards in England approved by the Institute for Apprenticeships and Technical Education (IfATE). Our EPAO number is: **EPA0565**

Occupational overview

This occupation is found in the construction, plant and tool hire industry as well as allied industries such as rail plant, demolition and quarrying that use construction-based equipment. The broad purpose of the occupation is to service, maintain and repair the wide range of construction-based equipment used within the construction and allied industries such as mobile cranes, excavators, disc cutters, crushers, demolition plant, road-rail equipment, water pumps, telescopic handlers etc. so that they function correctly, safely and efficiently, allowing construction and other projects to be carried out efficiently and on time. This occupation provides a vital support service that is crucial to the prosperity of the country through completion of vital infrastructure projects such a (nuclear) power generation, roads, rail, airports etc.

The construction equipment mechanic checks, services and undertakes basic fault finding activities and will either through their own fault-finding activities or through given instructions, remove, dismantle, repair, assemble and refit a wide range of components, and ensure that the item of plant is fully functional prior to handover to the operational side.

Construction equipment mechanics work not just within construction but also in other areas including quarrying, demolition, utilities (water/gas/electric etc.), piling, rail, waste/landfill, housing, highways, etc. In their daily work, an employee in this occupation interacts with customers, members of the public, supervisors, co-workers, other trades/occupations, supporting occupations, managers, suppliers, safety professionals, manufacturers, administration staff. The mechanic can be mobile, working on-site on a national basis and/or workshop-based undertaking maintenance activities in all weathers. This may include sometimes working on their own although they are subject to overall guidance and direction from others. The work can include weekend and night work to cover breakdowns on roadworks, rail maintenance projects, etc.

Construction related environments including site-based, mobile, workshop based in and outdoors, and in all seasons. An employee in this occupation will be responsible for ensuring they have the right tools and resources such as oils, lubricants and parts, for each task. They analyse problems or defects, identify any repair issues and undertake maintenance tasks whilst applying the correct manufacturer's technical information required and in conformance with legislative requirements. They work under generic supervision either within a workshop or on site but are expected to be both autonomous and the technical focal point during any maintenance activity.

Further details on the knowledge, skills and behaviours associated within the occupational standard are in Appendix 1 and are also accessible on the IfATE website[1].

[1] **https://www.instituteforapprenticeships.org/apprenticeship-standards/construction-equipment-maintenance-mechanic/**

Standard information

Level: 2

Reference: ST0805

Approved for delivery: 7 August 2020 (updated: 26 January 2023)

Route: Engineering and manufacturing

Typical duration to gateway: 24 months (this does not include the EPA period)

Employers involved in creating the standard: A Plant, CRH Plant, Ainscough Cranes, Hanson, Long Water Gravel, Selwood, Keltbray, A P Webb, Speedy Hire, Steve Foster Cranes, HTC Wolffkran, Eagle Plant, Clancy Docwra, Day Group, Wirtgen, Hope Cement, Volvo, Camfaud, William Birch, Chepstow International Plant, Fox (Owmby) Ltd, Qunito Crane Hire, Roger Bullivant, AFI Group, Crowland Cranes, Lavendon Group.

External Quality Assurance Provider: Ofqual

Entry requirements

Individual employers will set their own criteria; typically, 3 GCSEs (or equivalent) at grade C or above, including English, maths and a science or technology based subject.

Progression opportunities

Apprentices who successfully complete their Construction Equipment Maintenance Mechanic Apprenticeship are likely to attain, or be able to work towards roles such as: Maintenance engineer, Mobile engineer, Plant fitter, Plant mechanic, Workshop fitter.

On-programme requirements

A summary of the on-programme requirements for each apprentice is outlined below.

- Training to develop the knowledge, skills and behaviours (KSBs) of the occupational standard.
- All Apprentices must spend a minimum of 18 months on-programme.
- All Apprentices must spend a minimum of 20% of on-programme time undertaking off-the-job training.
- Compilation of a portfolio of evidence to outline apprentices' work during their apprenticeship programme, mapped to the KSBs from the occupational standard**.**

Registration, gateway and booking

Registration with Open Awards

Registration is the point at which an employer signals that it has selected Open Awards as their end-point assessment provider. Employers are encouraged to register their apprentices with Open Awards, through the training provider, as soon as possible. Our EPAO number is: **EPA0565**

Registrations can be made by providers via the EPA Section of Open Awards' Secure Portal. Early registrations enable Open Awards to initiate early dialogue to ensure arrangements can be planned, such as IEPA availability, to ensure end-point assessment is delivered as smoothly as possible in a timescale that supports the employer's planned gateway date. It also enables the training provider to access a range of practice and preparation materials, so they and the employer can support the apprentice prepare for end-point assessment.

Please note that Open Awards are only able to accept registrations from training providers who are currently on the Register of Approved Training Providers (RoATP).

In line with the Education & Skills Funding Agency's (ESFA) requirements, the employer must inform Open Awards of the planned gateway and end-point assessment dates at least three (3) months in advance.

Gateway

Gateway is the point at which the employer reviews their apprentice's knowledge, skills and behaviours, and formally confirms the apprentice has reached occupational competency, completed all the mandatory elements of their apprenticeship programme and are ready for end-point assessment. The training provider may support the employer in making this decision, but the decision is made by the employer, with the apprentice also confirming they are ready for end point assessment.

End-point assessment must be completed by an independent End-point Assessment Organisation (EPAO) selected by the employer, such as Open Awards, from the ESFA's Register of End Point Assessment Organisations (RoEPAO).

The end-point assessment period should only start, and the end-point assessment arrangements confirmed, once the employer is satisfied that the apprentice is consistently working at or above the level of the occupational standard, all of the pre-requisite gateway requirements for EPA have been met and that they can be evidenced to Open Awards. For this standard, end-point assessment must be completed within a period lasting a maximum of three (3) months, beginning when the apprentice has met the end-point assessment gateway requirements.

Gateway requirements

The training provider must provide Open Awards with all required evidence to enable Open Awards to undertake the necessary gateway checks. This evidence includes:

- a fully completed and signed Gateway agreement and authenticity form.
- apprentices without level 1 English and maths will need to achieve this level and apprentices without level 2 English and maths will need to take the tests for this level prior to taking the end-point assessment. The ESFA maintains a list of current and prior qualifications accepted as meeting the minimum English and maths requirements for apprenticeships at Level 2 and above. The most current list can be found on the ESFA website[2]. For those apprentices 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 qualifications are an alternative to English qualifications for whom this is their primary language.
- apprentices must have completed the minimum apprenticeship on-programme duration (18 months from the start date)
- all Apprentices must spend a minimum of 20% of on-programme time undertaking off-the-job training
- for this standard, apprentices are also required to have completed a portfolio of evidence.

Open Awards cannot accept end-point assessment booking requests until the gateway checks have been satisfactorily completed, so failure to submit all the necessary information or evidence will delay this process. Open Awards will contact the training provider if the information or evidence is missing or insufficient, so that this can be rectified as quickly as possible. Open Awards aims to complete gateway checks **within five (5) working days** from receipt of the gateway declaration and authenticity form, subject to provision of all necessary information and ancillary evidence.
Once gateway checks have been successfully completed, Open Awards will confirm provisional bookings or schedule subsequent bookings.

Booking

Bookings can be made by providers via the EPA Section of Open Awards' Secure Portal. As per ESFA guidance, Open Awards requires at least three (3) months advance notice of the potential gateway date. However, training providers may make provisional bookings at any point following Open Awards acceptance of an apprentice registration.

Open Awards will endeavour to accept and schedule bookings for end-point assessment to meet the expressed preference dates of the employer wherever possible. However,

[2] **https://www.gov.uk/government/publications/english-and-maths-requirements-in-apprenticeship-standards-at-level-2-and-above**

any provisional booking cannot be confirmed or scheduled by Open Awards until gateway checks have been successfully completed. The exception is the online multiple choice test when five (5) working days' notice is required.

Cancelling or rescheduling a booking

Provisional bookings can be re-scheduled or cancelled by providers via the EPA Section of Open Awards' Secure Portal. Confirmed bookings **up to 10 workings days** before the assessment day can be re-scheduled at no charge. Confirmed bookings cancelled or re-scheduled with **less than 10 workings days'** notice will incur a charge in line with Open Awards fees policy[3].

Assessment plan version

Open Awards will undertake end-point assessment in line with the requirement of the current version of the assessment plan or in line with IfATE directions. Training providers and employers must contact Open Awards to discuss any instance where they believe it is appropriate for assessment to be undertaken in line with a historic/ previous version of the assessment plan. Because Open Awards may need to liaise with either IfATE or the External Quality Assurance Provider to determine whether this is allowable, training providers and employers should be aware this may delay the ability of Open Awards to undertake end-point assessment until resolved.

[3] Available on the Open Awards Secure Portal **https://portal.openawards.org.uk/Login.aspx**

Portfolio of evidence

Apprentices on this standard are required to develop and submit a portfolio of evidence. The portfolio must be submitted to Open Awards alongside other gateway evidence. Open Awards preferred format is an electronic logbook either uploaded by the training provider to their Open Awards SharePoint folder, or else a login provided to enable Open Awards to access the portfolio. Training providers should contact Open Awards to discuss alternative arrangements, e.g., where a paper-based or mixed portfolio is developed.

Apprentices should select their best possible evidence to reflect their current level of proficiency against the standard at the point they undertake their interview. The portfolio is not assessed and will only be used to support the interview. However, where the content requirements (p55) are not met, or the evidence not authenticated, the portfolio will be returned by Open Awards to the apprentice, via the training provider, for amendment and subsequent resubmission. This resubmission will not be considered as an assessment attempt. Resubmission of the portfolio will not constitute either a resit or retake of the interview. However, this will delay completion of the gateway checks therefore, training providers and employers are encouraged to ensure the portfolio requirements are met before submission at gateway.

Open Awards have developed supporting evidence tracking documentation to support apprentices, training providers and employers to meet the portfolio content requirements set out in the assessment plan. This documentation is available from the Open Awards Secure Portal:

ST0805-PAS	Portfolio authenticity statement – Completion of this is a mandatory requirement.
ST0805-ECRS	Evidence and KSB Criteria Reference Sheet (Portfolio) – Completion of this is a mandatory requirement as it shows the evidence requirements within the assessment plan have been met; however, Open Awards will accept any alternative equivalent approach demonstrating that the logbook content and structure requirements set out below have been met. The form may also help the independent end-point assessor (IEPA) to prepare for the interview by giving apprentices the opportunity to signpost to where they believe appropriate evidence may be found.

Portfolio of evidence content and structure

The portfolio of evidence must:

- be compiled during the on-programme period of the apprenticeship
- contain evidence related to the KSBs assessed by assessment method 2: Interview underpinned by a portfolio of evidence
- typically contain 14 or more discrete pieces of evidence
- cover the 22 occupational duties outlined in the standard.

Evidence may be used to demonstrate more than one KSB. The document **ST0805-ECRS** (seen in Appendix 4, p55) can be downloaded from the Open Awards Secure Portal; this should be used to map on-programme evidence against the relevant KSB criteria demonstrated as set out in the standard. All KSB criteria should be demonstrated in the portfolio.

The portfolio will not be assessed by Open Awards, nor will Open Awards provide feedback on evidenced work, but will be used by the IEPA to prepare for the apprentice's interview.

The portfolio can be made up of a collection of evidence in a variety of formats, including written, audio and video. Sources may include:

- workplace documentation/records for tasks and projects that the apprentice has directly worked on, for example;
  - projects managed by the apprentice
  - relevant workplace policies/procedures
- witness statements
- annotated photographs
- GDPR and safeguarding compliant video clips (maximum total duration 10 minutes); the apprentice must be in view and identifiable
- annotated photographs of the apprentice carrying out relevant tasks
- reports, minutes, action logs
- observations by the apprentice's manager or mentor
- feedback (managers and peers)
- performance reviews.

Mock assessment activities are not considered acceptable evidence to be included within the portfolio.

Authenticity of apprenticeship work

The evidence provided must be valid and attributable to the apprentice. The portfolio of evidence must be submitted with a statement from the employer and apprentice confirming this (form **ST0805-PAS** in Appendix 5, p61).

What to avoid

Portfolio evidence should **not** include reflective accounts or any methods of self-assessment **unless** this is part of the KSB being assessed, i.e., a KSB criterion directly indicates reflective practice knowledge and/or skills. Any employer contributions should focus on direct observation of performance (for example witness statements) rather than opinions.

Portfolio of evidence submission

The portfolio must be submitted at gateway alongside the gateway evidence. Because the portfolio must be completed as a gateway requirement, all evidence must be generated and dated pre-gateway. No post-gateway dated evidence can be included.

Where post-gateway evidence is included within the portfolio, the content requirements are not met or the evidence is not authenticated, the portfolio will be returned by Open Awards to the apprentice via the training provider for amendment and subsequent resubmission. Resubmitted portfolios must be submitted to Open Awards to enable the gateway checks to be completed.

Identification checks

Open Awards requires the apprentice to present photographic identification to an Open Awards invigilator or IEPA immediately prior to each assessment on each assessment day. This is a requirement to ensure Open Awards can confirm an individual completing an assessment is the person they are claiming to be.

The following are acceptable forms of evidence of an apprentice's identification:

- a valid passport (any nationality)
- a signed UK photo card driving licence
- valid warrant card issued by HM Forces or the Police
- other photographic ID card, e.g., employee ID card (must be current
- employer), student ID card, travel card
- UK biometric residence permit.

Where this identification is not available to be checked, the assessment will not be allowed to commence.

Where an apprentice does not have access to the necessary identification or where the name on the identification does not match the name registered with Open Awards, the training provider must contact Open Awards to make arrangements for alternative or additional authentication checks to be made.

Data management

Open Awards has a responsibility under the Data Protection Act to ensure that learners and apprentices are informed of how their information is processed and shared.

Open Awards collects and processes personal learner information for the purpose of: registering learners and apprentices, and awarding learner and apprentice achievements; exercising its functions; and meeting its responsibilities, both statutory and otherwise.

Further information on the personal data and information shared with Open Awards and how we use it and who we share it with can be found in the Privacy Notice: Learner Information which is on the Open Awards website[4].

Whilst we endeavour to collect only that data for which there is a legal or sound business requirement and to ensure the integrity of the data, we strongly encourage customers to contact us if you believe any data to be incorrect.

Any concerns can be sent to Open Awards by emailing **enquiries@openawards.org.uk**

In compliance with ESFA Conditions for being on the register of end-point assessment organisations, Open Awards must retain information about the EPAs undertaken and payment received for six (6) years after the activity took place. This will include details of what assessments were undertaken, against which versions of the standard and assessment plan, when and by whom, along with assessment outcomes and evidence of the internal quality assurance of those assessments. Open Awards is also required to share end-point assessment information with the External Quality Assurance Provider to ensure they are able to undertake their regulatory role. The External Quality Assurance Provider for this standard is Ofqual.

For the purposes of the Data Protection Act and General Data Protection Regulation (GDPR) 2018, Open Awards is the data controller for personal information processed by the organisation.

[4] [4] https://openawards.org.uk/centres/policies-and-procedures/

Assessment

The EPA consists of three assessment methods (Elements) which are individually graded.

- Assessment Method 1: Practical assessment with questions
- Assessment Method 2: Interview (underpinned by a portfolio of evidence)
- Assessment Method 3: Multiple Choice Test

Assessment preparation

A sample knowledge test is available to support training providers and employers post-gateway to ensure apprentices are well prepared for their EPA experience. They are not intended to be used to measure proficiency pre-gateway or to support gateway decisions. These materials are accessible to training providers through the Secure Portal.

Assessment specifications (Appendix 2) and assessment records (Appendix 5 and appendix 6) are also available to support training providers and employers post-gateway to prepare Apprentices.

Order of assessment methods

The assessment methods can be delivered in any order. The result of one assessment method does not need to be known before starting the next.

Assessment window

EPA assessment components must last for a minimum of one week and are typically undertaken within a period of six months from the gateway.

Assessment Method 1: Practical assessment with questions

Overview

A practical assessment with questions involves an independent end-point assessor (IEPA) observing an apprentice undertaking a series of set tasks in a simulated environment and asking questions. The simulated environment must closely relate to their natural working environment. It can also be undertaken in the apprentice's natural working environment. The IEPA will ask questions in relation to KSBs that have not been observed although these should be kept to a minimum.

The primary purpose of this assessment method is to ensure the apprentice can demonstrate all of the KSBs assigned to this assessment method. This is a holistic assessment method, where the KSBs are assessed across all four tasks. Alongside the specific tasks outlined below, the apprentice must be given the opportunity to demonstrate KSBs relating to the wider considerations that need to be taken when carrying out the tasks. This includes health and safety issues, risk assessment and environmental considerations.

The following **four tasks** must be observed during the practical assessment:

Task 1. Remove, dismantle, refit and check functionality - Remove and dismantle (or partially dismantle) either a working power unit, a transmission unit, hydraulic powered or an electrically-powered motor from an item of plant and refit on completion of the rebuild and check for correct function. The activity includes preparing the area and configuring the machine for the activity. **(5 hours)**

Task 2. Check, test, repair and restore - With one or more given components such as a hydraulically, electrically or pneumatically operated unit with known faults, carry out checks and basic testing to establish the fault or faults, disassemble and carry out the repairs and restore the component to a fully functioning condition. **(2 hours)**

Task 3. Static and functional checks - Carry out a range of static and functional checks to ensure the plant or equipment is safe, fit-for-purpose and in a condition to perform in the workplace according to manufacturer's requirements. **(70 minutes)**

Task 4. Welding/thermal joining - Carry out a repair on or modify a component from an item of construction-based plant where welding or other forms of thermal joining are required along with fabrication activities to effect a repair or modification according to a given specification. **(2 hours)**

Questions will be asked at the end of each task (within the time allocated for the task), in order not to disturb the apprentice while they are working. The purpose of the

questioning is to assess underpinning knowledge, confirm the apprentice's understanding and to draw out the rationale for their decisions.

The IEPA will observe the apprentice carrying out these activities and record evidence, including answers to questions, that meets the KSB grading criteria shown in the Practical Assessment - Assessment Record (Appendix 5, p61) relevant to this End-point assessment method. Evidence of the following elements are included:

- relevance, sufficiency and completeness of the apprentice's work
- quality of the observed apprentice's performance during activities
- quality of the apprentice's answers to any IEPA questions.

The IEPA will use the full time available for questioning to allow the apprentice the opportunity to evidence occupational competence at the highest level available, unless the apprentice has already achieved the highest grade available.

The IEPA will assess the evidence observed and responses to questions holistically and will make a grading decision.

Preparing for the practical assessment with questions

The employer must discuss scheduling an IEPA for the practical assessment along with the other assessment components with Open Awards delivery team to ensure time windows and resources can be reasonably allocated to meet the needs of all parties.

Open Awards expects the observation will be conducted in the apprentice's normal working environment to take account of the occupational context in which the apprentice operates. The employer is responsible to provide the resources and availability for the practical activities.

The IEPA will always attend the practical assessment with questions in person, unless this is not possible due to restrictions imposed by the venue (e.g., with a secure estate or specific health settings). In these exceptional circumstances, agreement for a video recording of the session to be submitted may be approved by Open Awards, subject to confidentiality and GDPR legal requirements. Where these exceptional circumstances exist, Open Awards expects to be informed prior to the gateway to be able to make an informed decision as to whether the proposed observation activity is appropriate. Where a video submission is approved arrangements will be made for it to be viewed by the IEPA alongside the apprentice, to replicate the observation process. Questions can then be defined for clarification in the same way as they would be after a normal, in person observation.

Apprentices should be encouraged to ask questions and confirm understanding of what is required of them during the pre-assessment discussion when the IEPA outlines what is required of them. The practical assessment tasks reflect frequent scenarios from the apprentice's normal work activities. The structure of the practical assessment should

require the apprentice to demonstrate they can work safely whilst conducting inspection, fault finding, removal & replacement, set-up and repair activities.

Assessment conditions

The practical observed assessment will be delivered in a strictly controlled environment by an independent end-point assessor (IEPA).

Practical assessment with questions includes **four (4)** discrete tasks that overall will take **10 hours** and **10 minutes** to complete as follows:

- Task 1 – 5 hours (plus **30 minutes** at the IEPA's discretion)
- Task 2 – 2 hours (plus **12 minutes** at the IEPA's discretion)
- Task 3 – 70 minutes (plus **7 minutes** at the IEPA's discretion)
- Task 4 – 2 hours (plus **12 minutes** at the IEPA's discretion).

The IEPA has the discretion to increase the time of the practical assessment with questions by up to **10%** to allow the apprentice to complete a task or respond to a question. The additional time can be applied as indicated in the bullet points in the paragraph above. The IEPA will **not** inform the apprentice whether they have additional time or how much additional time may be available. The apprentice should **not** assume that they will receive any additional time.

The practical assessment with questions may be split into discrete sections held over a maximum of **2 working days** to ensure each task is conducted with due care and attention. Breaks in between tasks may be taken, and where these occur, they will not count towards the total assessment time.

The IEPA will supervise apprentices during breaks in order to maintain security of the assessment in line with Open Awards malpractice policy. IEPAs must ensure apprentices don't have opportunity to observe, hear or interact with other apprentices who are being assessed.

Observation of the practical assessment will be undertaken on a one-to-one basis and the IEPA is only able to assess one apprentice at a time. The IEPA must be non-obtrusive while the apprentice is carrying out activities, i.e., they must observe the apprentice carrying out the work and only ask questions at the end of each Task.

The independent assessor must ask a minimum of **13 questions** according to the following proportions:

- Task1 - minimum **5 questions** in **15 minutes**
- Task 2 - minimum **3 questions** in **10 minutes**
- Task 3 – minimum **3 questions** in **10 minutes**
- Task 4 – minimum **2 questions** in **6 minutes**.

The IEPA may ask additional follow-up questions where clarification is required. The IEPA will ensure that there are no other apprentices in the immediate area while questioning is taking place.

The questions are chosen or adapted from a question bank developed and maintained by Open Awards. Open Awards will provide training and guidance for IEPAs on how to select the most relevant questions and how flexible they can be in amending the questions or asking follow up questions in order to best draw out the apprentice's knowledge, skills and behaviour. IEPAs must ensure that apprentices have the opportunity to demonstrate their knowledge, skills and behaviours at the highest available grading point for each KSB criterion or set of KSB criteria.

Assessment Method 2: Interview (underpinned by a portfolio of evidence)

The interview is designed to enable the apprentice to demonstrate how they have combined their skills, technical knowledge and behaviours in order to carry out their occupational role effectively and safely. The apprentice should expect to discuss evidence of their work as recorded in their portfolio of evidence compiled from job related tasks.

The apprentice and the IEPA will have a two-way dialogue, allowing the apprentice to evidence the KSBs assigned to this end-point assessment method and focusing on the following **nine (9)** topics and themes:

- Types and uses of construction equipment.
- Compliance, regulations and best practice.
- Dealing with hazards.
- Diagnosing, checking and testing.
- Tools and resources.
- Communicating and reporting.
- Producing components.
- Teamwork and working with others.
- Assertiveness and Resilience.

The IEPA will ask a minimum of **14** open competence-based questions drawn and adapted from an Open Awards developed and maintained question bank.

The IEPA will draw on appropriate evidence from the apprentice's portfolio to underpin the discussion. The portfolio itself will not be assessed, but it must meet a minimum level of quality to enable the professional discussion to take place.

Preparing for the interview

The IEPA will conduct a thorough review of the apprentice's submitted portfolio of evidence in order to plan and structure the interview. To do this, IEPAs will draw on the training and guidance provided by Open Awards. IEPAs will also use a question bank prepared and maintained by Open Awards. The apprentice must be given at least **5 working days'** notice of the date and time of the professional discussion.

Assessment conditions

The interview will be undertaken on a one-to-one basis between the IEPA and the apprentice. The duration of the technical interview will be **90 minutes.** However, the IEPA can increase the overall time by up to **9 minutes**, but only to allow the apprentice to complete the answer they are giving. The IEPA will **not** inform the apprentice whether they have additional time or how much additional time may be available. The apprentice should **not** assume that they will receive any additional time.

The professional discussion can and should be undertaken remotely through video conferencing (e.g., MS Teams or Zoom). Further details of this option are available from

Open Awards. Further details of this option are available from Open Awards. The records will be filled out during the interview by the IEPA and then retained by Open Awards.

As the professional discussion only involves the apprentice and the IEPA, neither the employer nor provider are required to attend.

Assessment Method 3: Multiple choice test

Overview

This is a computer-based test which will be undertaken online. This may be invigilated at the test premises or remotely invigilated by Open Awards. It is a closed book test so the apprentice may not use or refer to any books, notes or other materials during the test.

Apprentices have 60 minutes maximum to complete the 30 multiple-choice questions in which they will demonstrate the KSBs assigned to this assessment method (see Appendix 2).

Each of the 30 multiple-choice questions will have four possible answers, of which only one is correct scoring 1 mark each.

Any incorrect or missing answers must be assigned zero marks. The total number of marks available for the knowledge test is 30.

The apprentice will be awarded a pass or fail grade. A score of 21 (or higher) out of 30 equates to a pass grade.

Preparing for the knowledge test

The apprentice may be booked in for the knowledge test as soon as Open Awards have confirmed that the Apprentice has successfully passed through Gateway. The apprentice may be provided with the sample knowledge test (available on the Secure Portal) in order to familiarise themselves with the nature and style of the test and the questions which cover the same knowledge areas as their live test. The sample knowledge test will consist of 30 knowledge questions.

Assessment conditions

The knowledge test will consist of 30 multiple choice questions delivered online in a strictly controlled environment and in the presence of an invigilator or web proctor in line with Open Awards Remote Invigilation Terms and Conditions.

Grading

Mapping of KSBs against assessment methods

Appendix 1, p38, shows each assessment method and the KSBs from the apprenticeship standard that are assessed by that method. Additionally, appendix 2, p42, and appendix 1, p38, detail the breakdown of the KSBs assessed in each of the key areas within each EPA method and their associated grading criteria.

Grading individual assessments

Practical assessment with questions

Apprentices must meet **all** the pass criteria to gain a pass.

Apprentices must meet **all** the distinction criteria to gain a distinction.

Interview (underpinned by a portfolio of evidence)

Apprentices must meet **all** the pass criteria to gain a pass.

Apprentices must meet **all** the distinction criteria to gain a distinction.

Multiple choice test

Apprentices must score 21 or higher to gain a pass.

Aggregation of individual assessment grades into an overall grade

Performance in the EPA will determine the apprenticeship grade of fail, pass or distinction.

Apprentices who fail one or more assessment method will be awarded an overall EPA 'fail'.

To achieve an overall EPA 'pass', apprentices must achieve a pass in all the assessment methods. All assessment methods are weighted equally in their contribution to the overall EPA pass grade.

To achieve an overall EPA 'distinction', apprentices must achieve a 'distinction' in both assessment methods that have a possible 'distinction' grade, i.e., Assessment Method 1: Practical assessment with questions, and Assessment Method 2: Interview (underpinned by a portfolio of evidence).

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 – Practical assessment with questions	**Assessment Method 2 – Interview**	**Assessment Method 3 – 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
Distinction	Pass	Pass	Pass
Pass	Distinction	Pass	Pass
Distinction	Distinction	Pass	Distinction

Reasonable adjustments and Special considerations

Open Awards is committed to ensuring access to fair assessment for all learners and to protecting the integrity of assessments and qualifications.

There may be circumstances whereby arrangements need to be made to take account of particular learners' requirements in order to ensure that this is achieved without giving any unfair advantage over other learners.

The Reasonable Adjustments and Special Considerations Policy and Procedures, sets out the principles which should be followed when making decisions about adjustments to assessment. It outlines Open Awards' reasonable steps to ensure it avoids disadvantage (directly or indirectly) in line with the requirements of The Equality Act 2010 (Disability) Regulations 2010. The policy and procedures are accessible through the Open Awards Secure Portal.

Reasonable adjustments

Any action that helps to reduce the effect of a disability or difficulty that places a learner at a substantial disadvantage in the assessment situation. Reasonable adjustments are adjustments made to an assessment for a qualification so as to enable a disabled learner to demonstrate his or her knowledge, skills and understanding to the levels of attainment required by the specification for that qualification.

Reasonable adjustments must not affect the reliability or validity of the assessment outcomes but may involve:

- changing the usual assessment arrangements, e.g., allowing a learner extra time to complete an assessment activity
- adapting assessment materials e.g., by providing large print or providing materials in Braille
- providing assistance during an assessment e.g., by providing a trained signer, interpreter or a reader
- changing the assessment method e.g., from a written assessment to a spoken assessment
- using assisted technology such as screen reading or a voice activated software.

Reasonable adjustments must be approved and set in place before the assessment takes place. The work produced by the learner will be assessed in the same way as all other learners.

Where the employer and training provider believe reasonable adjustment(s) may be required, this can be identified at the registration stage. Open Awards requires a minimum of 90 days' notice of any request for reasonable adjustments so this can be considered and where approved, arrangements made.

Special considerations

Adjustments which may be applied after an assessment where the learner has encountered exceptional circumstances that have disadvantaged them during their assessment.

The assessment plan for the apprenticeship standard defines permissible special considerations and the circumstances surrounding the apprentice's End-point assessment that fall within this definition.

Cancellations or rescheduled assessments

Cancellation by the apprentice, training provider or employer

Provisional bookings can be re-scheduled or cancelled at no charge. Confirmed bookings can be re-scheduled at no charge **up to 10 workings days** before the assessment day.

Confirmed bookings cancelled or re-scheduled with **less than 10 workings days'** notice will incur relevant costs associated to the booking.

The 5% apprentice registration fee is non-refundable regardless of withdrawal date.

Cancellation by Open Awards

In the unlikely event that a confirmed booking has to be cancelled by Open Awards, it will be rescheduled as soon as possible for a mutually convenient time. There will be no additional charges associated with the rescheduled assessment.

Confirmation of results

Assessment results will be made available to providers via the EPA Section of Open Awards' Secure Portal. Results of assessment will normally be provided to the training provider **within 10 working days** of the assessment being undertaken. The exception to this is the online multiple choice test where the result notification will normally be provided **within 72 hours** of the assessment taking place.

Resits and Retakes

Open Awards provides resit and retake opportunities in line with ESFA requirements unless the assessment plan associated with the apprenticeship contains alternative requirements.

Apprentices who fail one or more assessment method will be offered the opportunity to take a resit or a retake. Open Awards will provide feedback alongside the result notification to all apprentices who fail an assessment method. This feedback will be provided via the training provider, normally **within 10 workings days** of the assessment taking place. The exception to this is the online multiple choice test where only the result notification will be provided and this will normally be **within 72 hours** of the assessment taking place.

Where the result notification suggests a retake may be appropriate, the ESFA recommend the employer and training provider consider a supportive action plan that responds to the performance weaknesses identified within the feedback. This action plan should clearly state the nature and extent of the re-training and include the estimated time to prepare the apprentice for the retake. When a retake is booked, Open Awards will require confirmation from the training provider that the apprentice has received further training and is ready to be assessed.

A resit involves the apprentice attempting one or more failed assessment components again, without the need to undertake further training.

Open Awards normally require a **minimum of 10 workings days'** notice when booking a resit or a retake. The exception is the online multiple choice test when **five (5) workings days'** notice is required.

The number of resits and retakes that can be taken by an apprentice will normally be at the discretion of the employer. The ESFA recommends a limit of two (2) resits or retakes, however, more than two (2) resits or retakes may be taken if available, or unless otherwise specified or limited within the assessment plan.

Resits or retakes are only to be taken in the event of a failure. A resit or retake cannot be taken with the intention of increasing the original grade if an apprentice has passed their

EPA. Therefore, feedback will not normally be provided to apprentices who achieve a pass or higher.

The maximum grade that can be achieved for a resit or retake is a pass, unless Open Awards has determined there are exceptional circumstances. Where an apprentice believes exceptional circumstances impacted on their initial assessment attempt, they must submit a formal request with supporting evidence for exceptional circumstances to be considered, directly to Open Awards **within five (5) working days** of receiving the assessment decision.

The same IEPA who undertook the initial assessment attempt may be allocated by Open Awards to assess an apprentice's resit or retake. This may be a requirement of the assessment plan. The allocation of IEPAs to assessments will be taken by Open Awards based upon the requirements of the assessment plan or operational considerations.

Appeals and Complaints

Open Awards is committed to ensuring that all assessment decisions are consistent, fair and based on valid judgements made by independent IEPAs.

If an apprentice is satisfied with their result but seeks information as to why a specific grade was awarded, they can request formal feedback through their training provider. This feedback will be limited to justification of the decision and will not be developmental in nature (i.e., indicate how they may have achieved a higher grade). This feedback may take **up to 20 working days** to be provided. Further details are available from Open Awards.

If an apprentice is not satisfied with their result, they can request an enquiry about results which is an informal appeal. Open Awards will review the documentation for administrative errors and correct these if identified. An enquiry about results must be made by the apprentice **within 10 working days** of notification of the results concerned.

Alternatively, or subsequent to an enquiry about results, if an apprentice is not satisfied with their result, they may lodge an appeal. Appeals can be made by the training provider on behalf of the apprentice, but they must have the permission of the apprentice to do this.

Appeals made in respect of the final overall grade will result in a delay to the completion certificate being requested by Open Awards. For further details regarding the process, timelines and fees, please refer to Open Awards' Enquiries and Appeals Policy and Procedures which can be found on the Portal.

Completion and certification

Open Awards will issue a summary of results following successful completion of all EPA assessments. This will be issued to the apprentice via the provider and show the grade associated with each assessment, alongside the overall grade and the date this was awarded.

Open Awards will also request the apprenticeship completion certificate from the IfATE on behalf on an apprentice once they have completed their apprenticeship. As part of the gateway declaration form an apprentice is required to give Open Awards permission to do this on their behalf. Without this permission Open Awards is unable to claim the certificate.

Open Awards will request the certificate once the apprentice has received and agreed the final grade. Where the apprentice does not formally agree the final grade, Open Awards will assume it is agreed once the window for an enquiry about results or appeal is extinguished (**10 working days** from the notification of results). Requests for the certificate are then made **within 20 working days** and in most instances, sooner. IfATE normally send the completion certificate directly to the employer by recorded delivery; this can take **up to 15 working days** to arrive from the date it is requested.

Quality assurance

Internal quality assurance

Quality assurance is at the heart of Open Awards' practices and we follow suitably rigorous processes to ensure that the integrity of our assessments is maintained.

Internal quality assurance is the process of reviewing and evaluating assessment practices and decisions to ensure that:

- an identified individual is responsible for coordinating internal quality assurance processes
- there are clear and documented roles and responsibilities for all those involved
- all learners are assessed accurately, fairly and consistently to the right standard
- internal quality assurance is structured and incorporates all of the requirements set out in the assessment plan associated with the apprenticeship standard
- assessment tasks and learner work are sampled appropriately
- good practice is promoted through internal standardisation events and quality assurance meetings
- decisions are supported by full and clear records and action plans that are followed
- internal processes are transparent and regularly evaluated.

External quality assurance

External quality assurance for this apprenticeship standard is undertaken by Ofqual.

Maladministration and Malpractice

Maladministration is defined as any activity, neglect, default or other practice that results in an apprentice, training provider or employer not complying with the specified requirements for delivery of end-point assessment.

Malpractice is any act, default or practice which:

- compromises, attempts to compromise, or may compromise, the process of assessment/ examinations, the integrity of any end-point assessment activity or the validity of an assessment result or certificate, including maladministration
- damages the authority, reputation or credibility of Open Awards or any officer or employee
- involves a failure by an apprentice, training provider or employer to provide Open Awards with such necessary information as required to enable it to investigate allegations of suspected malpractice also constitutes malpractice.

An apprentice, training provider or employer must report any allegation of suspected malpractice/ maladministration to Open Awards. Failure to report allegations of malpractice/ maladministration can lead to assessment results not being conferred and certification claims not being processed, and future registrations not being accepted.

Further information is available within Open Awards' Malpractice and Maladministration Policy and Procedures, including how Open Awards will manage alleged or suspected malpractice or maladministration.

Where Open Awards is satisfied on the balance of probabilities that an allegation is substantiated, it reserves the right to impose a range of sanctions on an apprentice and/ or training provider and/ or an employer, depending on the seriousness of the situation and the risk to the interests of learners and the integrity of the end-point assessment and the effect on public confidence in Open Awards. Further information can be found within Open Awards' Sanctions Policy.

Open Awards will ensure that in most cases alleged malpractice is kept confidential between itself and those directly impacted. However, in cases of serious malpractice, Open Awards may exchange information with the regulators, other end-point assessment organisations and other appropriate authorities.

Open Awards Policies and Procedures

Current versions of the following Open Awards policies and procedures, relevant to end point assessment are accessible to training providers through the Secure Portal. Employers and apprentices can obtain copies from the relevant training provider, or can be obtained directly by contacting Open Awards.

- End Point Assessment Pricing Policy
- Reasonable Adjustments and Special Considerations Policy
- Data protection
- Enquiries and Appeals Policy and Procedures
- Complaints Policy
- Malpractice and Maladministration Policy and Procedures
- Equality and Diversity Policy
- Sanctions Policy
- Safeguarding Policy
- Conflict of Interest Policy
- Fair Access policy

In addition, the current version of the following relevant document may be obtained by training providers, employers or apprentices by contacting Open Awards directly:

- Instructions for Conducting Controlled Assessment Remotely

Open Awards recommends that local copies of policies and procedures are not made and referred to as these may not be current.

Fees and Charges

Open Awards standard fees and charges for end-point assessment, including resists and retakes are set out the schedule of fees. The current schedule can be found on the Open Awards' website.

Support

The Open Awards website **www.openawards.org.uk** is the best source for general information with full listings of our qualifications, news, events, assessment information, policies, and details of our support services.

In addition, our experienced customer service team can be contacted on 0151 494 2072 or via email **enquiries@openawards.org.uk.**

Glossary

Assessment	The process of making judgements about the level of occupational proficiency an apprentice can demonstrate when measured against the knowledge, skills and behaviours set out in the standard.
Assessment Criteria	Assessment criteria describe what a learner should be able to do in order to demonstrate competence (i.e., pass).
Authentic	Evidence must be the apprentice's own work.
Completion certificate	The certificate issued by IfATE which demonstrates an apprentice has successfully completed their apprenticeship.
Diversity	Acknowledging that each individual is unique and recognising individual differences, e.g., culture, ability, gender, race, religion, wealth, sexual orientation, or any other individual characteristic.
EQA	External Quality Assurance.
Equality	Fair treatment for all regardless of differences, e.g., culture, wealth, race, gender, ability, sexual orientation or any other group characteristic.
Evidence	How an apprentice demonstrates knowledge, skills or behaviour that can be used to make a judgment of achievement against criteria.
Fair	Ensuring that everyone has an equal chance of getting an objective and accurate assessment.
Gateway	The point at which the employer decides the apprentice is occupationally competent and ready to undertake end-point assessment.
Holistic	Holistic assessment is identifying how evidence can relate to and be cross referenced to other units rather than taking a unit by unit approach.
Independent assessment	Assessment decisions made by an IEPA and end-point assessment organisation who have no relationship with the apprentice, training provide or employer and therefore, have no interest in the assessment result.
Independent end-point assessor (IEPA)	The individual recruited and trained by the Awarding Organisation who assesses the apprentice during end-point assessment.
IQA	Internal Quality Assurance.
Learning Outcomes	Learning outcomes describe what an apprentice should know and understand by the end of a unit.

Reliable	Reliable evidence indicates that the apprentice can consistently perform at this level. A reliable method of assessment will produce consistent results for different IEPAs at each assessment.
Simulation	Where simulation is allowed it must replicate working activities in a realistic workplace environment. A realistic working environment is one which replicates what is likely to happen when an individual is carrying out their normal duties and activities at their employer's premises.
Sufficient	Enough evidence as specified in Evidence Requirements or Assessment Strategy.
Valid	Evidence must be relevant to the learning outcome and assessment criteria i.e., capable of measuring the knowledge or skills in question. For example, a written test cannot measure a candidate IEPA's ability to provide feedback to learners.
XAMS	The Open Awards platform used for online assessments and tests.

Appendix 1 Map of KSBs against assessment methods

Assessment Method 1: **Practical assessment with questions**

KSBs	Apprenticeship standard descriptor (knowledge)
K1	Types and appropriateness of information sources that would be used to provide repair and maintenance information on construction-based equipment.
K9	Fundamentals of health and safety control equipment, the principles of protection, how they should be used/worn and the different types that are available for specific activities or sectors.
K12	Methods of protecting work and working areas from damage, pollution, ingress of contaminants, inclement weather etc. and from controlling others entering or within the working area.
K19	Requirements and hazards of carrying out maintenance and servicing activities on construction and allied sector work environments, including how static and dynamic risk assessments, method statements, safe systems of work and permit to work systems are devised, implemented and used
K20	Machines, equipment and components handling, supporting, moving and isolation requirement and methods.
KSBs	**Apprenticeship standard descriptor (skills)**
S1	Working area preparation including workshop, facility and construction site-based to carry out maintenance activities on construction-based equipment.
S3	Configure, set, rig and prepare the plant or equipment safely and efficiently for the accessing, handling and removal of typical components, including the use of securing, jacking and lifting aids for supporting, securing and handling purposes.
S4	Disconnect, detach and/or remove a wide range of components and ancillary equipment Safely and efficiently from construction-based equipment, including using lifting, securing and handling aids.
S5	Dismantle worn, damaged or faulty parts, components and equipment.
S6	Overhaul, repair, renovate or repair worn, damaged or faulty parts, components and equipment.
S7	Replace and reinstate worn, damaged or faulty construction equipment parts.
S8	Assemble, connect, attach and refit a comprehensive range of new of repaired construction-based equipment components and ancillary equipment.
S9	Checks of static and operational performance on repaired construction-based equipment to ensure full safe functional activity prior to handover and re-commissioning to operation.
S10	Basic visual inspections on construction-based equipment both in a workshop, facility and site-based environments to identify potential issues and problems.
S13	Repair or modify existing components from construction-based equipment which requires heating, welding and brazing.
S15	Basic fault-finding and diagnostic activities on hydraulic, electric, mechanical and pneumatic systems to identify existing problems on construction-based equipment.

S17	Source, extract, identify, interpret and apply technical information from workshop-type manuals, given verbal information, organisational and manufacturers' literature and documentation, both on and off-line.

Assessment Method 2: **Interview (underpinned by a portfolio of evidence)**

KSBs	**Apprenticeship standard descriptor (knowledge)**
K2	Types, uses, core function and operation of construction-based equipment.
K8	Company procedures and responsibilities in relation to working with the sector, customer and organisational requirements for working within construction and alongside other colleagues.
K11	Environmental regulations and considerations for the containment and disposal of waste materials and equipment.
K13	Working timetables/deadlines, behaviours, technical abilities and working practices effects on customer relations and why.
K14	Methods and procedures for dealing with typical workplace and site-specific emergencies including fire, spillages, injuries and other task-related hazards.
K18	Techniques for checks and inspections, why typical components failures and causes of failure of relevant construction-based equipment.
K21	Different communication and record-keeping methods, when they are used and the consequences of poor communication and record keeping.
KSBs	**Apprenticeship standard descriptor (skills)**
S2	Identify, handle and store required resources, tools and equipment necessary to maintain construction-based equipment, reporting shortages/incomplete stock as.
S11	Specified testing activities on construction-based equipment both in a workshop, facility and site-based environments that ensure correct and safe functional effectiveness.
S12	Produce one-off components against given information and specifications that requires fabrication and welding activities.
S14	Install and commission construction-based equipment on site-based environments for operational activities.
S16	Complete organisational reports to confirm and document the work activity that was undertaken and inform employer and clients of work progress and problems encountered.
S18	Working activities in compliance with legislation, regulations, best practice and organisational requirements in the construction, industrial, quarrying, hire, port, mining and other allied environments.
KSBs	**Apprenticeship standard descriptor (behaviours)**
B1	Teamwork and independent working – working and engaging collaboratively and effectively with co-workers of different occupations to achieve requisite

	results safely and efficiently and safe working, and achieving those results through independence, resourcefulness and ability.
B2	Forming and enhancing customer relationships – as a front-line facing role, creating and maintaining effective working and commercial relationships.
B3	Time management – planning and delivering set tasks within specified targets and timescales.
B4	Assertiveness, confidence and resilience – dealing with unexpected situations, pressure to complete work safely and on time, resolutely advising less-informed parties of realistic completion times and the rationales of the processes involved.
B5	Respect – dealing equally and fairly with for example, people of different genders, disabilities, backgrounds, races, cultures and creeds; taking care of the environment.

Assessment Method 3: Multiple choice test

KSBs	Apprenticeship standard descriptor (knowledge)
K3	Principles, function, operation, application and limitation of energy sources and transmission methods eg. IC power units, hydraulics, pneumatics, electrics.
K4	Principles, function, application and types of components used on relevant equipment including those that provide direction, retardation, movement, power-transmission, heat, light and flow.
K5	Types, applications and limitations of fluids used in construction-based plant including oils/lubricants, cooling/heating and for power/work transmission.
K6	Mechanical principles and efforts that apply to construction-based plant that produce outcomes of work from an energy source.
K7	Aims and compliance requirements of regulations and legislation that apply to the maintenance and repair of construction-based equipment, typically including Health and Safety at Work Act, LOLER, COSHH, PUWER.
K10	Use of length/height, weight, area, volume, heat, pressure, electrical conductivity etc. for measuring and calculating, what units are used and with what typical types of measuring equipment.
K15	Tools and equipment relevant to tasks on construction-based equipment and why they need to be fit-for-purpose, calibrated, checked before use, maintained, and stored correctly on completion of activities.
K16	Safety requirements for dealing with pressurised systems, hot/cold systems, stored energy and electrical/electronic systems.
K17	Principles of material forming, cutting, shaping, joining and fitting.

K22	Additional training required for workplace activities including. manufacturer's specific, manual handling, COSHH and other environmental control requirements, working safely courses such as IOSH, CITB, PTS and the requirements of CSCS-badged certification.

Appendix 2 Assessment Specifications

Assessment Method 1: Practical assessment with questions	10 hours and 10 minutes (+61 mins at IEPAs discretion)
Assessment conditions • The practical assessment must be carried out in a controlled environment within the apprentice's workplace or other appropriate work area. • A suitable, clean and safe area must be provided to allow the activity to take place which entails a clean hard standing, sheltered from inclement weather and segregated from other vehicle movements. If conditions allow, the assessment area may be outdoors. • During the assessment all health, safety and environmental requirements along with lifting regulations and Approved Codes of Practice (ACOPs) must be adhered to. • The venue must be fully equipped for a construction equipment maintenance mechanic environment and include a range of tools, equipment and PPE to support the tasks, including: relevant specialist tools, equipment including lifting aids and accessories, environmental protection and cleaning materials, fluids, lubricants, gaskets, seals and other parts for reassembly and refitting purposes, access and work-at-height fall-prevention equipment where required, barriers/equipment to form an exclusion zone for the activity, workshop and equipment manuals, any other equipment deemed necessary to carry out this activity. • All tools, equipment and accessories supplied for the assessment should be fully serviceable and correctly identified/labelled. • A pre-constructed risk assessment and method statement for the activity must be provided for apprentices to refer to. • The independent assessor may observe one apprentice during this assessment method. • The practical assessment with questions may be split into discrete sections held over a maximum of 2 working days. Where breaks occur, they will not count towards the total assessment time.	
Tasks The apprentice must be observed undertaking the following tasks: **Task 1: Remove, dismantle, refit and check functionality (5 hours)** Remove and dismantle (or partially dismantle) either a working power unit, a transmission unit, hydraulic powered or an electrically-powered motor from an item of plant and refit on completion of the rebuild and check for correct function. The activity includes preparing the area and configuring the machine for the activity. **Task 2: Check, test, repair and restore (2 hours)** With one or more given components such as a hydraulically, electrically or pneumatically operated unit with known faults, carry out checks and basic testing to establish the fault or faults, disassemble and carry out the repairs and restore the component to a fully functioning condition. **Task 3: Static and functional checks (70 minutes)** Carry out a range of static and functional checks to ensure the plant or equipment is safe, fit-for-purpose and in a condition to perform in the workplace according to manufacturer's requirements. **Task 4: Welding/thermal joining (2 hours)** Carry out a repair on or modify a component from an item of construction-based plant where welding or other forms of thermal joining are required along with fabrication activities to affect a repair or modification according to a given specification.	

KSBs	Pass criteria	Distinction criteria
Sourcing and applying information		
K1, S17	Identifies, checks and applies the appropriate information for the task from a range of information, including assessor's instructions, workshop-type manuals and manufacturers' literature and documentation.	
Preparing the work area		
K9, K12, K19, S1	Prepares the working area, including relevant protection from pollution, inclement weather etc. and checks the work areas for hazards, conducts visual dynamic risk assessment against given risk assessments, methods statements and other work instructions.	Lays out required tools relative to the sequence of the task before starting. Selects the correct tool for the task first time. Maintains a tidy workstation, free of hazards.
	Creates exclusion zones for each activity, applies and uses appropriate personal protective equipment, safety aids and other health, safety and welfare equipment and controls others entering or within the working area.	
Set up and prepare the equipment		
K20, S3, S4	Ensures each machine type and component is isolated and configured correctly, disconnects, detaches and removes given components using relevant lifting, securing and handling aids.	Explains what needs to be taken into consideration when connecting or disconnecting components using lifting, securing and handling aids.
Parts and components		
S5, S6, S7, S8	Removes, dismantles, disconnects, replaces, repairs, renovates, reinstates, reassembles, connects and refits given parts and components in accordance with correct procedures, manufacturer's instructions, the given time and safety requirements.	Explains at least two potential consequences of not following correct procedures for removing, dismantling, disconnecting, replacing, repairing, renovating, reinstating, reassembling, connecting and refitting given parts.
Checks and tests		
S9, S10, S15	Carries out checks, tests and basic inspections which identified faults and problems and ensures correct function on completion of maintenance activities.	
Repair and modification		
S13	Completes repairs or modifications of given components using fabrication, heating and thermal joining methods according to given instructions and within the given timescales.	

Assessment Method 2: Interview (underpinned by a portfolio of evidence)		90 minutes (+9 mins at IEPAs discretion)
Assessment conditions • The interview must be carried out under controlled conditions in a suitable environment. • The IEPA must have reviewed the apprentice's portfolio evidence report in advance. • The IEPA must ask **a minimum of 14** questions to give the apprentice an opportunity to demonstrate **all** the criteria in the **nine (9)** topics and themes shown in the grading criteria table on pages 3 & 4.		
Themes, topics and grading criteria		
KSBs	**Pass criteria**	**Distinction criteria**
Topic/Theme 1. Types and uses of construction equipment.		
K2 Types, uses, core function and operation of construction-based equipment	Describes the types of plant they have worked on, how they function and are used.	Describes typical faults and failures that occur in construction equipment and why they occur. Explains the factors that determine the maintenance requirements for a selected machine type from the type of plant they have worked on.
Key Topic/Theme 2. Compliance, regulations and best practice.		
K8 Company procedures and responsibilities in relation to working with the sector, customer and organisational requirements for working within construction and alongside other colleagues. K11 Environmental regulations and considerations for the containment and disposal of waste materials and equipment. S18 Working activities in compliance with legislation, regulations, best practice and organisational requirements in the construction, industrial, quarrying, hire, port, mining and other allied environments.	Outlines the regulatory requirements, organisational, customer and workplace procedures and best practices that apply including environmental aspects and how they complied with each during maintenance activities.	States a range (at least two) specific work and environmental regulations that they complied with during maintenance activities and how those regulations add value. Explains the impact of not complying with regulations.
Key Topic/Theme 3. Dealing with hazards		
K14 Methods and procedures for dealing with typical workplace and site-specific emergencies including fire, spillages, injuries and other task-related hazards.	Describes organisational and site methods and procedures for typical emergencies including fire evacuations, injuries and environmental aspects.	
Topic/Theme 4. Diagnosing, checking and testing.		

KSBs	Pass criteria	Distinction criteria
K18 Techniques for checks and inspections, why typical components failures and causes of failure of relevant construction-based equipment. S11 Specified testing activities on construction-based equipment both in a workshop, facility and site-based environments that ensure correct and safe functional effectiveness. S14 Install and commission construction-based equipment on site-based environments for operational activities. B3 Time management – planning and delivering set tasks within specified targets and timescales.	Describes how they conducted specific diagnostic checks, inspections and testing activities, on a selected range of equipment, what techniques were used, and how they installed and commissioned a range of relevant plant or equipment. (K18, S11, S14) Describes how they planned and delivered the tasks within specific target and timescales. (B3)	Critically analyse why they used particular methods of diagnostic checks and tests over other available methods. (K18, S11)
Topic/theme 5. Tools and resources		
S2 Identify, handle and store required resources, tools and equipment necessary to maintain construction-based equipment, reporting shortages/ incomplete stock as appropriate.	Describe resources, tools and equipment used to maintain construction-based equipment, how these were identified and handled and how any shortages/ incomplete stock was reported on.	
Theme/Topic 6. Communicating and reporting		
K13 Working timetables/ deadlines, behaviours, technical abilities and working practices effects on customer relations and why. K21 Different communication and record-keeping methods, when they are used and the consequences of poor communication and record keeping. S16 Complete organisational reports to confirm and document the work activity that was undertaken and inform employer and clients of work progress and problems encountered. B2 Forming and enhancing customer relationships – as a front-line facing role, creating and maintaining effective working and commercial relationships.	Describes the organisational processes and forms to record work undertaken, measures taken to communicate work progress and issues encountered with co-workers, customers and employers and the consequences of incomplete or poor levels of communication, record-keeping and not complying with deadlines and timetables. Supports this with an example of a report they completed and explains what factors they considered when they discussed this with the customer or employer. (K13, K21, S16)	Describes how they exceeded customer expectations through excellent working practices and effective communication. (K13)

KSBs	Pass criteria	Distinction criteria
	Describes how they have formed and maintained effective customer relationships. (B2)	
Key Topic/Theme 7. Producing components		
S12 Produce one-off components against given information and specifications that requires fabrication and welding activities.	Discussed when they have produced one-off components which required fabrication and welding activities that were completed to the required specifications.	
Key Topic/Theme 8. Teamwork and working with others		
B1 Teamwork and independent working – working and engaging collaboratively and effectively with co-workers of different occupations to achieve requisite results safely and efficiently and safe working, and achieving those results through independence, resourcefulness and ability B5 Respect – dealing equally and fairly with for example, people of different genders, disabilities, backgrounds, races, cultures and creeds; taking care of the environment.	Pass: Describes how they worked and engaged collaboratively and effectively with co-workers, including those in different occupations, to achieve requisite results safely and efficiently. Using a different example, describes how they worked independently to achieve requisite outcomes safely. (B1) Describes how they created and maintained effective working and commercial relationships with clients, co-workers and employers, dealing equally with people from different backgrounds (for example gender, disability, culture, race and social background). (B5)	
Key Topic/Theme 9. Assertiveness and resilience		
B4 Assertiveness, confidence and resilience – dealing with unexpected situations, pressure to complete work safely and on time, resolutely advising less-informed parties of realistic completion times and the rationales of the processes involved.	Discusses how they dealt with unexpected situations, how they managed internal pressure to complete work safely and on time, how they advised less-informed parties in a correct manner of realistic completion times of particular maintenance or repair activities and provided rationales of the processes involved.	Evaluates how successful they were in dealing with unexpected situations. Describes how they varied their approach when managing completion times, depending on the customer and their response.

Assessment Method 3		30 multiple choice questions, 60 minutes, controlled/invigilated conditions	
Ref	**Assessment Criterion**	**Indicative knowledge**	**Qsts**
K3.1	Describe principles of energy sources and transmission methods e.g., IC power units, hydraulics, pneumatics, electrics.	Pascal's Law relating to hydraulic and pneumatic system flow, pressure, force and area, mechanical advantage used for energy transmission (drive ratios, leverage, torque multiplication, cable reeving), I.C. power units, conversion of thermal energy to kinetic energy, Bernoulli's Theorem as applied to the carburettor venturi, stoichiometric fuel mixture for SI Engine, thermal heat transference, convection, conduction and radiation, electrical principles relating to Ohms Law, Amperes force law, Power (Electro Motive Force, Current, Resistance, Watt).	**1**
K3.2	Explain the function and operation of energy sources and transmission methods e.g., IC power units, hydraulics, pneumatics, electrics.	**IC power units:** Transforming thermal conversion to mechanical power, 2 & 4 stroke single and multiple cylinder Spark ignition & Compression Ignition engines, cylinder configuration, phasing, lubrication systems, thermal cooling (liquid & air), atmospheric and pressurized fuel systems, air induction systems, intercoolers, environmental protection systems, exhaust gas regeneration (EGR), diesel oxidization catalysts (DOC), diesel particle filters (DPF), exhaust fluid injection systems (AdBlue). **Hydraulic**: Transforming fluid power into motive power (hydraulic pumps, rotary and linear actuators), hydraulic power transmission (types of hoses and lines), control of hydraulic fluid (directional control, open and closed centre circuits, open and closed loop circuits, series and parallel circuit layout). **Pneumatics**: Air compressors, storage, control and transmission (air pumps, receivers, pipes, hoses, pressure regulating valves, flow control), conversion of pneumatic power to mechanical power (rotary and linear actuators). **Electrical:** Electrical power transmission, materials used, circuit types (series and parallel), transforming electricity into motive power. Electronic control units, sensors, analogue and digital communication networks.	**2**
K3.3	Recognise the limitation of energy sources and transmission methods e.g., IC power units, hydraulics, pneumatics, electrics.	**IC power units:** Exhaust emission (Carbon monoxide, nitrogen oxides, hydrocarbons), mechanical failure, temperature control, frost protection required, periodic maintenance and adjustments. Power taken from: crankshaft pulley, flywheel, timing gears. **Hydraulics**: Fluid spillages creating environmental damage, fire risk, hazards of high-pressure atomised fluid leaks, periodic maintenance and adjustments required, high pressure containment result in heavy components, sudden system failure due to leaks. Failure of Lines, pipes, hoses due to: fatigue, mechanical damage, ageing. **Pneumatics:** Require continuous lubrication, seizing due to lubrication failure, requirement for water separators, air driers, prone to freezing in cold weather, low power conversion efficiency, motors lack torque at low speed. Lines, pipes, hoses failure due to: fatigue, mechanical damage, age. **Electrical:** Environmental (water ingress causes damage, restrictive usage in explosive environments, damage due dust ingress, connector corrosion creates high resistance and power drop), Insulation failure (electrocution, short circuit fires). Direct current (DC) motor requires periodic carbon brush replacements. **Transmission**: cables, wires, magnetic fields.	**1**
K3.4	Identify the application *(context in which these are applied in practice)* of energy sources and transmission methods e.g., IC power units, hydraulics, pneumatics,	**IC Power Units:** Portable, static and mobile plant: Mechanical gearboxes, hydraulic mechanical gearboxes, propeller shafts, driveshafts, axles, final drive, direct drive, drive belts, chain drives. **Hydraulic:** Portable, static and mobile plant: Converting mechanical power to fluid power by rotary actuators (fixed & variable displacement motors), linear actuators (single and double acting, differentiating and non-differentiating) in combination with mechanical drive systems (torque converter, hydrostatic drive systems). **Electrical:** Portable, static and mobile plant: Converting electrical power to mechanical by D.C. and A.C. motors, direct drive	**1**

	electrics.	mechanical and hydraulic transmission systems. Electrical power for heating (engine cold star aids, site space heating) and lighting (work lamps, warning beacons, instrument lamps), electronic communication signals (analogue and digital), Can-bus, sensors, electronic control units.	
K4.1	Describe principles of components used on relevant equipment including those that provide direction, retardation, movement, power-transmission, heat, light and flow.	**Direction:** Wheeled vehicle steering systems: Two, four, crab and pivot steering systems. Ackerman steering principle. Tracked vehicles: Hydrostatic steering using open centre valve block system and hydraulic differential steering. **Retardation:** Mechanical, hydraulic, power assisted hydraulic, full air braking systems. Leading & trailing, twin leading drum brake, external and internal disc brake (oil immersed and dry), band brakes. Exhaust, electrical and hydraulic brake retarders. Types of brake friction materials and the effect of heat (brake fade, co-efficient of friction). **Movement:** Mechanical Torque multiplication: Gear ratio, siding mesh, constant mesh, power shuttle, powershift gearboxes. four-wheel drive drop-boxes, rigid and steer drive axles, differentials (limited slip, mechanical lock), final drive units, chain drives including tracked machines. **Power-transmission:** Friction clutches: drive plates (single and multiplate clutches), centrifugal, cone, friction materials, cover plates (diaphragm, coil spring), dog clutches, torque converters, friction and mechanical drive belts. **Heat:** Engine cold starting aids (heater plugs), cab heaters (heater matrix), cab heat reduction (air conditioning unit). Portable site heaters (Infrared tubes). **Light:** Bulbs (Incandescent, halogen), Light Emitting Diodes (LED). Series and parallel circuits. **Flow:** Water, sludge & concrete pumps (Centrifugal, diaphragm, piston). Pumping head and lift. **Suspension:** springs, suspension systems, ADT, gas/air systems, shock absorption	**1**
K4.2	Explain the function of components used on relevant equipment including those that provide direction, retardation, movement, power-transmission, heat, light and flow.	**Direction:** Steering box, drop arm, drag link, stub axle, track rod, steering joints wheels (solid, split), tyres (radial, cross-ply construction). Rack and pinion, tie-rods, ball joints. Steering pump, pressure relief valve, orbital steering valve, hoses, hydraulic steering ram, fluid filter, fluid, centre pivot bearings and links. Tracked vehicles: Hydrostatic steering open centre valve, pump, pressure relief valve, motor counterbalance valve, hydraulic differential steering motor, steering control valve, direction control valve (DCV). **Retardation:** Mechanical brake linkage (cables, rods, compensators, brake pedal/levers, trailer break-away cable). Hydraulic system (Master cylinder, wheel cylinders, load valve, pipe and hoses), brake drums, brake shoes, backplates, adjusters, expanders, brake discs, brake pads, brake callipers. Exhaust brake (butterfly, sliding gate, control system). Hydraulic retarder (Stator, rotor, enclosure and control valve). Electrical retarder (coil pack, coil, disc). **Movement**: Siding mesh, constant mesh, power shuttle, powershift gearboxes. Four-wheel drive drop-boxes, drive axles. Gear ratios, gear types, selector forks and interlocks, synchromesh hubs, dog clutches, Input shaft, layshaft, output shafts, wet clutches, epicyclic gear units, crown wheel & pinion, differential gears (plant & sun), differential limited and full lock, propeller and drive shafts. Drive chains and sprockets, drive belts and pulleys. Suspension components. **Power-transmission:** Friction clutches: drive plates (single and multiplate clutches), centrifugal, cone, friction materials, cover plates (diaphragm, coil spring), dog clutches, torque converters, friction and mechanical drive belts **Heat:** Engine cold starting aids (heater plugs), cab heaters (heater matrix), cab heat control (air conditioning unit). Portable site heaters (Infrared tubes). **Light**: Light Emitting Diodes (LED), bulbs (wattage, voltage, fitting type), Series and parallel circuits (overload protection, switches, relays, timers). **Flow:** Pumps: Impellers, volute chamber, housing, mechanical seals, clack valves, hoses, strainers, diaphragms, bearing types, bushes, cylinder tubes.	**1**

K4.3	Identify types of components used on relevant equipment including those that provide direction, retardation, movement, power-transmission, heat, light and flow.	**Direction:** Steering box, drop arm, drag link, stub axle, track rod, steering joints, wheels, tyres. Rack & pinion, tie-rods and joints. Steering pump, pressure relief valve, hoses, hydraulic steering ram, steering filter, fluid, centre pivot bearings and link. Hydrostatic steering open centre valve, pump, pressure relief valve, motor counterbalance valve, hydraulic differential units and steering motor, steering control valve, direction control valves (DCV), orbital steering valves. **Retardation**: Mechanical brake linkage (cables, rods, compensators, brake pedal/lever, trailer break-away cable). Hydraulic system (master cylinder, wheel cylinders, load sensing valves pipe and hoses), brake drums, brake shoes, backplates, adjusters, expanders, brake discs, brake pads, brake callipers, exhaust brake (butterfly and sliding gate), hydraulic retarder (stator, rotor, enclosure and control valve). **Movement**: Sliding mesh, constant mesh, power shuttle, powershift gearboxes. Four-wheel drive drop-boxes, drive axles. Gear ratios, gear types, selector forks and interlocks, synchromesh hubs, dog clutches, Input shaft, layshaft, output shafts, wet clutches, epicyclic gear units, crown wheel & pinion, differential gears (plant & sun), propeller and drive shafts. drive chains, sprockets, belts, pulleys, suspension components (springs, accumulators, airbags, anti-roll bars, shackles, pins and bushes, solid bushes). **Power-transmission:** Friction clutches: drive plates (single and multiplate clutches), centrifugal, cone, friction materials, cover plates (diaphragm, coil spring), dog clutches, torque converters, friction and mechanical drive belts (Vee, multi-rib, toothed). **Heat:** Heat exchangers, coolers, cab air conditioning drive, magnetic clutch, compressor, evaporator, receiver-drier, condenser). **Light:** Light Emitting Diodes (LED), bulbs (wattage, voltage, fitting type), series and parallel circuits, overload protection, switches, relays, timers. **Flow:** Electrical systems for engine cold starting aids (heater plugs), Infrared heater (infrared tubes, holders, safety cut-outs, switches). Cab heaters (coolant supply system, controls, heater matrix), Pump: Impellers, volute, housing, mechanical seals, clack valves, hoses, strainers, diaphragms, bearing types, bushes, cylinder tubes.	**1**
K4.4	Identify the application *(context in which these are applied in practice)* of components used on relevant equipment including those that provide direction, retardation, movement, power-transmission, heat, light and flow.	**Direction:** Steering components used on: Rear and front axles (counterbalance industrial forklift, powered access lifts, backhoe loaders). Four-wheel steering (telescopic material handlers, backhoe loaders). Crab steer (telescopic material handlers, backhoe loaders). Tracked machine steering (excavators, dozers, tracked dumpers). **Retardation**: Mechanical brakes: trailers, bowsers, compressors and mobile plant parking brakes. Hydraulic system: Site dumpers, industrial counterbalance forklifts. Powered hydraulic brakes: Telescopic material handlers, backhoe loaders. Exhaust brake and Hydraulic retarder: spring brakes (tandem rollers, hydrostatic drive site dumpers), air brakes, articulated dump trucks and rigid dump trucks. **Movement**: Transmission components for: Mechanical transmissions (site dumpers), Torque convertors, Power-shuttle and Power-shift (Backhoe loaders, site dumpers, telescopic material handlers). Hydrostatic drive (Tandem rollers, site dumpers, industrial counterbalance forklifts). Track chain components (excavators, tracked dumpers, dozers), suspension. **Power-transmission**: Power transmission components for: Friction clutches and belts (Cut-off saws, compaction plates, engine auxiliary component drives). Toothed belts: (Engine timing, cement mixer drives). Chains: Engine timing. **Heat**: Components for: Cab heating and cooling systems, Engine cold starting aids, portable site heaters **Light**: Lamp and circuit components for: Light Emitting Diodes (LED) and Light bulbs (Panel warning lamps, working lamps, warning beacons, indicator lamps).	**2**

		Flow: Water Pump components: Engine cooling systems, Portable site pumps (clear water and sludge).	
K5.1	Identify types of fluids used in construction-based plant including a) oils/lubricants b) cooling/heating c) for power/work transmission	**Oils/lubricants:** Mono and multi-grade fluid viscosity, mineral and synthetic based engine oils. Fleet lubricants. **Cooling/heating:** OAT, IAT, HOAT Si-OAT engine coolants. R22 Freon, R410A Puron refrigerants. **Power/work transmission:** Mineral and synthetic gear oils, wet brake transmission oils, automatic transmission fluids, mineral and vegetable based hydraulic fluids, brake fluids, pneumatic oils	**1**
K5.2	Describe the appropriate application of fluids used in construction-based plant including a) oils/lubricants b) cooling/heating c) for power/work transmission	**Oils and lubricants:** Engines have specific lubrication requirements, correct grade and type of oil must be used (Mono and multi-grade viscosity, mineral and synthetic based engine oils). Fleet lubricants. **Cooling/heating:** Components are manufactured from different materials which can be damage by use of incorrect coolants: Green (Inorganic Additive Technology – IAT), Orange (Organic Acid Technology – OAT), Yellow (Hybrid Oat – HOAT) Turquoise Phosphate free HOAT), Pink or Blue (Phosphated P- HOAT), Purple Si- OAT, Silicated OAT). Air conditioning systems use: R22 Freon (Banned since2004 but still in older units), R410A Puron now used in air conditioning units **Power/work transmission:** Transmission axles, gearboxes, final drives etc all have specific lubrication requirements and the correct type of transmission lubricant must be used: Mineral and synthetic gear oils, wet transmission oils, automatic transmission fluids, mineral and vegetable based hydraulic fluids, brake fluids, pneumatic oils	**1**
K5.3	Explain the limitations of fluids used in construction-based plant including a) oils/lubricants b) cooling/heating c) for power/work transmission	**Oils and lubricants:** Over time engine oils will chemically breakdown due to heat exposure, loss of viscosity, fuel dilution, coolant contamination **Cooling/heating:** Coolant becomes more acid and will lose rust inhibition properties, this will create internal damage to cooling system components. Air conditioning unit permeate refrigerant. **Power/work transmission:** Overtime transmission oils chemically change due to pressure and heat created by gear teeth contact. Contamination from metal shavings due to component wear along with water ingress due to condensation, seal and breather leakage all reduce the oil's ability to lubricate and cool.	**1**
K6.1	Describe the **mechanical principles** that apply to construction-based plant that produce outcomes of work from an energy source.	Torque multiplication to increase transmission power. Small gear (Driver) driving large gear (Driven) Driver/Driven = Drive Ratio. Output torque increase but speed decrease. Lever lengths increase or decrease input required to move load. Reeving of crane block, winch snatch blocks to increase lifting/pulling capacity or adjust hoisting speed.	**1**
K6.2	Describe the **mechanical efforts** that apply to construction-based plant that produce outcomes of work from an energy source.	Simple and complex drive systems: chain sprockets, drive pulleys, gear trains to increase torque and alter speed. Leverage to balance and multiply force: Reeving of crane block, winch snatch blocks to increase lifting/ pulling capacity, increase/decrease hoist speed.	**1**
K7.1	Describe the aims of regulations and legislation that apply to the maintenance and repair of construction-based	**Health and Safety at Work Act 1974 (HASAWA):** Places duties on employers and employees to ensure the safety of workers and others at the premises where work activities are occurring. HASWA is the overarching H&S legislation and breaches of this legislation can lead to enforcement action or prosecutions by the Health and Safety Executive. (HSE). **Lifting Operations and Lifting Regulations 1998 (LOLER):** Supports HASAWA where lifting operations or lifting equipment is being used. Regulation is risked based, sets out the maximum periods between inspections for different groups of lifting	**2**

	equipment, typically including Health and Safety at Work Act, LOLER, COSHH, PUWER	equipment, the frequency of operation and environmental considerations should be taken into account and inspection period adjusted accordingly. **Control of Substances Hazardous to Health Regulation 2002 (COSHH):** Support the HASAWA where hazardous materials used in the workplace. Employers have to identify the hazards, develop risk assessments and produce safe system of work /method statements to protect employees and others in the workplace. COSHH sheets should detail how to use, store, dispose, emergency procedures, contact details and medical treatment information. **Provision and Use of Works Equipment Regulation 1998 (PUWER):** Supports HASAWA where equipment and machinery are used in the workplace. Employers must identify the hazards that equipment present, develop appropriate maintenance schedules, inspections and statutory testing where required. Employees operating the equipment must be trained, competent, have adequate information available for reference. **RIDDOR:** **Lone working regulations:**	
K7.2	Translate compliance requirements of regulations and legislation that apply to the maintenance and repair of construction-based equipment, typically including Health and Safety at Work Act, LOLER	**Health and Safety at Work Act 1974 (HASAWA):** Not to endanger self or others, cooperate with employer and follow company procedures and guidance, duty to report hazards. **Lifting Operations and Lifting Regulations 1998 (LOLER):** Lifting operations must be planned, lifting equipment and accessories must be maintained, inspected and periodically thoroughly examined. Operators must be trained, competent, have sufficient information available to operate the equipment safely. **RIDDOR**	**1**
K7.3	Translate compliance requirements of regulations and legislation that apply to the maintenance and repair of construction-based equipment, typically including COSHH, PUWER	Personal responsibilities of individuals in the workplace to comply with legislation. **Control of Substances Hazardous to Health Regulation 2002 (COSHH)**: Follow procedures, wear specified PPE, correctly store and returned to storage after use. Emergency procedures involving substance been used. **Provision and Use of Works Equipment Regulation 1998 (PUWER)**: Ensure equipment is suitable for intended purpose, in good working order, maintained, inspected and tested as required. Operators are trained and competent, have adequate information available to enable safe operation. **Lone working regulations:**	**1**
K10.1	Describe use of length/height, weight, area, volume for measuring and calculating.	To ensure: quality, monitoring, safety, making something fit (design or assembly) and problem solving. Calculation: Rectangle area = Length x Width. Cube volume = Length x Width x Height. Circle area = πr^2. Cylinder volume = πr^2 x height. Torque: Force = Weight x Length. Perimeter = Total length of all sides. Circle circumference = πd.	**1**
K10.2	Describe use of heat, pressure, electrical conductivity etc. for measuring and calculating.	**Heat:** Testing thermostats, thermostatic switches, digital and analogue sensor function. Identifying excessive friction, hot/cold running and circulation issues. Temperature control for component fitting, thermal cutting, material working and joining. **Pressure**: Hydraulic and pneumatic systems inspecting and testing. Force = Area x Pressure. Unit Bar. Pressure = Area/Force. Engine diagnostics: Compression and cylinder leakage testing Unit: Bar **Electrical**: Circuit continuity and resistance testing: Volts/Amps = Ohms. Circuit load calculation: Volts x Ohms = Amps. Circuit supply voltage testing: Amps x Ohms = Voltage	**1**
K10.3	Identify the units used with typical types of measuring	Flow gauges: Litre per minute, Pressure gauges: Bar, Thermometers: Celsius, Vernier calliper: 0.1mm, Micrometre, feeler gauges and Dial Test Indicator gauge :0.001mm. Voltmeters: AC & DC Volts. Ammeter: Amps. Ohmmeter and Insulation	**1**

	equipment.	Resistance Testers: Ohms. Capacitance Meter: Farads. Electrical load banks: Volts, amps and Hertz. Torque Wrenches: Newton Metres (Nm) Hydrometer: Battery Specific Gravity Tester (Relative density) Weight of electrolyte to water at 20° c 1.280 = Fully Charged. Steering tracking gauges: Toe angle in degrees and minutes.	
K15.1	Identify tools and equipment relevant to tasks on construction-based equipment	Range of: hand tools, workshop equipment (including lifting equipment), measuring devices.	**1**
K15.2	Explain why tools and equipment need to be fit-for purpose, calibrated, checked before use, maintained, and stored correctly on completion of activities.	Reduce risks and hazards associated with workshop tools and equipment, calibration maintains accuracy, pre-use checks ensure equipment is safe to use, maintenance ensure efficiency and maximum working life, correct storage prevents equipment damage, compliance with legislation/regulation, verify performance data.	**1**
K16	Describe safety requirements for dealing with pressurised systems, hot/cold systems, stored energy and electrical/electronic systems.		
K16.1	*Pressurised (fluid & pneumatic) systems*	Support raised components with appropriate support struts and Safe Working Load (SWL), Release trapped residual pressure by operating controls, venting system. Take precaution to prevent fluid injection e.g., initially release pressure pipe nuts, pressure caps etc slowly and wear PPE to protect hands and face.	**1**
K16.2	*Mechanical systems*	Safe release and clamping/securing of: spring pressured, tortional, raised loads, inertia, compressed.	**1**
K16.3	*Hot & cold systems*	Allow hot system to sufficiently cool before commencing work. Allow cold system to sufficiently warm before commencing work, wear appropriate PPE, use correct tools.	**1**
K16.4	*Isolation/making safe of electrical systems and storage*	Isolate and lock out equipment from energy supply before commencing work activity. Discharging capacitors before commencing work or placing in storage, avoiding contact with capacitor terminals. Safety procedures when removing and replacing batteries. Ventilation requirements for battery storage and charging.	**1**
K17.1	Describe principles of material forming and shaping	Plastic deformation by applying a force greater than the materials yield strength: Bending, stretching, shaping by means of thermal application and cold methods including tools and equipment requirements. Preparation of the starting material, processing operation and post processing operation.	**1**
K17.2	Describe principles of material cutting	Hot cutting (plasma and gas cutting), Sawing (power and handsaws). Abrasive cut-off discs (angle grinders), shearing (guillotine, hand shears)	
K17.3	Describe principles of material joining and fitting	Joining steels, plastics, non-ferrous materials. Total fusion (Manual Metal Arc (MMA), Metal Inert Gas (MIG), Tungsten Inert Gas (TIG)) and surface fusion (soldering and brazing). Chemical joining: Adhesives (wet, contact, reactive, single component reactive, two-component reactive, hot-melt). Mechanical fastening (rivet, bolt, screw). Sealants and gasket materials.	
K22.1	Explain why additional training required for workplace activities including a) manufacturer's specific, manual handling, COSHH and other environmental	Potential to expand skills set, increase knowledge, generate new ideas and perspectives, contributes to workplace safety. Manual handling: Skills to safely undertake manual handling tasks, reduce risk of injury. COSHH: Safe use of substances, PPE requirements, emergency procedures, reduce the number of people who become unwell due to harmful substances. Environmental control training: Spill kits, mechanical ventilation systems, waste disposal to safeguards the environment.	**1**

	control requirements.		
K22.2	b) working safely courses such as IOSH, CITB, PTS and the requirements of CSCS-badged certification	The Institution of Occupational Safety and Health (IOSH) working safely training: Essential H&S in the workplace, people's responsibilities, knowledge of legislation and its practical application. Construction Industry Training Board (CITB): Supports construction related employers with financial grants, specialist courses, upskilling of construction employees, apprentices training support. Personal Track Safety (PTS): Safety guidance to rail track worker. CSCS cards requirements: mandatory H&S knowledge test certificate, appropriate qualification, types of cards (Red -Apprentice, Blue - Skilled worker, Gold – Advanced craftworker, Black - Manager), promoting a safer work environment. Contractor requirement for access to construction site.	
Total			**30**

Appendix 3 Portfolio Authentication Statement

Portfolio Authentication Statement

Authenticity & currency - The evidence you submit **must**:

- belong to you.
- have been produced by you.
- be current.

Apprentice name:	Click or tap here to enter text.
Job title/ role:	Click or tap here to enter text.
ULN number:	Click or tap here to enter text.
Employer:	Click or tap here to enter text.
Standard name:	**Construction Equipment Maintenance Mechanic**
Standard code:	**ST0805**

	Please tick (✓)
I **confirm** that the evidence I have submitted within the portfolio is my own work.	☐
I **understand** that my results may be invalidated if I have submitted evidence that does not belong to me and which has not been clearly acknowledged.	☐
I **confirm** that the evidence I have submitted within the portfolio was created by me pre-gateway during my apprenticeship.	☐
I **confirm** that the evidence I have submitted within the portfolio meets the requirements of the apprenticeship assessment plan.	☐

Apprentice signature:	Click or tap here to enter text.
Date:	Click or tap to enter a date.

This statement **must** be submitted by the apprentice along with their portfolio.

All information provided on this form will be held securely and only used for the purposes provided. Full details on how we use and protect your data are available in our **Privacy Notice.**

Open Awards tries to meet the highest standards when collecting and using personal information. Customers are encouraged to email info@openawards.org.uk if you believe any data to be incorrect, unfair, misleading or inappropriate.

Appendix 4 Evidence and KSB Criteria Reference Sheet (Portfolio)

Evidence and KSB Criteria Reference Sheet (Portfolio)

Apprentice name:	Click or tap here to enter text.
Job title/ role:	Click or tap here to enter text.
ULN number:	Click or tap here to enter text.
Employer/ Provider name:	Click or tap here to enter text.
Apprenticeship standard:	**ST0805 Construction Equipment Maintenance Mechanic**

Occupational duty	Evidence reference	Evidence format	Evidence location	KSB criteria demonstrated
1. Identify and prepare the working area and undertake a health, safety and environmental local risk assessment which including environmental aspects, checks the suitability for the type of work and sets out an exclusion zone in specific environments. These would include workshops and on-site locations such as live-traffic areas, quarries, underground locations, petro-chemical etc. to carry out maintenance and commissioning activities on relevant items of plant e.g., piling rigs, mobile cranes, water pumps etc.				
2. Identify, procure and plan for all the required resources to undertake the planned work. This includes spares, ancillary equipment and specialist tooling and lifting equipment such as torque wrenches,				

Occupational duty	Evidence reference	Evidence format	Evidence location	KSB criteria demonstrated
metrological equipment, lifting and rigging gear, ensuring that all such equipment is in calibration and within a regime of routine inspections and in accordance with the Provision and Use of Work Equipment Regulations (PUWER) 1998 and the Lifting Operations and Lifting Equipment Regulations (LOLER) 1998				
3. Configure, position, set, rig and prepare the plant or equipment within the work or maintenance environment in accordance to the safe system of work and exclusion zones (which may include neighbouring public access areas), complying with manufacturers' and customers' requirements so that critical components such as hydraulic pumps motors, cables, etc. can be removed or accessed as required.				
4. Undertake visual and function tests and inspections of construction equipment prior to repairs being commenced in workshop and on-site locations to identify specific repair-critical and condition factors, and reporting of same, where relevant, to the employer, customer, end user and the work flow management.				
5. Safely, efficiently and in a planned manner disconnect, detach and remove a range of critical and non-critical components (engines, electronic modules, transmissions, wiring looms, hydraulic looms etc.) from construction plant and equipment to enable their individual repair or replacement or to access other components in accordance with manufacturers' guidelines and site specific and legislative requirements.				
6. Dismantle, inspect, measure evaluate and report on construction equipment-based critical components and decide on a repair or replacement process, such				

Occupational duty	Evidence reference	Evidence format	Evidence location	KSB criteria demonstrated
as a faulty transfer gearbox on an earthmoving machine being removed and dismantled to decide whether it is repairable or not, and how most efficiently and economically to proceed.				
7. Repair, refurbish, overhaul or renovate critical components (such as hydraulic valves, engines, associated components, transmissions, chassis and driveline components, electrical components etc.) and function and safety test according to legislative and manufacturers' requirements prior to recommissioning.				
8. Assemble, connect, attach and refit new or repaired components and ancillary equipment such as alternators, track drives, pumps, accumulators, conveyers following manufacturer's assembly instructions.				
9. Undertake function, static and operational checks on repaired construction equipment, (such as statutory Thorough Examination on lifting equipment, safety and functional checks on small tools and function tests on hydraulic, electrical, mechanical and pneumatic components) after completion of repairs and prior to recommissioning and, under the direction and/or guidance of a supervisor or other, final hand-over to customers and end users according to the given level of responsibility.				
10. Produce bespoke components and tools such as brackets, pullers, spacers, guards and shields against given information and specifications that require fabrication, welding and chemical-jointing activities using materials such as steels, plastics and non-ferrous.				

Occupational duty	Evidence reference	Evidence format	Evidence location	KSB criteria demonstrated
11. Remove, repair, modify and adapt components using hot-work techniques such as burning, brazing, welding (Mig, Tig, argon-arc, heating, plasma) to carry out repair or improvement activities such as using line boring and hard facing methods to build up ground-engaging components.				
12. Install and set up, under the direction and/or guidance of a supervisor or other, construction plant and equipment in preparation for operational activities such as generators, screeners, water pumps etc. and inform or advise end-users on the specific functions and unique features of the equipment.				
13. Carry out pre and post-delivery inspections and undertake pre and post-hire inspections on construction plant and equipment, or prior to it going on hire, reporting on same and evaluating the priority of issues and, under the direction or guidance of a supervisor, whether or not the equipment is fit for commissioning or hire.				
14. Investigate reported and identified repair requirements involving the application of diagnostic tools and processes such as hydraulic, mechanical, electrical and digital protocols, and the use of bespoke software under the direction or guidance of a supervisor.				
15. Convey reports of work activities using a range of methods to customers or employers and complete organisation-specific reports to confirm work completion, identifying aspects of the work undertaken, and advisory, environmental and safety information to be conveyed to customers or the employer.				

Occupational duty	Evidence reference	Evidence format	Evidence location	KSB criteria demonstrated
16. Source, extract, identify, interpret and apply technical information from manufacturers manuals, electronic information, given verbal information, good practice guidance, organisational and manufacturers' documentation - both on and off-line to carry out plant and equipment maintenance and servicing procedures to, under the direction or guidance of a supervisor, allow compliance with construction-based health and safety and environmental requirements.				
17. Undertake routine and scheduled servicing and maintenance on construction plant and equipment, using the manufacturers' and organisational regimes as guidance ensuring that construction-based equipment is serviced and inspected and any non-scheduled items are reported on for further action or decision.				
18. Identify, check and use health and safety control equipment (PPE) that needs to be worn during maintenance activities in compliance with the risk assessment, regulations, manufacturers' instructions and organisational procedures and relevant to the work location and environmental conditions, ensuring that the PPE is maintained in good condition, replaced at the recommended expiry dates and stored correctly to prevent premature wear and damage.				
19. Assist, under the direction and/or guidance of others in the delivery, retrieval, recovery or breakdown situations in high risk locations and environments such as highways, rail, quarries, demolition, tunnelling etc.				
20. To ensure continual personal and organisational, attainment, upkeep and maintenance of own knowledge of activities such as health, safety and environmental by actively engaging in a program of CPD, for example to keep abreast of changes to				

Occupational duty	Evidence reference	Evidence format	Evidence location	KSB criteria demonstrated
legislation, standards (e.g., quality), technology, processes etc and accredit these with industry-recognised certification such as CIS, CSCS, CPCS etc.				
21. Determine and use a range of communication methods to successfully convey and receive information and instructions, relevant to the construction environment including verbal, written, graphic and electronic in the course of their duties as a construction equipment mechanic.				
22. Work in compliance the Health and Safety at Work Act and relevant regulations such as PUWER 1998, LOLER 1998, Mines Act and Quarry Regulations, Construction Design Management Regulations as well as best practice guidance such as HSE INDG261 – Pressure systems, in compliance with organisational requirements in the construction and allied environments that negates health and safety hazards, major hazards, environmental aspects and risks associated with the various activities.				

Appendix 5 Practical Assessment - Assessment Record

Practical Assessment - Assessment Record

Apprentice name:	Click or tap here to enter text.		
Pathway:	Click or tap here to enter text.		
ULN number:	Click or tap here to enter text.		
Employer name	Click or tap here to enter text.		
Apprenticeship standard:	**ST0805 Construction Equipment Maintenance Mechanic**		
IEPA name:	Click or tap here to enter text.		
Location:	Click or tap here to enter text.		
Date of assessment:	Click or tap to enter a date.		
Photographic proof of identity provided:	Choose an item.	**Reasonable adjustments approved**	Choose an item.
Start time:	Click or tap here to enter text.	**Finish time:**	Click or tap here to enter text.

Introductory notes

- The practical assessment must be carried out in a controlled environment within the apprentice's workplace or other appropriate work area.
- The IEPA must introduce themselves and confirm their identity to the apprentice and employer/ representative (and others present if appropriate).
- The IEPA must agree with the employer/ representative how disruptions will be managed (e.g., alarms and emergencies) including confirming evacuation procedures.
- The apprentice must provide photographic proof of their identity before the practical assessment commences. Where this is not provided, the assessment must not proceed.
- If at this stage the IEPA believes there is a conflict of interest, the assessment should not proceed and they should contact Open Awards for guidance.
- If reasonable adjustments have been requested and approved by Open Awards, the IEPA should record this and confirm this to the apprentice before starting.
- The IEPA must confirm the apprentice is ready to be assessed and understands the assessment parameters.
- The practical assessment with questions may be split into discrete sections held over a maximum of 2 working days.
- Where breaks occur, they will not count towards the total assessment time.

The apprentice must be observed undertaking the following tasks:

Task 1: Remove, dismantle, refit and check functionality (5 hours)
Remove and dismantle (or partially dismantle) either a working power unit, a transmission unit, hydraulic powered or an electrically-powered motor from an item of plant and refit on completion of the rebuild and check for correct function. The activity includes preparing the area and configuring the machine for the activity.

Task 2: Check, test, repair and restore (2 hours)
With one or more given components such as a hydraulically, electrically or pneumatically operated unit with known faults, carry out checks and basic testing to establish the fault or faults, disassemble and carry out the repairs and restore the component to a fully functioning condition.

Task 3: Static and functional checks (70 minutes)
Carry out a range of static and functional checks to ensure the plant or equipment is safe, fit-for-purpose and in a condition to perform in the workplace according to manufacturer's requirements.

Task 4: Welding/thermal joining (2 hours)
Carry out a repair on or modify a component from an item of construction-based plant where welding or other forms of thermal joining are required along with fabrication activities to affect a repair or modification according to a given specification.

Task 1 date & start time:	Click or tap here to enter text.	**Task 1 finish time:**	Click or tap here to enter text.
Task 2 date & start time:	Click or tap here to enter text.	**Task 2 finish time:**	Click or tap here to enter text.
Task 3 date &start time:	Click or tap here to enter text.	**Task 3 finish time:**	Click or tap here to enter text.
Task 4 date and start time:	Click or tap here to enter text.	**Task 4 finish time:**	Click or tap here to enter text.

To achieve a grading criterion described below, the apprentice must have demonstrated evidence to meet it across **all four** tasks. The IEPA may apply a **holistic** judgement, i.e., that over the four tasks, the apprentice has demonstrated the required evidence and that the IEPA is confident the apprentice will be able to replicate that behaviour in the future workplace conditions. **Any unsafe practice in any task will automatically be deemed a Fail**			
KSBs	**Pass criteria** All pass criteria are required to be achieved to achieve a Pass	**Distinction criteria** All of the distinction criteria are required to be achieved to achieve a Distinction	**Outcome**
Sourcing and applying information			
K1, S17	Identifies, checks and applies the appropriate information for the task from a range of information, including assessor's instructions, workshop-type manuals and manufacturers' literature and documentation.		Choose an item.
Preparing the work area			
K9, K12, K19, S1	Prepares the working area, including relevant protection from pollution, inclement weather etc. and checks the work areas for hazards, conducts visual dynamic risk assessment against given risk assessments, methods statements and other work instructions.	Lays out required tools relative to the sequence of the task before starting. Selects the correct tool for the task first time. Maintains a tidy workstation, free of hazards.	Choose an item.
	Creates exclusion zones for each activity, applies and uses appropriate personal protective equipment, safety aids and other health, safety and welfare equipment and controls others entering or within the working area.		

To achieve a grading criterion described below, the apprentice must have demonstrated evidence to meet it across **all four** tasks. The IEPA may apply a **holistic** judgement, i.e., that over the four tasks, the apprentice has demonstrated the required evidence and that the IEPA is confident the apprentice will be able to replicate that behaviour in the future workplace conditions. **Any unsafe practice in any task will automatically be deemed a Fail**			
KSBs	**Pass criteria** All pass criteria are required to be achieved to achieve a Pass	**Distinction criteria** All of the distinction criteria are required to be achieved to achieve a Distinction	**Outcome**
Set up and prepare the equipment			
K20, S3, S4	Ensures each machine type and component is isolated and configured correctly, disconnects, detaches and removes given components using relevant lifting, securing and handling aids.	Explains what needs to be taken into consideration when connecting or disconnecting components using lifting, securing and handling aids	Choose an item.
Parts and components			
S5, S6, S7, S8	Removes, dismantles, disconnects, replaces, repairs, renovates, reinstates, reassembles, connects and refits given parts and components in accordance with correct procedures, manufacturer's instructions, the given time and safety requirements.	Explains at least two potential consequences of not following correct procedures for removing, dismantling, disconnecting, replacing, repairing, renovating, reinstating, reassembling, connecting and refitting given parts.	Choose an item.
Checks and tests			
S9, S10, S15	Carries out checks, tests and basic inspections which identified faults and problems and ensures correct function on completion of maintenance activities.		Choose an item.
Repair and modification			
S13	Completes repairs or modifications of given components using fabrication, heating and thermal joining methods according to given instructions and within the given timescales.		Choose an item.

Comments on evidence presented to justify assessment decisions
Click or tap here to enter text.

Post assessment

- The apprentice must **not** be given an indication of what grade they may have achieved as the recommended grade to be awarded is subject to internal quality assurance by Open Awards. However, the IEPA must provide the apprentice of an indication as to when they can expect to receive their results.
- The IEPA must clearly explain the appeals, retakes and resits process to the apprentice.

Notes on grading

All pass criteria are required to be achieved to achieve a Pass; if they are not all achieved, the outcome is a Fail.
All pass **and** all 3 of the distinction criteria are required to be achieved to achieve a Distinction.

No. of pass criteria met	Click or tap here to enter text.
No. of pass criteria NOT met	Click or tap here to enter text.
No. of distinction criteria met	Click or tap here to enter text.
No. of distinction criteria NOT met	Click or tap here to enter text.
Recommend grade awarded	Choose an item.

Developmental feedback for improvement in the event of a recommended Fail grade (To be sent by Open Awards to the apprentice and employer)				
Click or tap here to enter text.				
Recommend (please tick)	**Resit**	Choose an item.	**Retake**	Choose an item.

Confirmation

I confirm that this is an accurate record of the assessment undertaken and that the evidence presented during the assessment by the apprentice meets the requirements of the standard for authenticity, currency, sufficiency, independence, reliability and validity.

IEPA Signature:	Click or tap here to enter text.	**Date:**	Click or tap to enter a date.
Name of IQA (if sampled)	Click or tap here to enter text.	**Date:**	Click or tap to enter a date.
Signature of IQA	Click or tap here to enter text.	**IQA Ref:**	Click or tap here to enter text.

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Optional section - IEPA self-reflection on assessment (e.g., link to CPD plan)
Click or tap here to enter text.

Comments on evidence presented to justify assessment decisions
Click or tap here to enter text.

Post assessment

- The apprentice must **not** be given an indication of what grade they may have achieved as the recommended grade to be awarded is subject to internal quality assurance by Open Awards. However, the IEPA must provide the apprentice of an indication as to when they can expect to receive their results.
- The IEPA must clearly explain the appeals, retakes and resits process to the apprentice.

Notes on grading

All pass criteria are required to be achieved to achieve a Pass; if they are not all achieved, the outcome is a Fail.
All pass **and** all distinction criteria are required to be achieved to achieve a Distinction.

No. of pass criteria met	Click or tap here to enter text.
No. of distinction criteria met	Click or tap here to enter text.
Recommend grade awarded	Choose an item.

Developmental feedback for improvement in the event of a recommended Fail grade (To be sent by Open Awards to the apprentice and employer)				
Click or tap here to enter text.				
Recommend (please tick)	**Resit**	Choose an item.	**Retake**	Choose an item.

Confirmation

I confirm that this is an accurate record of the assessment undertaken and that the evidence presented during the assessment by the apprentice meets the requirements of the standard for authenticity, currency, sufficiency, independence, reliability and validity.

IEPA Signature:	Click or tap here to enter text.	**Date:**	Click or tap to enter a date.
Name of IQA (if sampled)	Click or tap here to enter text.	**Date:**	Click or tap to enter a date.
Signature of IQA	Click or tap here to enter text.	**IQA Ref:**	Click or tap here to enter text.

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Optional section - IEPA self-reflection on assessment (e.g., link to CPD plan)
Click or tap here to enter text.

Appendix 6 Interview Assessment Record

Interview Assessment Record

Apprentice name:	Click or tap here to enter text.		
Pathway:	Click or tap here to enter text.		
ULN number:	Click or tap here to enter text.		
Employer name	Click or tap here to enter text.		
Apprenticeship standard:	**ST0805 Construction Equipment Maintenance Mechanic**		
IEPA name:	Click or tap here to enter text.		
Location:	Click or tap here to enter text.		
Date of assessment:	Click or tap to enter a date.		
Photographic proof of identity provided:	Choose an item.	**Reasonable adjustments approved**	Choose an item.
Start time:	Click or tap here to enter text.	**Finish time:**	Click or tap here to enter text.

Introductory notes:

- The interview must be carried out under controlled conditions in a suitable environment.
- The IEPA must have reviewed the apprentice's portfolio evidence report in advance.
- The IEPA must introduce themselves and confirm their identity to the apprentice and employer/ representative (and others present if appropriate).
- The IEPA must agree with the employer/ representative how disruptions will be managed (e.g., alarms and emergencies) including confirming evacuation procedures.
- The apprentice must provide photographic proof of their identity before the technical interview commences. Where this is not provided, the assessment must **not** proceed.
- If at this stage the IEPA believes there is a conflict of interest, the assessment should **not** proceed and they should contact Open Awards for guidance.
- If reasonable adjustments have been requested and approved by Open Awards, the IEPA should record this and confirm that the apprentice is aware of those adjustments before starting.
- If the technical interview is undertaken remotely, please record the system used (e.g., Zoom, MS Teams) and the location of both the IEPA and the apprentice.
- The IEPA must confirm the apprentice is ready to be assessed and understands the assessment parameters.
- The technical interview **must last for 90 minutes** (+10% at the IEPAs discretion to allow an apprentice to finish the answer they are giving)
- The IEPA must ask **a minimum of 14** questions to give the apprentice an opportunity to demonstrate **all** the criteria in the **nine (9)** topics and themes shown in the grading criteria table on pages 3 & 4.

KSBs	Pass criteria All pass criteria are required to be achieved to gain a Pass	Distinction criteria All distinction criteria are required to be achieved to gain a Distinction	Outcome
Topic/Theme 1. Types and uses of construction equipment.			
K2 Types, uses, core function and operation of construction-based equipment	Describes the types of plant they have worked on, how they function and are used.	Describes typical faults and failures that occur in construction equipment and why they occur. Explains the factors that determine the maintenance requirements for a selected machine type from the type of plant they have worked on.	Choose an item.
Key Topic/Theme 2. Compliance, regulations and best practice.			
K8 Company procedures and responsibilities in relation to working with the sector, customer and organisational requirements for working within construction and alongside other colleagues. K11 Environmental regulations and considerations for the containment and disposal of waste materials and equipment. S18 Working activities in compliance with legislation, regulations, best practice and organisational requirements in the construction, industrial, quarrying, hire, port, mining and other allied environments.	Outlines the regulatory requirements, organisational, customer and workplace procedures and best practices that apply including environmental aspects and how they complied with each during maintenance activities.	States a range (at least two) specific work and environmental regulations that they complied with during maintenance activities and how those regulations add value. Explains the impact of not complying with regulations.	Choose an item.
Key Topic/Theme 3. Dealing with hazards			
K14 Methods and procedures for dealing with typical workplace and site-specific emergencies including fire, spillages, injuries and other task-related hazards.	Describes organisational and site methods and procedures for typical emergencies including fire evacuations, injuries and environmental aspects.		Choose an item.

KSBs	Pass criteria All pass criteria are required to be achieved to gain a Pass	Distinction criteria All distinction criteria are required to be achieved to gain a Distinction	Outcome
Topic/Theme 4. Diagnosing, checking and testing.			
K18 Techniques for checks and inspections, why typical components failures and causes of failure of relevant construction-based equipment. S11 Specified testing activities on construction-based equipment both in a workshop, facility and site-based environments that ensure correct and safe functional effectiveness. S14 Install and commission construction-based equipment on site-based environments for operational activities. B3 Time management – planning and delivering set tasks within specified targets and timescales.	Describes how they conducted specific diagnostic checks, inspections and testing activities, on a selected range of equipment, what techniques were used, and how they installed and commissioned a range of relevant plant or equipment. (K18, S11, S14) Describes how they planned and delivered the tasks within specific target and timescales. (B3)	Critically analyse why they used particular methods of diagnostic checks and tests over other available methods. (K18, S11)	Choose an item.
Topic/theme 5. Tools and resources			
S2 Identify, handle and store required resources, tools and equipment necessary to maintain construction-based equipment, reporting shortages/ incomplete stock as appropriate.	Describe resources, tools and equipment used to maintain construction-based equipment, how these were identified and handled and how any shortages/ incomplete stock was reported on.		Choose an item.
Theme/Topic 6. Communicating and reporting			
K13 Working timetables/ deadlines, behaviours, technical abilities and working practices effects on customer relations and why. K21 Different communication and record-keeping methods, when they are used and the consequences of poor communication and record keeping.	Describes the organisational processes and forms to record work undertaken, measures taken to communicate work progress and issues encountered with co-workers, customers and employers and the consequences of incomplete or poor	Describes how they exceeded customer expectations through excellent working practices and effective communication. (K13)	Choose an item.

KSBs	Pass criteria All pass criteria are required to be achieved to gain a Pass	Distinction criteria All distinction criteria are required to be achieved to gain a Distinction	Outcome
S16 Complete organisational reports to confirm and document the work activity that was undertaken and inform employer and clients of work progress and problems encountered. B2 Forming and enhancing customer relationships – as a front-line facing role, creating and maintaining effective working and commercial relationships.	levels of communication, record-keeping and not complying with deadlines and timetables. Supports this with an example of a report they completed and explains what factors they considered when they discussed this with the customer or employer. (K13, K21, S16) Describes how they have formed and maintained effective customer relationships. (B2)		
Key Topic/Theme 7. Producing components			
S12 Produce one-off components against given information and specifications that requires fabrication and welding activities.	Discussed when they have produced one-off components which required fabrication and welding activities that were completed to the required specifications.		Choose an item.
Key Topic/Theme 8. Teamwork and working with others			
B1 Teamwork and independent working – working and engaging collaboratively and effectively with co-workers of different occupations to achieve requisite results safely and efficiently and safe working, and achieving those results through independence, resourcefulness and ability B5 Respect – dealing equally and fairly with for example, people of different genders, disabilities, backgrounds, races, cultures and creeds; taking care of the environment.	Pass: Describes how they worked and engaged collaboratively and effectively with co-workers, including those in different occupations, to achieve requisite results safely and efficiently. Using a different example, describes how they worked independently to achieve requisite outcomes safely. (B1) Describes how they created and maintained effective working and		Choose an item.

KSBs	Pass criteria All pass criteria are required to be achieved to gain a Pass	Distinction criteria All distinction criteria are required to be achieved to gain a Distinction	Outcome
	commercial relationships with clients, co-workers and employers, dealing equally with people from different backgrounds (for example gender, disability, culture, race and social background). (B5)		
Key Topic/Theme 9. Assertiveness and resilience			
B4 Assertiveness, confidence and resilience – dealing with unexpected situations, pressure to complete work safely and on time, resolutely advising less-informed parties of realistic completion times and the rationales of the processes involved.	Discusses how they dealt with unexpected situations, how they managed internal pressure to complete work safely and on time, how they advised less-informed parties in a correct manner of realistic completion times of particular maintenance or repair activities and provided rationales of the processes involved.	Evaluates how successful they were in dealing with unexpected situations. Describes how they varied their approach when managing completion times, depending on the customer and their response.	Choose an item.

Comments on evidence presented to justify assessment decisions
Click or tap here to enter text.

Post assessment

- The apprentice must **not** be given an indication of what grade they may have achieved as the recommended grade to be awarded is subject to internal quality assurance by Open Awards. However, the IEPA must provide the apprentice of an indication as to when they can expect to receive their results.
- The IEPA must clearly explain the appeals, retakes and resits process to the apprentice.

Notes on grading

All pass criteria are required to be achieved to achieve a Pass; if they are not all achieved, the outcome is a Fail.
All pass **and** all distinction criteria are required to be achieved to achieve a Distinction.

No. of pass criteria met	Click or tap here to enter text.
No. of distinction criteria met	Click or tap here to enter text.
Recommend grade awarded	Choose an item.

Developmental feedback for improvement in the event of a recommended Fail grade (To be sent by Open Awards to the apprentice and employer)				
Click or tap here to enter text.				
Recommend (please tick)	**Resit**	Choose an item.	**Retake**	Choose an item.

Confirmation

I confirm that this is an accurate record of the assessment undertaken and that the evidence presented during the assessment by the apprentice meets the requirements of the standard for authenticity, currency, sufficiency, independence, reliability and validity.

IEPA Signature:	Click or tap here to enter text.	**Date:**	Click or tap to enter a date.
Name of IQA (if sampled)	Click or tap here to enter text.	**Date:**	Click or tap to enter a date.
Signature of IQA	Click or tap here to enter text.	**IQA Ref:**	Click or tap here to enter text.

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Optional section - IEPA self-reflection on assessment (e.g., link to CPD plan)
Click or tap here to enter text.

Appendix 7 EPA Planning Form

EPA Planning Form

This form is applicable to any End-point assessment (EPA) activity where the assessment(s) is undertaken at a venue not directly managed by Open Awards and to which the independent End-point IEPA (IEPA) is required to attend in-person (i.e., the assessment(s) is undertaken face-to-face and not remotely).

The form must be fully completed by the provider or employer (as appropriate) and uploaded to the Open Awards Secure Portal at the same time as the assessment(s) is booked. Where remedial actions are identified, these must be addressed prior to the assessment day.

Full address of assessment venue	Click or tap here to enter text.
Location IEPA should report to upon arrival	This is important on large sites where there may be multiple receptions/ entrances. E.g., "*Reception in Building 'C' on the attached map*" Click or tap here to enter text.
Name of contact person at venue	This person will be responsible for meeting the IEPA on arrival, providing an appropriate health & safety briefing and must be available throughout the assessment(s) to deal with queries from the IEPA or emergencies Click or tap here to enter text.
Telephone of contact person at venue	Landline Click or tap here to enter text. Mobile Click or tap here to enter text.
Access arrangements	Is there anything the IEPA should be aware of. E.g., postcode to use with Sat Nav if different from above, car parking arrangements on/ off site, access from nearest train station Click or tap here to enter text.
Specific requirements the IEPA should be aware of	E.g., is PPE required and if so, is the IEPA expected to provide this or will it be provided for them Click or tap here to enter text.
Name of person completing this form	Click or tap here to enter text.
Job title/ position	Click or tap here to enter text.
Date form completed and uploaded to Open Awards Portal	Click or tap to enter a date.

Any other relevant information that would help the IEPA plan for the EPA. E.g., challenging customers may be present or goods delivery is expected on the day of assessment. Click or tap here to enter text.

	Yes/ No	If 'No', what remedial actions will be put in place to address this prior to the assessment(s)
There is a current health & safety policy in place for the venue which covers the EPA activities, the apprentice, the IEPA and other visitors undertaking quality assurance of the assessment(s)	Choose an item.	Click or tap here to enter text.
There is appropriate liability insurance in place which covers both the apprentice, IEPA and other visitors undertaking quality assurance of the assessment(s)	Choose an item.	Click or tap here to enter text.
The provider/ employer will undertake an appropriate risk assessment relevant to the assessment(s) and share this with both the apprentice and the IEPA	Choose an item.	Click or tap here to enter text.
The apprentice will have access to any Personal Protective Equipment required and received prior training in its use and storage. This PPE will be fit-for-purpose.	Choose an item.	Click or tap here to enter text.
There is adequate, accessible and signed posted first aid provision including first aid personnel and medical supplies available on the day of the assessment(s)	Choose an item.	Click or tap here to enter text.
An emergency contact at the venue will be available for duration of the EPA	Choose an item.	Click or tap here to enter text.
There are appropriate means of fire detection and raising the alarm in the event of a fire	Choose an item.	Click or tap here to enter text.
There is an emergency procedure (e.g., fire or first aid) in place which will be communicated to the apprentice and IEPA before the assessment(s) commence	Choose an item.	Click or tap here to enter text.
The venue and the assessment environment are safe and hazards appropriately managed in line with current best practice	Choose an item.	Click or tap here to enter text.
Welfare facilities (e.g., toilets, washing, eating and changing) are adequate, safe, healthy, clean and accessible to the IEPA	Choose an item.	Click or tap here to enter text.
All necessary safety notices (e.g., warning signs, fire-related, first aid) are displayed	Choose an item.	Click or tap here to enter text.
All machinery and equipment required is in good working order, meets appropriate legal standards and has been maintained by a competent person	Choose an item.	Click or tap here to enter text.

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