

End-point assessment plan for Construction Plant Operative apprenticeship standard

Apprenticeship standard reference number	Apprenticeship standard level	Integrated end-point assessment
ST0736	2	No

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Introduction and overview

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

Full time apprentices will typically spend 15 months on-programme (before the gateway) working towards the occupational standard, apprentices must complete the required amount of off-the-job training specified by the apprenticeship funding rules. All apprentices must spend a minimum of 12 months on-programme.

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

For level 2 apprenticeships, apprentices must have achieved English and mathematics qualification in line with the apprenticeship funding rules prior to taking their EPA.

The EPA must be completed within an EPA period lasting typically 3 months after the EPA gateway.

EPA must be conducted by an organisation approved to offer services against this apprenticeship standard, as selected by the employer, from the Register of End-point assessment Organisations (RoEPAO).

The EPA consists of 3 discrete assessment methods.

The individual assessment methods will have the following grades:

Assessment method 1: Practical Assessment

- pass
- fail

Assessment method 2: Professional Discussion

- distinction
- pass
- fail

Assessment method 3: Technical Theory Test

- distinction
- pass
- fail

Performance in the EPA will determine the overall apprenticeship standard grade of:

- distinction
- pass
- fail

EPA summary table

On-programme (typically 15 months)	<p>Training to develop the occupation standard's knowledge, skills and behaviours (KSBs).</p> <p>Complete training towards English and mathematics qualifications in line with the apprenticeship funding rules</p>
End-point assessment gateway	<ul style="list-style-type: none"> • the employer is satisfied the apprentice is consistently working at, or above, the level of the occupational standard. • achieved English and mathematics qualification in line with the apprenticeship funding rules <p>Apprentices must complete:</p> <ul style="list-style-type: none"> • a portfolio of evidence which contains written and documentary evidence as outlined on page 5.
End-point assessment (which will typically take 3 months)	<p>Assessment Method 1: Practical assessment</p> <ul style="list-style-type: none"> • pass • fail <p>Assessment Method 2: Professional discussion</p> <ul style="list-style-type: none"> • distinction • pass • fail <p>Assessment Method 3: Technical theory test</p> <ul style="list-style-type: none"> • distinction • pass • fail

Length of end-point assessment period

The EPA will be completed within an EPA period lasting typically of 3 month(s), after the EPA gateway.

Any supporting material which underpins an EPA assessment method should be submitted at gateway.

Order of assessment methods

The assessment methods can be delivered in any order. The individual tasks making up the Practical Assessment can also be delivered in any order.

Gateway

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

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

- achieved English and mathematics qualification in line with the apprenticeship funding rules

A portfolio of evidence meeting the following requirements:

- apprentices must compile a portfolio of evidence during the on-programme period of the apprenticeship
- it must contain evidence related to the KSBs that will be assessed by the professional discussion
- the portfolio of evidence will typically contain a minimum of 16 discrete pieces of evidence mapped against all of the relevant KSBs mapped to the professional discussion
- evidence may be used to demonstrate more than one KSB; a qualitative as opposed to quantitative approach is suggested
- evidence sources may include:
 - workplace documentation or records, for example workplace policies and procedures, records
 - drawings and or specifications the apprentice has worked to
 - witness statements
 - annotated photographs
 - video clips (maximum total duration 2 minutes per clip); the apprentice must be in view and identifiable at all times.

This is not a definitive list; other evidence sources are possible.

- it should not include any methods of self-assessment
- any employer contributions should focus on direct observation of performance (for example witness statements) rather than opinions
- the evidence provided must be valid and attributable to the apprentice; the portfolio of evidence must contain a statement from the employer and apprentice confirming this
- the portfolio of evidence must be submitted to the EPAO at the gateway.

The portfolio of evidence is not directly assessed. It underpins the professional discussion and therefore should not be marked by the EPAO. EPAOs should review the portfolio in preparation for the professional discussion in order to prepare questions but are not required to provide feedback after this review of the portfolio.

Assessment methods

Assessment method 1: Practical Assessment

(This assessment method has 7 components.)

Overview

Apprentices must be observed by an independent assessor completing 7 practical demonstrations in which they will demonstrate the KSBs assigned to this assessment method. The EPAO will arrange for the practical demonstration to take place in consultation with the employer. Practical demonstrations must be carried out over a total assessment time of 5 hours and 30 minutes. The demonstrations may be split and delivered in any order, held over a maximum of 2 working days. The reason for this is to allow flexibility of the demonstrations in order to access the various machine types which may be situated at different working areas or locations.

Note: As the make and model of the machines used in the assessment may be different to those used in the apprentice's workplace, apprentices must be provided with additional machine-control familiarisation time with the machines provided for the practical assessment. This familiarisation time depends on the machines types the apprentice has used within the workplace but will not exceed 30 minutes in duration and does not form part of the stated assessment time. The apprentice must be supervised for safety reasons by the independent assessor or member of the support staff during the familiarisation period and the apprentice must not undertake the practical activities in any of the components during the familiarisation time.

Comfort breaks are permitted as necessary. The independent assessor has the discretion to increase the time of the practical demonstration tasks by up to 10% each to allow the apprentice to complete the task that is part of this element of the EPA.

The independent assessor may conduct and observe one apprentice during this assessment method.

Practical demonstrations must be conducted in one of the following locations:

- the employer's premises
- a suitable venue selected by the EPAO (for example a training provider's premises or another employer's premises)

Questions and resources development

EPAOs will produce (as detailed in each component) specifications to outline in detail how the practical demonstrations will operate, what it will cover and what should be looked for. It is recommended that this be done in consultation with employers. EPAOs should put measures and procedures in place to maintain the security and confidentiality of their specifications if employers are consulted. Specifications must be standardised by the EPAO.

EPAOs must develop 'practical specification banks' of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure they, and the specifications they contain, are fit for purpose. The specifications, including questions relating to underpinning KSBs must be varied, yet allow assessment of the relevant KSBs.

Assessment method 1 component 1: Operator-level maintenance and machine preparation for work

This component must be carried out over an assessment time of 45 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

Observing apprentices carrying out a practical activity is to ensure that they can extract and apply technical information from given sources of information to undertake operator-level servicing and preparation requirements. This activity checks and replicates what they are expected to do unaided on site and is a requirement under legislation. Certain key skills such as extracting information, correctly using personal protective equipment, dealing with and replenishing fluids and working at height cannot be adequately checked through other assessment methods. Extracting information from the operator's manual for the specific machine is a key skill because the format and layout differs between manufacturers and machine types. Operatives need to be able to navigate the manual of each machine type that they operate. As a number of checks are visual and do not entail a practical activity for example examining the condition of certain components such as the condition of hydraulic lines, the use of questions ensures that apprentices know what they are looking for.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

Apprentices will carry out basic operator-level maintenance, equivalent to daily and weekly (items and work-preparation activities, in accordance with the manufacturer's instructions taken from the operator's manual and other relevant information sources, such as decals on a tracked machine and a forklift.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- carrying out basic operator-level maintenance duties and pre-work checks
- carrying out visual checks on all components
- carrying out functional checks to ensure the machines are safe for the working activities

EPAOs will create and set open questions to assess related underpinning KSBs. The questions can be asked both during and after the task. The independent assessor must ask a minimum of 6 questions.

There may be breaks during the practical demonstration to allow the apprentice to move from one location or machine to another.

KSBs observed and answers to questions must be documented by the independent assessor.

The independent assessor will make all grading decisions.

EPAOs will create and set open questions to assess related underpinning KSBs.

Venue

The venue must provide:

- 2 x machines (1 x tracked machine and 1 x forklift) suitable for the maintenance and preparation activities
- suitable, clean and safe area to allow the activity to take place which entails a clean hard standing, segregated from other vehicle movements
- a pre-constructed risk assessment and method statement for the activity must be provided for apprentices to refer to

Support material

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

- PPE equipment such as gloves, eye protection etc. for maintenance activities (these can be provided by the employer but informed in advance by the EPAO of what types of PPE are required).
- operator's manual specific to the make and model of machines
- appropriate tools, equipment and environmental protection materials
- fluids, greases and consumables where replenishment may be required
- access and work-at-height fall-prevention equipment where required
- barriers or equipment to form an exclusion zone
- other equipment deemed necessary to carry out this activity

Assessment method 1 component 2: Travelling and manoeuvring items of plant

This component must be carried out over an assessment time of 45 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

To ensure a range of skills and understanding have been learnt, travelling and manoeuvring specific types of plant can only be assured by direct observation as accuracy, positioning and configuration of each machine is a crucial safety element of the occupation. Many types of

plant can become unstable if driven on unsuitable conditions such as slopes and uneven ground, or cause major damage to structures if struck and therefore, it is crucial that apprentices demonstrate safe manoeuvring practices with the relevant machines.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

Apprentices will travel two machines (a tracked machine and a roller) from a given starting place to a given parking area requiring a travel distance of at least 50 metres per machine and which involves being able to negotiate at least two sets of restrictions, poor and uneven ground, inclines (up and down) and areas that have restricted manoeuvring room such as travelling between structures - temporary or permanent.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- travel the tracked machine and the roller from the given starting place to a given parking area
- negotiate restrictions and areas that have restricted manoeuvring room - simulated or actual with a maximum clearance of 100 mm each side of the machine when passing through
- make tight turns of at least 90 degrees whilst passing through restrictions having a maximum 100 mm clearance each side of the machine
- travel and manoeuvre on uneven, rough terrain
- travel up and down inclines

There may be breaks during the practical demonstration to allow the apprentice to move from one location and or machine to another.

KSBs observed must be documented by the independent assessor.

The independent assessor will make all grading decisions.

Venue

The venue must provide:

- 1 x tracked excavator of 10 tonnes minimum
- 1 x ride-on roller
- ground to allow the travelling and manoeuvring of each item of plant that includes a parking area for each machine and a designated travel route (minimum 50 metres) that involves undulating, uneven terrain
- an incline for travelling up and down
- areas of restricted width. This may be simulated through the placing of temporary equipment. The route for each machine must require each machine to make turns of at

least 90 degrees and pass between restrictions that simulate a restricted-space construction site. The maximum space allowed each side for the machines when passing through a restriction is 100mm per side

Note: *the rough terrain and incline (typically 30% for ride on rollers and 60-70% for tracked excavators) must be of such that it is challenging for apprentices but within the parameters of safe operation as deemed by the manufacturers.*

Support material

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

- materials, structures to create restricted manoeuvring room.
- a specification plan indicating to apprentices a safe route that must be followed. The specification must indicate unsafe or restrictions within the area and route and direction to pass through structures with limited manoeuvring room.
- risk assessment and method statement for the activity.

Assessment method 1 component 3: Carry out defined activities with a forklift

This component must be carried out over an assessment time of 50 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

The core function of this machine is to pick up, carry and place a variety of loads mounted on the forks. In carrying out the duty of moving loads, the machine must be operated within the confines of the manufacturer's requirements, otherwise the machine could become unstable and roll over. Therefore, demonstration of carrying loads and placing them, including at height, is the only reliable assessment method able to capture the key skills required to competently and safely operate a forklift.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

Apprentices will operate the forklift and demonstrate picking up, travelling with and placing a given number of pallet-mounted loads to various places including stacking, placing at height and within a restricted area. Apprentices will further travel with the loads across uneven terrain to demonstrate the ability to safely transport loads in all situations.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the

apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- picking up 2 different pallet-mounted loads
- travelling with one load across uneven terrain
- placing the loads at given points. This will include:
 - a) placing one load at height onto a structure that requires the forks to be at least 75% of their maximum working height
 - b) retrieving a load from height and placing at a designated point at ground level.
 - c) stacking one load on top of another
 - d) place a load within an area of restricted space, having a maximum all-round clearance of 100mm
- parking, shutting down and isolating the forklift

There may be breaks during the practical demonstration to allow the apprentice to move from one location to another.

KSBs observed must be documented by the independent assessor.

The independent assessor will make all grading decisions.

Venue

The venue must provide:

- 1 x forklift meeting current legislation with a carrying capacity of 2 tonnes minimum and has rough-terrain capability
- area of ground that:
 - a) has a flat, level and clean area that allow loads to be picked up and placed
 - b) uneven terrain for travelling

The area needs to be segregated from other machine movements. The ground where the picking and placing of loads is to take place must be able to safely support the combined weight of forklift and load, including any loading applied by the stabilisers (if fitted).

Note: the uneven terrain must be of such that it is challenging for the apprentice but within the parameters of safe operation as deemed by the manufacturer.

Support material

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

- 2 x pallet mounted loads of known weights with one load at least 30% of the machine's maximum rated carrying capacity. This is important as machine characteristics change with a weighted load
- a structure that conforms with legislation of a height which is at least 75% of the maximum working height of the forks, able to safely support the weight of a load and any additional shock loading

- the following table highlights the adjustments that are to be made if the machine has an operating height that exceeds the height of the load out tower, these adjustments are to ensure that the 75% maximum working height is utilised, taken from CPCS A17

If a machine having an operating height in excess of 16 metres is being used for the test, the following concession may be used as an alternative	
A loading-out tower having a height of 12 metres may be used providing there is a minimum distance, as shown in the table, from the base of the tower to the fork tips of the telehandler when the tips of the forks are facing the tower	
Operating height (metres)	Minimum distance (metres)
17	2
18	2
19 metres and above	3

- specification document that comprehensively outlines the required activities including maximum allowed tolerances, including that:
 - all loads must be placed within 100mm vertically when stacking and
 - within 100 mm horizontally when being placed in a restricted space.
- equipment to facilitate restricted spaces for load placing.
- barriers or equipment to form an exclusion zone.
- pre-devised risk assessment and method statement for the activity.

Assessment method 1 component 4: Carry out defined activities with the 360 excavator

This component must be carried out over an assessment time of 1 hour and 15 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

The principle function for the occupation with this machine is to excavate ground, load material into a transporting vehicle and lift basic loads. A competent excavator operator is expected to dig below ground level and form, for example, a trench of specific dimensions in both length, width and height to allow services such as drainage, electrical cables etc. to be laid. The task of excavating, backfilling and loading a vehicle and lifting a suspended load are key skills best assessed by a practical activity and ensures that safety issues such as maintaining visibility,

stability, technique and accuracy have been demonstrated by apprentices to ensure full competency.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

Apprentices will, using the bucket fitted to the excavator, excavate ground to create, for example, a trench for services such as pipework in accordance with a given specification and tolerance; load earth into a transporting vehicle such as a dumper; refill the trench with the excavated soil and level the area; lift a load and place at a designated place and on completion of the activities, park and shut down the machine.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- travelling the excavator a minimum of 20 metres from starting point to a given working area
- excavating a trench according to a given specification and tolerance
- loading earth into a transporting vehicle such as a dumper
- refilling and consolidating the excavated area back to the original contours
- lifting a given suspended load and place at a given point which involves a change or radius and slewing action of at least 90 degrees
- parking, shutting down and isolating the machine

There may be breaks during the practical demonstration to allow the apprentice to move from one location to another and for meal breaks.

KSBs observed and answers to questions must be documented by the independent assessor.

The independent assessor will make all grading decisions.

Venue

The venue must provide:

- 1 x excavator of not less than 10 tonnes that meets current legislation, fitted with an excavating bucket of not less than 600mm
- self-propelled vehicle for loading material into for example dumper or dump truck, which must be capable of receiving at least 3 full bucket loads of material from the loading machine
- ground that is clear of surface and underground hazards and suitable for excavations to be carried out to at least a depth of 1.5 metres, plus is of a length that allows an excavation of at least 2 x the length of the machine (including the length of the boom and extended dipper arm) to be carried out. There needs to be sufficient room to allow the placing of spoil alongside the trench a minimum of 1 metre clearance from the trench sides

- stockpile of spoil for loading into the vehicle
- flat area for the lifting and placing of a load

Support material

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

- marking and measuring equipment to ascertain the trench location, length, depth and tolerances
- a work specification which states that the length of the trench needs to be straight, of a length equivalent to 2 x the length of the machine (including the length of the boom and extended dipper arm), is 1 x bucket width and specifies a depth of 1 metre
- suitable load able to be attached to the excavator using appropriate lifting accessories.
- slinger or signaller assistance for the lifting and placing of the load
- barriers or equipment to form an exclusion zone around the excavating area
- pre-devised risk assessment and method statement for the activities including the lifting operation

Assessment method 1 component 5: Carry out defined activities with the Dumper or Dump truck

This component must be carried out over an assessment time of 45 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

The prime function of this machine type is to transport earth and other materials around a site. This requires apprentices to drive the dumper to the correct loading position following instructions from the loading machine operator, transport a heavily loaded machine and discharge the material over an edge or into an excavation. The activity of driving and discharging the load at a given point is safety critical and understanding of safe procedures and ability to position the vehicle where visibility may be limited is an essential observational requirement best demonstrated by the assessment method.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

Apprentices will drive an unladen dumper or dump truck to the loading machine and the skip or body loaded to capacity from which it is to be transported following a defined route to a discharge area. Each load in the skip or body will be discharged at a different position before departing the discharging area from which the machine will be parked at a designated place.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- driving the dumper or dumper truck from a parked position to the loading area
- manoeuvring the machine into position for loading following signals from the loading machine operator and preparing for each loading activity
- once the skip or body is loaded to capacity, transporting each load to a designated discharge point whilst following a defined haul-road route
- manoeuvring the machine up to designated discharging points
- discharging the materials into the trench or over the edge
- isolating and securing the machine at the end of the activities

There may be breaks during the practical demonstration to allow the apprentice to move from one location to another and for meal breaks.

KSBs observed must be documented by the independent assessor.

The independent assessor will make all grading decisions.

Venue

The venue must provide:

- 1 x forward tipping dumper of minimum 3 tonnes capacity or a rear-tipping dump truck of minimum 12 tonnes capacity
- loading machine – either a 360 degree or 180 degree excavator, proportionate to the size of the dumper or dump truck
- ground that is clear of surface and underground hazards for travelling and manoeuvring
- sufficient area and length of haul road to allow the machine to use a range of gears and speeds
- area of ground having rough, uneven terrain
- trench or edge of approximately 1 metre deep that is clear of hazards
- spoil from a stockpile or trench to load the dumper or dump truck to capacity, sufficient for a minimum of 2 loads

Support material

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

- edge protection equipment of a size that prevents the machine from inadvertently exceeding a safe distance from the edge of the trench
- barriers or equipment to form an exclusion zone for loading and discharging areas
- a specification plan indicating to the apprentice a safe haul route that must be followed between the loading and discharging point. The specification must indicate where each load is to be tipped, which is over the edge or into the trench with each load discharged adjacent to each other. A minimum of 2 x loads must be transported and discharged for this component

- pre-devised risk assessment and method statement for the activity

Assessment method 1 component 6: Carry out defined activities with the roller

This component must be carried out over an assessment time of 40 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

The principle function of the occupation with this machine is to compact ground to a given specification, requiring the roller to follow a defined and precise rolling pattern. The procedure, preciseness, pattern of rolling, speed to be travelled and repositioning for each pass is best demonstrated within a practical activity exercise.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

The apprentice will travel the roller, following preparation activities, to the area requiring compacting. They will roll and compact the given material according to a given compacting specification which details the speed, amplitude, pattern and number of passes that are required. On completion of the task, the roller will be parked in a given area, shut down and isolated.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- travelling the roller to the compacting area
- compacting the material within a given area according to the given compacting specification
- parking the machine, shutting down and isolating

There may be breaks during the practical demonstration to allow the apprentice to move from one location to another and for meal breaks.

KSBs observed must be documented by the independent assessor.

The independent assessor will make all grading decisions.

Venue

The venue must provide:

- 1 x twin-drum ride-on roller of not less than 800 mm drum width, equipped with vibration mode.
- level ground that is clear of surface and underground hazards and suitable for the compacting operation to be carried out
- area containing the compactable material which is equivalent to 3 x drum width of the roller and of a minimum length of 10 x the length of the roller and have sufficient manoeuvring room at each end of the pass
- area around the compacting surface to allow roller repositioning

Support material

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

- material able to be compacted which must clearly show to apprentices where it has been compacted and where it has not
- barriers or equipment to form an exclusion zone around the compacting area
- compacting specification which must detail the level of amplitude and frequency settings required for the task and requires at least 2 x passes over the whole compactable area
- pre-devised risk assessment and method statement for the activity

Assessment method 1 component 7: Carry out marshalling activity for manoeuvring an item of plant or vehicle

This component must be carried out over an assessment time of 30 minutes. The independent assessor has the discretion to increase the time of the practical demonstration by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA.

The rationale for this assessment method is:

One of the roles of the occupation is to understand site layout and vehicle movements, whether plant or other vehicles such as delivery or supporting vehicles. The operative will need to marshal vehicles into position either as a general site-supporting role or where they need to support their own activities such as marshalling a refuelling vehicle or dump truck into the correct position. Being around moving vehicles as a pedestrian is a major safety hazard and correct positioning of the marshaller to be in a safe place whilst marshalling a moving vehicle is a crucial skill which can only be successfully measured by direct observation.

Delivery

Apprentices must be provided with both written and verbal instructions on the tasks they must complete, including the timescales they are working to.

The practical demonstration should be conducted in the following way to take account of the occupational context in which the apprentice operates:

The apprentice will direct and guide a moving vehicle from a defined location to a designated location which has restrictions so that the vehicle driver is reliant upon the marshaller for correct positioning.

The following activities **MUST** be observed during the practical demonstration, that is because a practical demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method.

- agreeing and establishing a hand-signal communication method between the vehicle driver and marshaller
- marshalling the vehicle from a designated position in a reverse direction and in a straight line through restricted spaces, followed by a 90 degree turn into an area having restricted space
- signalling the emergency stop procedure during the reversing activity to the machine operator

EPAOs will create and set open questions to assess related underpinning KSBs. The questions can be asked after the practical demonstration. The independent assessor must ask a minimum of 4 questions. Questioning must be completed within the total time allowed for the practical demonstration.

There may be breaks during the practical demonstration to allow the apprentice to move from one location to another and for meal breaks.

KSBs observed and answers to questions must be documented by the independent assessor.

The independent assessor will make all grading decisions.

Venue

The venue must provide:

- 1 x wheeled vehicle of at least 3.5 tonnes capacity or Maximum Authorised Mass equipped with functional rear view mirrors on each side and suitable for reversing activities
- level and clean ground that is clear of hazards and of sufficient area to allow a full range of vehicle movements

Support material

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

- barriers or equipment to form an exclusion zone for the manoeuvring area
- equipment to create restrictions for the moving vehicle
- a designated and marked 'safe-zone or refuge' area for the marshaller if communication between the marshaller and vehicle driver is lost
- appropriate PPE for the marshaller.
- pre-devised risk assessment and method statement for the activity

Assessment Method 2: Professional Discussion

(This Method has 1 component.)

Overview

This assessment will take the form of a professional discussion, which must be appropriately structured to draw out the best of the apprentice's competence and excellence and cover the KSBs assigned to this assessment method. It will involve the questions that will focus on the skills, knowledge and behaviours mapped to this method and adapted to the work-place evidence contained in the portfolio.

The portfolio of evidence must be submitted to the EPAO in advance of the end point assessment at least 2 weeks in advance of the assessment taking place.

The apprentice may refer to the portfolio during the professional discussion to support their answers to the given questions.

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

A suitable venue selected by the EPAO (for example a training provider's premises);

The employer's premises.

Delivery

The independent assessor will conduct and assess the professional discussion.

The professional discussion must last for 90 minutes and cover a minimum of 16 questions to ensure the listed KSBs are effectively measured. The independent assessor has the discretion to increase the time of the professional discussion by up to 10% to allow the apprentice to complete their last answer. Further time may be granted for apprentices with appropriate needs, in line with the EPAOs reasonable adjustment policy.

During this method, the independent assessor must devise a set of questions based on the portfolio of evidence and from the EPAO's question bank.

The professional discussion will be conducted as set out here:

Video conferencing can be used to conduct the professional discussion, but the EPAO must have processes in place to verify the identity of apprentices and ensure that apprentices are not being aided in some way.

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

The independent assessor will make all grading decisions.

Venue

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

Other relevant information

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

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

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

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

- outline of the assessment method's requirements
- marking materials
- question bank

Assessment Method 3: Technical Theory Test

(This Method has 1 component.)

Test Format

The test can be:

Computer based;

Paper based

It will consist of 50 questions. These questions will consist of closed response questions (for example multiple-choice questions) and be based upon the KSBs mapped to this method.

Test administration

Apprentices must have a maximum of 60 minutes to complete the test.

The test is closed book which means that apprentices cannot refer to reference books or materials.

Apprentices must take the test in a suitably controlled environment that is a quiet space, free of distractions and influence, in the presence of an invigilator. The invigilator may be the independent assessor or another external person employed by the EPAO or specialised (proctor) software, if the test can be taken online. The EPAO is required to have an invigilation policy that will set out how the test is to be carried out. This will include specifying the most appropriate ratio of apprentices to invigilators to best take into account the setting and security required in administering the test.

The EPAO is responsible for ensuring the security of testing they administer to ensure the test remains valid and reliable (this includes any arrangements made using online tools). The EPAO is responsible for verifying the validity of the identity of the person taking the test.

The EPAO must verify the suitability of the venue for taking the test and the identity of the person taking the test.

Marking

Tests must be marked by independent assessors or markers employed by the EPAO following a marking guide produced by the EPAO. Alternatively, marking by computer is permissible where question types allow this, to improve marking reliability.

Correct answers must be awarded 1 mark. Any incorrect or missing answers must be assigned 0 marks.

Question and resources development

Questions must be written by EPAOs and must be relevant to the occupation and employer settings. It is recommended that this be done in consultation with employers of this occupation. EPAOs should also maintain the security and confidentiality of their questions when consulting employers. EPAOs must develop a 'test specification' and 'question banks' of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure they, and the questions they contain, are fit for purpose. Predictability of questions may also be reduced by EPAOs developing question banks of sufficient size to avoid predictability and refresh regularly.

Required supporting material

As a minimum EPAOs will produce the following material to support this method:

- a test specification
- sample tests and mark schemes
- live tests and mark schemes
- analysis reports which show areas of weakness for completed tests and an invigilation policy

Reasonable adjustments

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

Grading

Assessment method 1: Practical Assessment

KSBs	Fail	Pass
K1 K2 K3 K5 K6 K9 K10 K13 K14 S1 S2 S3 S4 S5 S6 S7 S8 S11 S12	Does not meet the pass criteria	<p>Follows all procedures and requirements as stated in the operator's manuals and given instructions when preparing for and carrying out maintenance and operational activities, and checks the work area for hazards using given risk assessments, methods statements and other work instructions for each activity. (S1, S3, K1)</p> <p>Identifies and selects the correct tools for use. Uses tools, resources, fluids, lubricants and equipment to maintain and prepare the machine for work and disposes of materials using correct procedures. (K2, S2, S4)</p> <p>Ensures each machine is configured correctly for maintenance, preparation, travel and for the intended work. (K3, K5, S7)</p> <p>Enters and exits each machine using correct procedures, during operational and maintenance activities, applies and uses appropriate personal protective equipment, safety and performance aids and other fitted equipment such as seat belts, and carries out full visibility checks and checks for hazards before moving, during travel and during each work activity. (S5, K6)</p> <p>Follows instructions for given travel routes to and from each work area whilst maintaining safe speeds and maintains the minimum stated distance from objects, structures and other equipment. Negotiates inclines, slopes, and uneven terrain following correct direction, speed and configuration during travelling and working activities. (K9, K10, K14, S6)</p> <p>Maintains full control and stability during lifting, compacting, excavating and hauling operations at all times, using stability aids (where fitted) and braking systems and ensures that any load that is being lifting or carried on a machine is both secure and stable, and is placed or deposited accurately according to the given specifications. (S8)</p> <p>Follows given instructions such as hand signals and verbal communication, relays instructions such as hand signals and verbal communication inc. radios for marshalling, configuration and loading activities to others, and keeps clear of moving plant and vehicles during loading operations or marshalling duties. (S12, K13)</p> <p>Ensures that the each of the lifting, excavating, compacting, load hauling, moving, discharging, placing and marshalling activities meet the given operational specifications including range types, loads, tolerances, clearances, passes, speeds, restrictions, positioning, reinstatement, compaction, and constantly monitors all activities all of the time. These must include:</p> <ul style="list-style-type: none"> excavating a straight trench, equivalent to 2 x the length of the machine (including length of the boom and extended dipper arm); is 1x bucket width; a minimum depth of 1 metre and level to within +/- 25mm over its whole length. (S8)

		<p>Ensures that all machines, if leaving the operating station or following work activities, are shut down and isolated. (S11)</p> <p>Explains the process and results of visual checks on all components. (S1, K1)</p>
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Assessment method 2: Professional Discussion supported by a portfolio

KSBs	Fail	Pass	Distinction – must achieve 4 of the 5 criteria
K4 K12 S9 S10 S13 S14 S15 B1 B2 B3 B4 B5	Does not meet the pass criteria	<p>Describes the methods of communication they used with other workers and customers and the effectiveness of each communication method so that their work is carried out safely and efficiently. (S9)</p> <p>Describes how site plans and work programmes are devised and disseminated, and the level and extent of checks they undertake in the workplace to ensure that work being carried out meets the job requirements and given timescales. (S10, K4)</p> <p>Describes how they assisted in the preparing of and configuring a transporter to receive or unload an item of plant and outlines what the dangers are and what precautions need to be taken when loading and unloading plant from a vehicle bed. (S13, S14)</p> <p>Describes how they worked in accordance with health, safety, welfare and environmental requirements, what steps they take to evaluate working areas and associated activities to ensure they are in accordance with static and dynamic risk assessments and method statements. (S15)</p> <p>Outlines the organisational reporting procedures to use when unsafe</p>	<p>Describes how they demonstrated a Health and safety-first attitude, how they would anticipate potential operational health and safety issues, why they would push for change and make suggestions for improvements using appropriately tailored communication. (B1)</p> <p>Describes how they worked effectively and how they actively sought feedback on their own performance, describing what improvements they subsequently made. (B2)</p> <p>Describes how they have enhanced positive commercial relationships in the workplace with customers and stakeholders. (B3)</p> <p>Describes the teamworking abilities they carried out through supporting or mentoring other workers that ensured safety and efficiency during operations in completion of tasks for the work programmes. (B4)</p> <p>Describes how they adopted an enhanced professional approach by acting as an ambassador for the employer and conducting extra-curricular activities that support the promotion of own company or industry and enhances social impact. (B5)</p>

		<p>situations, including environmental, are encountered. (S15)</p> <p>Describes the purpose and layout of site traffic plans, the working areas, exclusions zones and authorised passages for plant movement. (K12)</p> <p>Describes the importance of following organisational H & S procedures and guidance of senior team members, how they acted in accordance to H & S requirements including evaluating the operation for hazards and appropriate actions taken, and the implications of taking short cuts. (B1)</p> <p>Describes examples of work they carried out which demonstrates it was achieved in a reliable and productive manner. (B2)</p> <p>Describes how their behaviour met the values of their employer including how they dealt with customers and stakeholders and how they formed and enhanced relationships that created and maintained effective working relationships. (B3)</p> <p>Describes how they worked and engaged collaboratively and effectively as a team member and with various co-workers and supervisors that produced safe and efficient working, achieving results through independence, resourcefulness and ability whilst being accountable for their own actions. (B4)</p> <p>Describes what professional approaches they applied to their work, colleagues and clients, how they are demonstrating politeness and courtesy to others and how they would question and challenge others when procedures are not being followed. (B5)</p>	
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Assessment method 3: Technical Theory Test

KSBs	Fail	Pass	Distinction
K7 K8 K11 K15 K16 K17 K18 K19	Scores 39 marks or below	Scores 40 marks or above	Scores 50 marks

Overall EPA grading

All EPA methods must be passed for the EPA to be passed overall. A distinction is obtained by achieving a distinction in the professional discussion and technical theory test.

Re-sits and re-takes

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

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

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

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

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

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

Roles and responsibilities

Role	Responsibility
Apprentice	<ul style="list-style-type: none"> • Complete the on-programme element of the apprenticeship. • Prepare for and complete the EPA. • Complete the portfolio.
Employer	<ul style="list-style-type: none"> • Identify when the apprentice is ready to pass the gateway and undertake their EPA. • Notify the EPAO that the apprentice has passed the gateway. • Ensure the portfolio work record book meets the minimum standard and submit to the EPAO. • Should not be involved in the delivery of the EPA.
EPAO	<p>As a minimum EPAOs should:</p> <ul style="list-style-type: none"> • appoint assessors that meet the specific skill and experience requirements (as defined in the IQA section) • appoint administrators or invigilators and markers to administer or invigilate and mark the EPA • provide training and CPD to the independent assessors they employ to undertake the EPA • have no direct connection with the apprentice, their employer or training provider i.e. there must be no conflict of interest • have processes in place to conduct internal quality assurance and do this on a regular basis • organise standardisation events and activities in accordance with this plan's IQA section • organise and conduct moderation of independent assessors' marking in accordance with this plan • have, and operate, an appeals process • ensure the facilities and resources required to conduct all aspects of the end point assessment • have not provided any form of training to the apprentice.
Independent assessor	<p>As a minimum an independent assessor should:</p> <ul style="list-style-type: none"> • be independent of the apprentice, their employer and training provider(s) i.e. there must be no conflict of interest • hold or be working towards an independent assessor qualification for example A1 and have had training from their EPAO in terms of good assessment practice, operating the assessment tools and grading • have the capability to assess the apprentice at this level • attend the required number of EPAOs standardisation and training events per year (as defined in the IQA section)

	<ul style="list-style-type: none"> • have the requisite skills, knowledge and experience to successfully assess the occupation (as defined in the IQA section).
Training provider	<p>As a minimum the training provider should:</p> <ul style="list-style-type: none"> • work with the employer to ensure that the apprentice is given the opportunities to develop the KSBs outlined in the standard and monitor their progress during the on-programme period • advise the employer, upon request, on the apprentice's readiness for EPA prior to the gateway • use only qualified trainers having the specified occupational skills, knowledge and experience • plays no part in the EPA itself • devises in conjunction with the employer a suitable training programme based on the duties and KSB, supported with ongoing assessments.
Supporting staff	<ul style="list-style-type: none"> • The EPAO is to provide support staff (one or more) to support plant operations practical tasks. These would include the loading of dumpers or dump trucks using an excavator, driving dumpers or dump trucks to be loaded by excavators, attaching and detaching loads to the excavator and driving vehicles to be marshalled during the practical tasks of the EPA. • Support staff provided for each task need to be experienced in carrying out the duty and be independent of the apprentice, their employer and training provider(s) i.e. there must be no conflict of interest.

Internal Quality Assurance (IQA)

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

- appoint independent assessors who have knowledge of the following occupational areas:
construction plant operations on construction sites including operations involving 360 degree excavators, ride on rollers, forklifts, dumpers and plant marshalling activities
- appoint independent assessors who have an appropriate assessor qualification (for example A1)
appoint independent assessors who are competent to deliver the end-point assessment and who meet the following minimum requirements: Have the following operational experience on the following machine types:
 - forklifts - 1 year
 - ride-on roller - 1 year
 - excavator 360 - 2 years
 - dumper or dump truck - 1 year
- hold a construction-based scheme card bearing the CSCS logo for plant operations at either competent operator, trainer, tester or instructor level and endorsed with all of the following plant categories: excavator 360 above 10 tonnes; rough-terrain forklift or telescopic handler; forward tipping dumper or dump truck; and ride-on roller.
(Independent assessors can only assess on the machine types they hold a CSCS-badged card meaning several assessors may be required to conduct the practical activities)
- provide training for independent assessors in terms of good assessment practice, operating the assessment tools and grading
- have robust quality assurance systems and procedures that support fair, reliable and consistent assessment across the organisation and over time
- operate induction training and standardisation events for independent assessors when they begin working for the EPAO on this standard and before they deliver an updated assessment method for the first time
- ensure independent assessors attend standardisation events on an ongoing basis and at least once per year

Affordability

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

Using an employer's premises.

Assessing multiple apprentices simultaneously.

Online assessment.

Mapping of knowledge, skills and behaviours (KSBs)

Assessment method 1: Practical activities using the machines and providing supporting services

Knowledge
K1 The operator-level servicing, checks and maintenance requirements for the range of plant.
K2 How tools and equipment for maintenance, checks, servicing and configuration requirements are to be used and maintained.
K3 How to extract information from the operator's manual and electronic readout systems to prepare and use the machine effectively.
K5 What resources and ancillary equipment the machine will require to carry out core operational functions.
K6 The function and use of all controls, gauges, switches and performance aids to carry out machine operations.
K9 How the machine should be manoeuvred and set for operational activities.
K10: What the hazards and requirements are for manoeuvring the machine around construction sites and working environment.
K13 The types of hand signals and verbal instructions (inc. radio use) required for the movement of plant and vehicles.
K14 The manoeuvring characteristics, limitations of manoeuvrability and visibility limitations of plant, supporting plant and delivery vehicles.

Skills
S1 Extract information from a variety of sources for basic servicing, checks, operational and maintenance requirements.
S2 Select and use tools, lubricants and equipment required for operator-level maintenance, checks, servicing and configuration requirements.
S3 Identify and apply information from a range of sources so that the machine is set for the work and for the work to be carried out.
S4 Identify and source materials, equipment and consumables for operational requirements.
S5 Prepare and set the machine for travelling purposes.
S6 Travel the machine across a range of ground, surfaces and in a range of operational environments and conditions inc. where relevant on inclines, and on and from a transporter.
S7 Plan, configure and set the machine to carry out the required work activity.
S8 Operate the machine in accordance with given instructions for excavating, compacting, loading, lifting, moving, discharging and placing activities relevant to the machine being used.

S11 Position, configure and shut down the machine when work activities cease and isolate and secure the machine and relevant equipment and structures to prevent unauthorised use or access.

S12 Marshall the movements of a range of plant and delivery vehicles for positioning and safe movement requirements.

Assessment method 2: Professional Discussion supported by a portfolio

Knowledge

K4 How site plans and work programmes are devised, used and disseminated to relevant parties and how they determine how the work is to be carried out.

K12 The purpose and layout of site traffic plans, the working areas, exclusions zones and authorised passages for the movement.

Skills

S9 Identify, use and maintain effective communication with co-workers, supporting staff and supervisors to carry out the work safely and efficiently.

S10 Carry out checks (through self and with others) that the work being carried out meets the job requirements and timescales.

S13 Assist in the setting up, configuring and positioning of plant to carry out specific work functions.

S14 Assist in preparing and securing a transporter and the items of plant during the loading and unloading activity for transportation purposes.

S15 Work in accordance with health, safety, welfare and environmental requirements, evaluate the working area and activity according to static and dynamic risk assessments and method statements, and report on unsafe situations following organisational procedures.

Behaviours

B1 Health and Safety-first attitude - Is aware of the importance of following procedures and following guidance of senior members of the team due to the many risks and hazards present in the work environment and acts in accordance to H & S requirements, constantly evaluating the operation for hazards and takes appropriate actions whilst following safe systems of work, avoids taking short cuts that may increase risks.

B2 Working effectively - undertakes the work in a reliable and productive manner.

B3 Positive customer relationships - Behaves in accordance with the values of the employer; treats customers and stakeholders with courtesy and responds quickly to their requirements, forming and enhancing customer relationships, creating and maintaining effective working and commercial relationships.

B4 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, operates as an effective team member and under supervision, takes responsibility, accountability and ownership of their own actions and for the completion their own work.

B5 Attitude and discipline - Adopts a professional approach to the work and to colleagues and clients and shows professionalism whilst being polite and courteous to peers, managers, clients, general public and others, questions and challenges others when procedures are not being followed.

Assessment method 3: Technical Theory Test

Knowledge
K7 The characteristics, functions, uses and limitations of use of the relevant item of plant.
K8 The factors that affect the stability and safe operation of the relevant item of plant.
K11 The types of planning and communication methods that are relevant and effective in a variety of work situations.
K15 How a transporter needs to be set to allow the loading and unloading of plant.
K16 The dangers and precautions when loading and unloading plant from a vehicle bed.
K17 The securing procedures required for a range of plant including tracked, wheeled and smooth-drum types.
K18 The health, safety, wellbeing and environmental requirements and considerations that apply for operational and maintenance activities, such as the control of diesel and oil spills, and reporting procedures for unsafe or environmental situations.
K19 Relevant legislation and regulations including Health and Safety at Work Act, PUWER, LOLER, COSHH and the requirements for, and devising of static and dynamic risk assessments, method statements, COSHH-based assessments and permit-to-work systems.