

End-point assessment plan for Blacksmith apprenticeship standard

Apprenticeship standard reference number	Apprenticeship standard level	Integrated end-point assessment
ST0378	3	No

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Introduction and overview

This document sets out the requirements for end-point assessment (EPA) for the Blacksmith 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 Blacksmith apprentices, their employers and training providers.

Full time apprentices will typically spend 48 months on-programme (before the gateway) working towards the occupational standard, with a minimum of 20% off-the-job training. 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 3 apprenticeships and above apprentices without English and mathematics at level 2 must achieve level 2 prior to taking their EPA.

The EPA must be completed within an EPA period lasting typically 6 month(s), after the EPA gateway.

The EPA consists of 3 discrete assessment methods.

The individual assessment methods will have the following grades:

Assessment method 1: Practical Project

- Fail
- Pass
- Distinction

Assessment method 2: Skills Demonstration

- Fail
- Pass
- Distinction

Assessment method 3: Professional Discussion underpinned by workplace journal

- Fail
- Pass
- Distinction

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

- Fail
- Pass
- Distinction

EPA summary table

On-programme (typically, 48 months)	Training to develop the occupation standard's knowledge, skills and behaviours (KSBs).
End-point assessment gateway	<ul style="list-style-type: none"> • Employer is satisfied the apprentice is consistently working at, or above, the level of the occupational standard. • English and mathematics Level 2 <p>Apprentices must complete and submit:</p> <ul style="list-style-type: none"> • A workplace journal allowing the apprentice to demonstrate the knowledge, skills and behaviours across the professional discussion criteria set out in the mapping and grading sections of the EPA plan • A project brief relating to the practical project
End-point assessment (which will typically take 6 months)	<p>Assessment method 1: Practical Project</p> <p>With the following grades:</p> <ul style="list-style-type: none"> • Fail • Pass • Distinction <p>Assessment method 2: Skills Demonstration</p> <p>With the following grades:</p> <ul style="list-style-type: none"> • Fail • Pass • Distinction <p>Assessment method 3: Professional Discussion underpinned by workplace journal</p> <p>With the following grades:</p> <ul style="list-style-type: none"> • Fail • Pass • Distinction

Length of end-point assessment period

The EPA will be completed within an EPA period lasting typically of 6 months, after the EPA gateway. Any supporting material which underpins an EPA assessment method should be submitted at the Gateway.

Order of assessment methods

The assessment methods can be delivered in any order.

Gateway

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

English and mathematics at level 2.

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

For Practical Project:

- The apprentice will produce and submit a project brief to the EPAO at the Gateway
- This should demonstrate that the practical project will provide sufficient opportunity for the apprentice to meet the KSBs mapped to the practical project. The project brief is not assessed but should typically be no longer than 500 words.
- The project brief needs to include a summary of the project plan, research requirements, an overview of how the project will be planned to include timeframes (taking into account the deadlines stipulated within this EPA plan).
- The Employer and EPAO must confirm that the proposed project detailed within the project brief provides the scope for the KSBs assigned to the practical project to be met. This must be completed and signed off by the EPAO within 2 weeks of the Gateway.

For Skills Demonstration:

- No specific requirements

For Professional Discussion underpinned by workplace journal, the apprentice will be required to submit:

- A journal underpinning the knowledge, skills and behaviours across the professional discussion criteria set out in the mapping and grading sections of this EPA plan. The journal is used as an aide memoir during the professional discussion. It should be an example of work completed during the apprenticeship that the apprentice can refer to during the professional discussion to support the answers that are given.
- Apprentices should compile the journal on-programme and it should contain evidence collected throughout the duration of the apprenticeship. The journal must contain sufficient evidence to demonstrate the KSBs that will be assessed by the professional discussion.
- The journal will typically contain a minimum of 10 discrete pieces of evidence.

- Evidence must be mapped against the professional discussion KSBs. Evidence may be used to demonstrate more than one KSB; a qualitative as opposed to quantitative approach is required
- Evidence sources may include:
 - o relevant workplace documentation, for example time sheets, check sheets/quality check records, accident records, equipment check/maintenance records, sales records
 - o annotated specifications, for example drawings, cutting lists, work instructions
 - o annotated photographs
 - o CPD records, feedback from colleagues

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

- The journal should not include any methods of self-assessment. Any employer contributions should focus on direct observation of evidence rather than opinions (for example witness statements). The evidence provided must be valid and attributable to the apprentice; the journal must contain a statement from the employer confirming this.
- The journal must be submitted at the gateway.
- The journal is not assessed but is used to support and underpin the professional discussion.

Assessment methods

Assessment method 1: Practical Project

The rationale for this assessment method is:

This is the most appropriate way for the candidate to demonstrate their competence in the craft process, during the design phase of making to producing working specifications. Apprentices will be expected to produce models and/or samples as part of their project and produce a design and development report with annotations and rationales as well as evidence of any models and/or samples produced. The design/development document will allow the assessor to examine the considerations and thought process during in the design phase prior to making the practical project piece. The Blacksmith occupation works on a project by project basis, working within set timeframes to agreed deadlines. Therefore, this is the most realistic reflection of the ways in which a Blacksmith is expected to work.

Overview

The practical project consists of a design/development document and an associated project piece. The practical project commences at the gateway following confirmation from the EPAO that the submitted project brief provides the required scope for the KSBs mapped to this method of assessment to be met.

The practical project should ensure that the apprentice's work meets the needs of the business, is relevant to their role and allows the relevant KSBs to be demonstrated for the EPA. Therefore, a project brief will be agreed between the employer and the EPAO within 2 weeks after the gateway. The employer will ensure it has a real business application and the EPAO will ensure it meets the requirements of the EPA (including suitable coverage of the KSBs assigned to this assessment method).

Delivery

Apprentices will conduct a practical project and produce a manufactured project piece which is submitted alongside a design/development document.

The Practical Project will be submitted in its entirety no later than 16 weeks after the project brief has been signed off by the EPAO.

The employer will ensure the apprentice has sufficient time and the necessary resources, within this period, to plan and undertake the project.

Whilst completing the project, the apprentice should be subject to the supervision arrangements outlined below:

The apprentice will be expected to undertake work on the practical project under supervision of their employer during normal working hours but will be required to do so without contributions being made by anyone else during the assessment period. However, there may be occasions when a Blacksmith is required to work collaboratively with a number of craftspeople assembling or repairing components made by others. In such cases, the candidate and employer should detail and agree upon which components are not directly manufactured by the candidate, and these details must be included in the design/development document. The employer must ensure that if collaborative working is used during this assessment component, that the candidate still has the opportunity to evidence all of the KSBs mapped to this assessment method.

The project must be based on the following:

A project piece based on the agreed project brief submitted at the Gateway, that allows the opportunity for the apprentice to showcase the knowledge, skills and behaviours mapped to this method. The project piece should be a physically manufactured artefact and be relevant to the context of the apprentice's workplace. The project piece should be constructed to the specification as set out in the project brief.

The project piece must be submitted with a project design/development document which can be submitted in the form of a paper based or electronic document. The design/development document should contain evidence of research and development of the project piece including supporting work such as drawings, images of samples and models with annotations and commentary. The design/development document is not intended to be a lengthy, written document, and should contain mostly visual evidence (within the context of the project piece) showcasing practical development work and research carried out prior to the production of the project piece itself.

The word count of the design/development document should not exceed 1500 words (+/- 10%). This word count does not include annotations/tables/titles or the KSB mapping appendix.

As a minimum, the design/development document must contain:

- An introduction outlining the scope of the project piece
- A project plan
- Project ideas
- Research and findings
- Project development e.g. working drawings, dimensions and materials
- An evaluative statement which includes the role the apprentice played, the contribution they made and the technical skills used
- Images and/or video evidence of the completed project piece
- Project outcomes and challenges faced/lessons learnt.
- An appendix referencing to relevant KSB's mapped to this assessment method. To help ensure coverage of all KSBs for both of the project components, it is highly recommended that an appendix is included which indicates where specific KSBs can be evidenced within the practical project piece.

The design/development document must be submitted to the EPAO a maximum of 16 weeks after the project brief has been signed off by the employer and EPAO and must include images and/or video evidence of the completed project piece.

It is expected that project pieces and design/development portfolios will typically be transported together to an assessment centre or training provider premises for assessment to minimise assessment costs. It is expected that most apprentices will attend an assessment centre for the Skills Demonstration and Professional Discussion, thereby facilitating a cohort-based assessment approach to the Practical Project. The employer will be responsible for arranging the transportation of any project pieces to an assessment centre or training provider premises. In cases where large scale project pieces have been manufactured and it is impractical to transport them to an assessment centre, the EPAO will arrange for an on-site assessment to take place.

The employer and apprentice must verify that all submitted work is that of the apprentice.

Marking

An independent assessor will review and mark the design/development document and project piece holistically and in a timely manner, as determined by the EPAO, and without extending the EPA unnecessarily. Similarly, all quality control processes will be conducted in a timely manner, as determined by the EPAO.

Supporting material

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

- Outline of assessment method requirements
- Marking materials
- Examples of projects

Assessment method 2: Skills Demonstration

The rationale for this assessment method is:

The skills demonstration allows for the most robust assessment of a set of fundamental Blacksmith Skills. Regardless of workplace, every Blacksmith needs to competently and safely perform the following fundamental tasks: forging, thermal welding and cutting, machining, bench work and tool making/maintenance.

Overview

Apprentices must be observed undertaking a skills demonstration by an independent assessor completing all 5 fundamental blacksmith tasks, in which they will demonstrate the KSBs mapped to this assessment method. These tasks are:

- Forging
- Thermal welding and cutting
- Machining
- Bench work
- Tool making/maintenance

The apprentice will be provided with samples and/or specifications by the independent assessor for each of these tasks. The apprentice must then carry out the task in accordance with the sample and/or specification. The EPAO is responsible for arranging the provision of samples and/or specifications for this assessment method.

The EPAO will arrange for the skills demonstration to take place, in consultation with the employer. All 5 tasks must be carried out over a maximum assessment time of 10 hours. The independent assessor has the discretion to increase the time of the skills demonstration by up to 10% to allow the apprentice to complete the task they are working on.

The time limits for each task are as follows:

Forging: 3 hours

Thermal welding and cutting: 2 hours

Machining: 1 hour

Bench work: 2 hours

Tool making/maintenance: 2 hours

The demonstrations may be split into discrete sections held over a maximum of 2 working days, to allow for different workshop settings, tools and equipment availability as this may differ from one employer to the next.

The independent assessor may assess up to a maximum of 4 apprentices at any one time. All 4 apprentices will be observed completing the same blacksmith task at the same time in the same venue. Apprentices will be given the sample and/or specification at the start of each task, which will allow for oversight of each apprentice to ensure they do not present pre-manufactured artefacts to the assessor. The EPAO is responsible for putting measures in place to ensure that when more than 1 apprentice is being assessed simultaneously, apprentices are unable to discuss or see each other's task/methods of work during the skills demonstration.

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 following activities **MUST** be assessed during the skills demonstration, that is a skills demonstration without these tasks would seriously hamper the opportunity for the apprentice to demonstrate occupational competence in the KSBs assigned to this assessment method:

The 5 fundamental Blacksmith tasks must be assessed:

- Forging
- Thermal welding and cutting
- Machining
- Bench work
- Tool making/maintenance

Whilst demonstrating these tasks the candidate must follow the guidelines below in order to evidence all of the KSBs mapped to this method:

- Comply with company health and safety requirements and follow safe working practices at all times.
- Prepare and maintain a safe working environment, where both hand and mechanical tools are used, as well as being able to safely handle fuel, light and operate the forge.
- Demonstrate Hot Forging - efficiently manage a forge or furnace when using forge tools to hot forge, form, cut and join metals by hand and machine.
- Manufacture, prepare and maintain materials, equipment and tools as per company guidelines.
- Manufacture and maintain hand tools such as tongs, punches, chisels, hammers, anvil tools and jigs.
- Use hand operated thermal cutting and welding equipment to cut and join metal.
- Use hand operated machines for cutting, drilling and shaping components.
- Uses hand tools to cold cut and shape materials to set specification using fastening systems to join materials
- Use fastening systems.

Questioning:

The independent assessor must ask a minimum of 1 open question during each blacksmith task to assess related underpinning KSBs (i.e. a minimum of 5 questions per apprentice must be asked during the skills demonstration).

The independent assessor may use questions from a question bank generated by the EPAO or they may use their own generated questions based on their observation of the apprentice in order to assess related underpinning KSBs. Questioning must be completed within the total time allowed for the skills demonstration.

There may be breaks during the skills demonstration to allow the apprentice to move from one location to another and for meal breaks. The EPAO must ensure appropriate invigilation is in place during any planned or unplanned breaks to ensure the security of the assessment is maintained.

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

The independent assessor will make all grading decisions.

Questions and resources development

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

EPAOs will produce specifications to outline in detail how the skills 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' and 'question 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.

Venue

Skills demonstrations will typically be conducted at a training provider's or EPAO's premises but may also take place at an employer's premises. Where the skills demonstration take place on the employer's premises, it is anticipated that the employer will provide the necessary tools and equipment. The EPAO should liaise with the employer to arrange this. Where skills demonstration take place off-site, the EPAO is responsible for ensuring the apprentice has the appropriate tools and equipment to complete the task. The EPAO may liaise with the employer to provide these.

Support material

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

- Outline of assessment method requirements
- Marking materials
- Materials and tools as required
- Samples and/or specifications as required
- Sample question bank

Assessment method 3: Professional Discussion

The rationale for this assessment method is:

The professional discussion will allow some KSBs which may not naturally occur in every workplace or may take too long to observe to be assessed and the assessment of a disparate set of KSBs. A journal, collated whilst on-programme and submitted at the Gateway, can be referred to as part of the professional discussion to consolidate and evidence learning that is being discussed.

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 coverage of prior learning or activity. The professional discussion will be underpinned by a journal created during the on-programme period of the apprenticeship.

Delivery

An independent assessor will conduct and assess the professional discussion.

The professional discussion must last for 40 minutes. 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.

The professional discussion will be conducted as set out here:

The independent assessor will conduct and assess the professional discussion on a one-to-one basis. The independent assessor must ask a minimum of 8 open competence-based questions that adequately cover the grading descriptors. They may ask follow up questions where clarification is required.

During this method, the independent assessor can generate questions themselves or use those within the question bank provided by the EPAO. The contents of the journal will influence the questions selected; the independent assessor will review the journal and then select areas they wish the apprentice to expand on with reference to the identified grading descriptors. The apprentice can use the journal as an aide memoire and to support answers being given.

Apprentices must be assessed against the KSBs assigned to this assessment method as shown in the mapping of KSBs. Apprentices are expected to understand and use relevant occupational language. Questions must cover the following topics:

- Health and Safety
- Materials
- Tools
- Manufacture, conservation and repair of metalwork
- Context of the craft
- Professional Skills
- Self-Development

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.

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

- employer's premises
- a suitable venue selected by the EPAO (for example a training provider's premises)
- video conferencing can be used to conduct the professional discussion, but the EPAO must have processes in place to verify the identity of the apprentice and ensure the apprentice is not being aided in some way (i.e. use of a 360-degree camera).

Other relevant information

A structured question bank must be developed by EPAOs. The 'question bank' must be of sufficient size to prevent predictability and the EPAO must review it regularly (at least once a year) to ensure that it, and its content, are fit for purpose. The questions relating to the underpinning KSBs, 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/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 assessment method requirements
- Marking materials
- Question bank

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.

Weighting of assessment methods:

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

Grading Descriptors

Assessment Method 1: Practical Project

KSBs	Fail	Pass	Distinction
K4 K5 S2 S3 S4 S10 S11 B2	Does not meet the pass criteria	Apprentice meets all Pass grading descriptors Produces technical drawings, designs and samples in line with the project brief and presents justified reasons for selecting the final design (K5, S3) Creates and interprets instructions when manufacturing or repairing metalwork (including calculating materials and budget requirements), and responds to problems when interpreting technical specifications, seeking advice and guidance as necessary (S2) Selects and uses appropriate techniques, materials, tools and equipment to manufacture or repair metalwork whilst following the industrial standard from inception to realisation (S4) Constructs and fits work including assembling and dismantling components and products and corrects faults in metalwork (S11) Follows quality standards (including stakeholder expectations, recording work, evaluating and obtaining feedback and use of product data sheets) and conforms to relevant regulations (ISO 9001 & CE and building regulations) as required (K4, B2) Finishes project piece to agreed quality by cleaning, preparing and protecting metalwork including specifying any sub-contract finishes (S10)	Apprentice meets all Pass grading descriptors and all of the Distinction grading descriptors Evaluates the design process and suggests recommendations regarding use of materials, cost-saving approaches, improving manufacturing quality and performance functionality (K5, S2, S4) Analyses relevant regulations (including ISO 9001 & CE and building regulations) and uses analysis findings to justify the techniques, materials, tools and equipment used in the manufacturing and repair process (K4, S4)

Assessment method 2: Skills Demonstration

KSBs	Fail	Pass	Distinction
	Does not meet the pass criteria	Apprentice meets all Pass grading descriptors	Apprentice meets all Pass grading descriptors and all of the Distinction grading descriptors
S1 S5 S7 S6 S9 S8 B1		<p>Works in a safe manner during all tasks using correct PPE where required (B1)</p> <p>Follows company policies and procedures associated with safety and environment, identifying hazards and minimising risk by carrying out a risk assessment (S1)</p> <p>Demonstrates efficient forge or furnace operation and uses forge tools to hot work (forge, form, cut and join) metals by hand and machine to set specifications (S5)</p> <p>Uses hand operated thermal cutting and welding equipment to cut and join metal to set specifications (S6)</p> <p>Correctly uses hand operated machines for cutting, drilling and shaping components to set specifications (S7)</p> <p>Manufactures and maintains tools, materials and equipment to set specifications, carrying out testing and adjustment where required prior to use (S9)</p> <p>Uses hand tools to cold cut and shape materials to set specification using fastening systems to join materials (S8)</p>	<p>Work is completed without any surface flaws, galls or burns on the piece (S5)</p> <p>Work is completed without any notching, gouges or deep scratches, and all burrs removed. All chamfers and edges are consistent (S7, S9)</p> <p>Thermal welding is completed without any inclusions or distortion; all thermal-cut edges and surfaces have a consistent profile without deep notching (S6)</p>

Assessment method 3: Professional discussion

KSBs	Fail	Pass	Distinction
	Does not meet the pass criteria	Apprentice meets all Pass grading descriptors	Apprentice meets all Pass grading descriptors and all of the Distinction grading descriptors
<p>K1 K2 K3 K6 K7 B3 B4</p>		<p>Explains process for following agreed standards of health and safety for self and others; including how to choose, prepare, store and maintain materials, tools and equipment safely and the possible hazards and risks in the working environment (K1)</p> <p>Describes the properties and uses of materials used and how and why these are selected for different situations (K2)</p> <p>Describes the principles and uses of different tools, how they are manufactured, set up and maintained for safe use (K3)</p> <p>Explains finishing and protection methods within the manufacturing, conservation and repair of metalwork, including the roles and responsibilities within the process and any potential problems which may occur and how to resolve them (K6)</p> <p>Explains how to calculate for metal requirements, forging allowances, frameworks, bendings and squaring when setting up work drawings or constructions (K6)</p> <p>Explains the chemistry and physics of ferrous metals in their heat treatment, properties of common alloying elements and the chemistry of corrosion and its causes (K6)</p> <p>Describes Blacksmithing design styles, notable blacksmiths and artistic movements as well as historical and</p>	<p>Evaluates the issues of combining dissimilar metals and non-metallic materials and the associated problems which may occur (K2)</p> <p>Explains the implication of not using tools and equipment safely (K3)</p> <p>Evaluates the impact of undertaking blacksmith site-work in sensitive environments, including the effect on historical built environments and flora/fauna (K6)</p> <p>Evaluates the potential impact of poor planning for metal requirements and forging allowances when constructing complex pieces (K6)</p>

		contemporary processes and techniques (K7) Describes the importance of working as part of effective communication and teamwork to produce high quality outcomes (B3) Describes the importance of acquiring new skills, knowledge and developing professional relationships (B4)	
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Overall EPA grading

All EPA methods must be passed for the EPA to be passed overall. A distinction overall can only be achieved if distinction is achieved in both of the practical methods (i.e. method 1 and 2) as well as a pass or distinction in method 3.

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 Project	Assessment method 2: Skills Demonstration	Assessment method 3: Professional Discussion	Overall grading
Distinction	Distinction	Distinction	Distinction
Distinction	Distinction	Pass	Distinction
Pass	Distinction	Distinction	Pass
Distinction	Pass	Distinction	Pass
Pass	Pass	Distinction	Pass
Pass	Distinction	Pass	Pass
Distinction	Pass	Pass	Pass
Pass	Pass	Pass	Pass
Fail	Any grade	Any grade	Fail
Any grade	Fail	Any grade	Fail
Any grade	Any grade	Fail	Fail

Re-sits and re-takes

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

Apprentices should have a supportive action plan to prepare for the re-sit or a re-take. The apprentice's employer will need to agree that either a re-sit or re-take is an appropriate course of action. An apprentice who fails an assessment method, and therefore the EPA in the first instance, will be required to re-sit or re-take any failed assessment methods only.

The timescales for a resit/retake is agreed between the employer and EPAO. A resit is typically taken within 6 months of the EPA outcome notification. The timescale for a retake is dependent on how much re-training is required and is typically taken within 8 months of the EPA outcome notification.

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"> participate in development opportunities to improve their knowledge, skills and behaviours as outlined in the standard meet all gateway requirements when advised by the employer understand the purpose and importance of EPA and undertake EPA
Employer	<ul style="list-style-type: none"> support the apprentice to achieve the KSBs outlined in the standard to their best ability determines when the apprentice is working at or above the level outlined in the standard and is ready for EPA select the EPAO confirm arrangements with EPAO for the EPA (who, when, where) in a timely manner ensure apprentice is well prepared for the EPA should not be involved in the delivery of the EPA

EPAO	<p>As a minimum EPAOs should:</p> <ul style="list-style-type: none"> • understand the occupational role • provide training and CPD to the independent assessors they employ to undertake the EPA • provide adequate information, advice and guidance documentation to enable apprentices, employers and providers to prepare for the EPA • deliver the end-point assessment outlined in this EPA plan in a timely manner • prepare and provide all required material and resources required for delivery of the EPA in-line with best practices • use appropriate assessment recording documentation to ensure a clear and auditable mechanism for providing assessment decision feedback to the apprentice • have no direct connection with the apprentice, their employer or training provider i.e. there must be no conflict of interest • maintain robust internal quality assurance (IQA) procedures and processes, and conducts these on a regular basis • conform to the requirements of the nominated external quality assurance body • 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 • inform apprentice, training provider and employer of the results of the EPA • liaise with the EQA body for timely and appropriate verification
Independent assessor	<p>As a minimum an independent assessor should:</p> <ul style="list-style-type: none"> • understand the standard and assessment plan • deliver the end-point assessment in-line with the EPA plan • comply to the IQA requirements of the EPAO • be independent of the apprentice, their employer and training provider(s) i.e. there must be no conflict of interest • satisfy the criteria outlined in this EPA plan • hold or be working towards an independent assessor qualification e.g. A1 and have had training from their EPAO in terms of good assessment practice, operating the assessment tools and grading • have the capability to assess the apprentice at this level ie having qualified teacher status in Blacksmithing (Cert Ed FE/PGCE) or at least qualified to Associate of the Worshipful Company of Blacksmiths (AWCB) or Qualified to at least Level 5 In a Blacksmith qualification • At least 2 years' experience of delivering assessments • attend the required number of EPAOs standardisation and training events per year (as defined in the IQA section)

Training provider	<p>As a minimum the training provider should:</p> <ul style="list-style-type: none"> • work with the employer to ensure that the apprentice is given the opportunities to develop the KSBs outlined in the standard and monitor their progress during the on-programme period • advise the employer, upon request, on the apprentice's readiness for EPA prior to the gateway • prepares apprentice for EPA during the off-the-job training phase • may assist employer to select EPAO for EPA • may assist employer by making arrangements with the EPAO for the practical aspects of the EPA (who, when, where) • Plays no part in the EPA itself
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Internal Quality Assurance (IQA)

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

- appoint independent assessors who have knowledge of the following occupational areas: Significant and relevant experience of designing, producing, selecting, installing, commissioning, servicing and maintaining the range of product, tools and work activities demonstrated within the Blacksmith Apprenticeship standard.
- appoint independent assessors who have recent relevant experience of the occupation/sector at least 1 level above the apprentice gained in the last 6 years or significant experience of the occupation/sector.
- appoint independent assessors who are competent to deliver the end-point assessment
- 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 at least once per year.

Affordability

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

- assessing multiple apprentices simultaneously

- assessments may take place at EPAO or training provider premises if they have the required amount and range of equipment and facilities to allow for simultaneous multiple assessments

Professional body recognition

Professional body recognition is not relevant to this occupational apprenticeship.

Mapping of knowledge, skills and behaviours (KSBs)

Assessment method 1: Practical Project

Knowledge
<p>K4 Quality - knowledge of quality standards including those expected by the client, employer, suppliers and regulatory bodies, including methods of recording work, use of product data sheets, International Standardisation Organisation (ISO) 9001, Conformance European (CE) marking and building regulations.</p>
<p>K5 Design – knowledge of elements and principles of design, drawing conventions and techniques by hand or computer aided design (CAD). Interpreting models and samples as part of the initial design process when presenting an idea to a client or as a component of design realisation when working out production samples.</p>
Skills
<p>S2 Technical interpretation and understanding - create and interpret specifications, samples, drawings, and other written and verbal instructions for the manufacture or repair of metalwork. The identification and appropriate response to problems such as calculating jointing, forging and bending allowances, creation of working templates or jigs from drawings, arriving at an appropriate order of dismantling and construction including testing and adjustment, seeking advice and guidance as appropriate.</p>
<p>S3 Design – produce technical drawings, designs and models by hand or computer aided design (CAD) which can be interpreted by colleagues and clients when developing the final product.</p>
<p>S4 Manufacturing and repair processes - select and use the appropriate processes, techniques, materials, tools and equipment for manufacture or repair of metalwork and undertake the blacksmith making process to the industrial standard from inception to realisation. Plan and manage time effectively.</p>

S10 Finishing – clean, prepare and protect metalwork. Finish surfaces by specifying and applying specified surface treatments, coatings or coverings as required such as wire brushing, degreasing, descaling, polishing, waxing, oiling, painting and specifying sub-contract finishes such as hot dip galvanising, electro polishing and powder coating.

S11 Fitting - construct and fit work in the workshop and/or on site as appropriate, which includes assembly and dismantling of components and products and correcting faults in metalwork.

Behaviours

B2 Quality focused - work to appropriate quality standards such as working to client requirements, workshop samples, drawing specifications, historical listings, building regulations and workshop procedures, with efficient use of time, materials and resources. Record work and either self-evaluate or obtain feedback from others to improve work and working practice.

Assessment method 2: Skills Demonstration

Skills

S1 Health & Safety and working environment - maintain standards of health and safety for self and for others, using safe working practices. Prepare and maintain a safe working environment, where both hand and mechanical tools are used, as well as being able to safely handle fuel and light and operate the forge. Identify hazards and minimise risk in the working environment.

S5 Hot Forging - efficiently manage a forge or furnace when using forge tools to hot forge, form, cut and join metals by hand and machine.

S6 Thermal Welding and cutting - use hand operated thermal equipment, cutting and joining techniques to cut and join metals.

S7 Machining - use hand operated machine tools for cutting, drilling and shaping components.

S8 Bench work - use hand tools to cold cut and shape materials. Join materials using fastening systems.

S9 Tools, materials and equipment - carry out testing and adjustment. Manufacture, prepare and maintain materials, equipment and tools appropriately. Manufacture and maintain hand tools such as tongs, punches, chisels, hammers, anvil tools and jigs. Maintain equipment such as hand held machine tools, fixed forge equipment such as power hammers, presses, forges and furnaces. Fabrication, welding and engineering equipment. Preparing materials such as consumables, metal for the job, fixings and coatings.

Behaviours

B1 Promote positive safety culture – ensure at all times that work is carried out in a safe way that does not put themselves or others at risk.

Assessment method 3: Professional Discussion

Knowledge
<p>K1 Health & Safety (H&S) - health & safety process, legislation and regulations in the forge and on site including COSHH, H&S at work act 1974. Knowledge of safe work processes that ensures the safety of self and others such as personal health surveillance, hazard recognition, risk assessment, method statements, disposal of waste, equipment inspection, personal protective equipment. Knowledge of exposure, risk and prevention of flash burns, arc eye, radiant heat, noise exposure and fumes as well as knowledge of preventing musculoskeletal and manual handling injuries.</p>
<p>K2 Materials - the properties and uses of materials used for blacksmithing such as the effects of heat and working on forgeable metals. The effects of combining metals and other media such as wood, stone or plastic. Modes of supply, methods for handling and storing resources. The effects of the environment and techniques for protecting metalwork.</p>
<p>K3 Tools - the key equipment, fixed and hand tools, the principles of operation, manufacture, set up, maintenance and safe use. Hand tools such as tongs, punches, chisels, hammers, anvil tools and jigs. Hand held machine tools such as drills and grinders. Fixed forge equipment such as power hammers, presses, forges, furnaces. Fixed fabrication equipment such as guillotines, rolls, metalworkers and finishers. Fixed welding equipment such as welding plant, profile cutters and extraction systems. Fixed machine equipment such as drills, lathes, milling and grinding machines.</p>
<p>K6 Manufacture, conservation and repair of metalwork - Finishing and protection methods and processes. The occupational roles and responsibilities within the processes regarding work relationships such as knowledge of those responsible for advising the client or other relevant parties, an appreciation of the costs of time and materials in the production of forged ironwork and the issues involved in seeking approval for work to commission or for direct retail. Setting up for work, problems that may occur and how to respond to them, knowledge of relevant mathematics and science such as volumes of metal required when calculating forging allowances, linear calculations for frameworks and bending, trigonometry for squaring and calculating angles when setting up working drawings or constructions, the chemistry and physics of ferrous metals in their heat treatment, the properties of common alloying elements and the chemistry of corrosion and its causes.</p>
<p>K7 Context of the craft - the context of the craft such as design styles, notable blacksmiths and artistic movements. Historical and contemporary processes and techniques.</p>
Behaviours
<p>B3 Professionalism - have a strong professional work ethic including pride in work and attention to detail. Recognise the need for efficient and clear communication and the importance of working</p>

effectively with others. Promote and represent the craft, apply ethics and professional judgment in all areas of work. Take responsibility for own work and monitoring the work of others.

B4 Self-development - keep up to date with best practice and emerging technologies within the sector. Obtain and offer constructive feedback to others, develop and maintain professional relationships.