End-point Assessment Plan
Level 3 Metal Fabricator

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The End-point Assessment (EPA) Overview:

The responsibility for developing and delivering the EPA rests with the end-point Assessment Organisation (EPAO) that are approved to offer their services to employers for the Metal Fabricator apprenticeship standard. Only EPAO's that appear on the Education & Skills Funding Agency's register of End-point assessment organisations: https://www.gov.uk/guidance/register-of-end-point-assessment-organisations can be used. EPAOs must appoint appropriately qualified and experienced assessors to conduct the EPA as defined in this plan.

The EPA will be completed after a minimum of 12 months training has taken place and at a time that accommodates work scheduling and cost effective planning of resources, the End-point assessment must commence within 3 months from confirmation that the apprentice has met the gateway requirements.

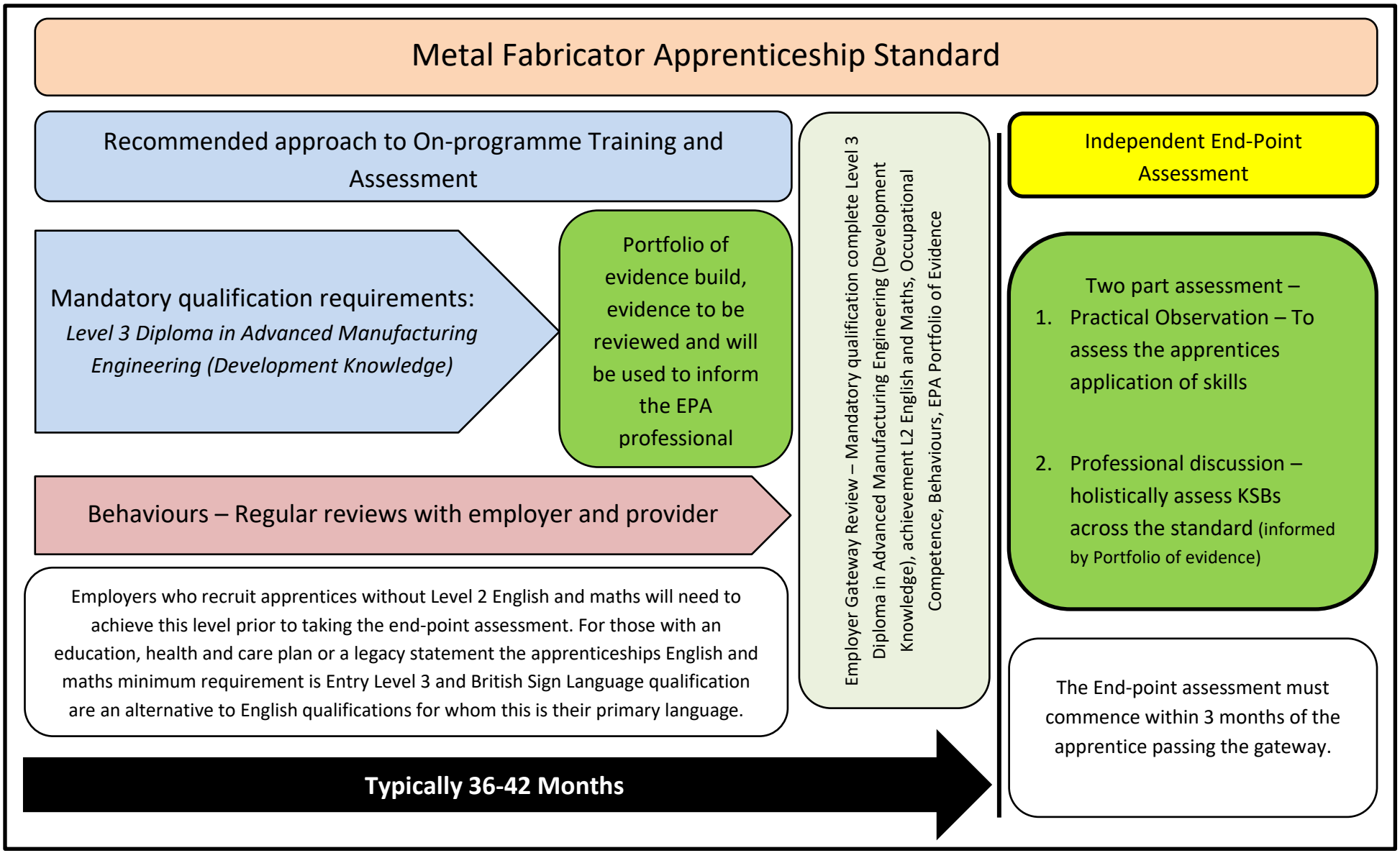
The EPA consists of 2 assessment methods:-

- Practical observation – to assess the apprentice's application of skills within the apprentice's place of work or in a suitable environment away from the workplace (e.g. In a centre approved by the EPAO)
- Professional discussion – to holistically assess KSBs across the standard and will be informed by portfolio of evidence

The EPA satisfies the requirements for the Metal Fabricator standard. The practical observation will be carried out by an independent assessor, approved by the EPAO and will take place within the apprentice's workplace, assessing the application of the apprentice's skills in line with the job role requirements. The portfolio of evidence will be reviewed by an independent assessor, approved by the EPAO and will be used to inform the professional discussion. The professional discussion may be a panel consisting of 2 members; an employer representative (if requested to do so by the EPAO) and the independent assessor (acting as Chair) appointed by the EPAO, who will make the final decision based on this process. The employer representative must be occupationally competent and will provide technical support, advice and guidance such as confirming company policies, procedures, processes, providing context on technical information or on emerging technologies. Any information provided by the employer technical expert must only be at the request of the end-point assessor who has the final say over the assessment and grade awarded. The employer technical expert must not provide evidence on behalf of the apprentice. The performance of the apprentice within the EPA will determine the apprenticeship grade of fail, pass, or distinction.

The final apprenticeship EPA decision will be made by the EPAO; successful achievement of the EPA will lead to formal certification of the apprenticeship and demonstrate that the apprentice is a competent Metal Fabricator.

Diagrammatic representation of the assessment requirements:



On-programme Assessment

The employer and training provider will use the mandatory Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge) within the Metal Fabricator Standard to develop a training plan to ensure that the apprentice receives the appropriate level of knowledge and skills to advance to and successfully complete the Independent End-point Assessment.

Employer Gateway Review for Progression to Independent End-point Assessment

Readiness for End-point Assessment (EPA)

Before going forward for the EPA, the employer must be satisfied that the apprentice has:

- Satisfactorily completed training covering the skills, knowledge and behaviours as described in the standard
- Achieved all Mandatory qualification – Level 3 Diploma in Advanced Manufacturing Engineering (Development Knowledge)
- English and mathematics at level 2 or Apprentices without English and mathematics at level 2 must have achieved level 2 English and mathematics. For those with an education, health and care plan or a legacy statement the apprenticeships English and Maths minimum requirement is Entry Level 3 and British Sign Language qualification are an alternative to English qualifications for whom this is their primary language.
- Sufficient evidence in the form of a portfolio of evidence to allow the apprentice to consistently demonstrate knowledge, skills and behaviours as described in the standard. Guidance on what should be included in the portfolio of evidence can be found within the professional discussion section

Who decides if the apprentice is ready for EPA?

Once the apprentice has successfully completed appropriate on programme training and assessment, the pre-requisite gateway requirements for EPA have been met and that they can be evidenced to an EPA organisation, the judgement on whether the apprentice is deemed occupationally competent and ready for the EPA will be made by their employer. The employer will take this decision on the basis of the knowledge, skills and behaviours attained by the apprentice and taking into consideration the apprentices' work experience, the views from the training provider where applicable and the apprentice, to inform this decision.

When satisfied that the apprentice is ready for EPA, the employer will directly (or via their lead provider) inform their selected EPAO for the EPA requirements to be planned and carried out.

End-point Assessment

End-point assessment must be undertaken by an Independent End-point Assessment Organisation that is on the Education & Skills Funding Agency's Register of End-point Assessment Organisations.

Successful achievement of the End-point assessment will lead to final certification of the apprenticeship and demonstrate that the apprentice is a fully competent Metal Fabricator.

The assessment methods can be completed in any particular order, allowing EPAOs flexibility in scheduling and cost-effective allocation of resources.

Assessment method 1 - Practical observation:

The Practical Observation will be carried out at the apprentice's place of work or an in-centre practical assessment in a suitable area away from the work place where it is not feasible to use the employer's premises and will be carried out by an independent assessor, approved by the EPAO, observations must be conducted in a realistic work situation under normal conditions. During the process the apprentice will be expected to demonstrate to the assessor the application of the core knowledge, skills and behaviours of specific job related knowledge and skills as outlined in Annex 1. Apprentices will be observed and will be assessed against the KSBs as identified within the standard. Typically this will include adherence to standardised work, use of equipment, tooling etc. Typically this will be covered within one task but may be covered over two separate tasks if required. During the observation the independent assessor may ask 5 open questions to assess the related underpinning knowledge. They may ask follow up questions where clarification is required. Questioning must be completed within the total time allowed for the observation.

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

Apprentices must be provided with both written and verbal instructions on the tasks they must complete including timescales prior to the start of the observation.

Observations must be carried out over an assessment time period of 3 hours +/- 10 minutes. There may be breaks during the observation to allow the apprentice to move from one location to another.

This assessment method must include direct observation of:

- Working safely, efficiently and effectively at all times ensuring that all appropriate legislation, regulation and environmental compliance has been adhered to in-line with company policies, procedures and practice
- Identification and use of appropriate documentation e.g. job instructions, drawings, quality control documentation
- Fabrication activities in-line with the correct processes, procedures and equipment
- Cutting and forming of metal for the production of fabricated parts
- Assembly of metal products to required specification and quality requirements
- Joining of materials using approved welding procedures and quality requirements

Independent assessors may observe up to a maximum of 3 apprentices at any one time, to allow for cost effective use of resources while maintaining quality and rigour.

The EPAO will be required to supply an observation specification sheet for the job role being assessed and a scorecard which will be used by the independent assessor to identify and record the elements of the Standard and grade for the practical observation and give examples of open question types, 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 practical observation will be graded either Pass or fail, to achieve a pass for the practical observation the apprentice must achieve all of the pass criteria that is laid out in the grading matrix which can be can be found in Annex 2.

Assessment Method 2 - Professional discussion:

On completion of the professional discussion the apprentice will be awarded a grade of Pass, Distinction or Fail.

The purpose of the professional discussion is to enable the apprentice to showcase to the independent assessor how they have carried out the role of a Metal Fabricator, integrating the knowledge, skills and behaviours expected and for the review panel to be assured the apprentice has achieved the requirements of the Standard. To help ensure that the professional discussion is practicable and cost effective, it can be carried out at the employer's site, an assessment centre approved by the EPAO or via video link appropriate, if a video link is used then appropriate measures must be in place to ensure the EPAO is satisfied that the responses given are those of the candidate e.g. use of a 360 degree camera to allow the assessor to look around the round the room during the interview.

Portfolio of evidence requirements:

The portfolio of evidence will be submitted to the apprentice's employer for review during the employer gateway review. Once the portfolio has been reviewed and accepted as being fit for purpose then it will be submitted to the EPAO at least 2 weeks prior to professional discussion, the apprentice will submit a Portfolio of evidence setting out examples of work they have undertaken. The portfolio of evidence will be used to inform the professional discussion through which the apprentice will demonstrate competence of the broad range of knowledge, skills and behaviours set out in the standard. The Employer will be required to confirm that the portfolio of evidence provides an accurate representation of work carried out by the apprentice and is not embellished. The portfolio will not be graded as part of the EPA but will be used to ascertain the level of explanation given during the graded professional discussion.

The portfolio of evidence will be reviewed by an independent assessor, approved by the EPAO.

The portfolio of evidence should include Samples of work carried out by the apprentice – Demonstration of work carried out over a period of time and must include evidence of work carried out within the last three months of the on programme period, and will include a minimum of 2 and no more than 3 activities carried out by the apprentice that demonstrates the knowledge, skills and behaviours of the standard. Where practicable this should include photographs, images, diagrams, together with on the job observations and witness evidence/testimony. This should also include situations that have been difficult or challenging, and how these have been overcome e.g. equipment breakdown which has resulted in a change in working practice while still adhering to company procedures. Any employer contributions must focus on direct observation of evidence (e.g. reviews/witness statements) of competence rather than opinions. The portfolio cannot include any methods of self-assessment or self-appraisal.

The professional discussion will consist of:

A professional discussion – using criteria set by the independent end-point assessor who must ask the apprentice 5 open questions based on the review of the portfolio, prior to the professional discussion the Independent Assessor must have reviewed the apprentice's Log-book and prepared 5 questions on a template developed by the EPAO; follow up questions are allowed to seek clarification. The professional discussion must be completed during a 40-minute period +/- 2 minutes. Questions must seek to assess KSBs and can be informed by information within the portfolio of evidence, assessing performance against the pass and distinction criteria and enable the review panel to explore areas they consider warrants further investigation in order to assure themselves that the apprentice has the competence to work as Metal Fabricator. The apprentice may refer to their portfolio of evidence during the professional discussion if required. The EPAO will be required to produce sample questions or a question template as a guide for independent assessors.

The purpose of the professional discussion is to:

- Demonstrate the apprentice can apply the broad range of knowledge, skills and behaviours in the Standard, as indicated in Annex 1
- Clarify any questions the independent assessor has from their review of the portfolio of evidence submitted
- Explore aspects of the apprentice's work, including how it was carried out, in more detail
- Enable the review panel to draw a conclusion on the holistic EPA and the final grade to be awarded on the aggregated achievement of the individual assessments using the grading criteria in Annex 2

The independent assessor must be qualified to a minimum of level 3 within the metal fabrication discipline and have up to date knowledge and understanding of the Engineering sector and be qualified in assessment practice. During the allocation of independent assessors, the EPAO will decide if the independent assessor has the relevant skill set within the metal fabrication discipline being assessed.

The independent assessor will review the portfolio of evidence and decide how the professional discussion will be conducted and relevant key questions to ask the apprentice to confirm the broad range of knowledge, skills and behaviours have been achieved. At the end of the professional discussion, the independent assessor (acting as Chair) will make the final judgement on Distinction, Pass, or Fail for this assessment method.

The professional discussion will be graded fail, pass or distinction. To achieve a pass for the professional discussion the apprentice must achieve all of the pass criteria that is laid out in the grading matrix which can be can be found in Annex 2; to achieve a distinction the apprentices must achieve all of the pass criteria and the distinction criteria that is laid out in the grading matrix which can be can be found in Annex 2.

EPA – Summary of roles and responsibilities

	Role responsibilities
Employer*	• Selects EPAO (may be advised by training provider) • Confirms all EPA gateway requirements have been met, signs off to this effect and triggers EPA to the EPAO • Confirms arrangements with EPAO for the EPA (who, when, where) • Ensures apprentice is aware of the EPA, is prepared and ready, and ensures attendance • Selects an appropriately qualified employee or suitable representative to attend the discussion to ensure accuracy and veracity of the apprentice's statements and to clarify any issues where requested by the independent assessor
Independent Assessment Organisation	• Consult with representative employers to write and provide all required material and resources required for the EPA while ensuring that measures are in place to ensure the security and confidentially of the questions and assessment materials (e.g. questions and instruction script, professional discussion guidance, assessment recording documentation) • On receipt of 'trigger' from employer/training provider, contact the employer and arrange dates, times and locations for the required EPA • Ensure all required material is present at the EPA venue • Provide appropriate and qualified staff to enable completion of all aspects of the EPA • Confirms result of EPA to apprentice and employer • Arranges for certification with the training provider • Maintain robust internal quality assurance (IQA) procedures and moderation • Conform to the requirements of the nominated external quality assurance body

Failure/Re-sit & Re- take information

Apprentices who fail one or more EPA method will be offered the opportunity to take a re-sit/retake. Re-sits/re-takes must not be offered to apprentices wishing to move from pass to distinction. A re-sit does not require further learning, whereas a re-take does.

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

The timescales for a resit/retake of the entire EPA is agreed between the employer and EPAO. A resit is typically taken within 2 months of the EPA outcome notification. The timescale for a retake is dependent on how much re-training is required and is also typically taken within 6 months of the EPA outcome notification.

The maximum grade awarded to a re-sit/re-take for the practical observation will be graded pass/fail and a re-sit/re-take of the professional discussion will be graded pass/fail/distinction and combined to determine the EPA grade.

EPAOs must ensure that apprentices are observed doing different activities within the practical observation when taking a re-sit/re-take.

If the apprentice is unsuccessful, their employer will decide when the apprentice should re-apply for the EPA once additional training has taken place.

End-point assessment grading

The Practical observation and professional discussion will be individually graded – the Practical observation is graded pass/fail and the professional discussion will be graded fail, pass, or distinction. A fail in one or more of the assessment methods will result in a fail in the EPA. Evidence from the portfolio of evidence will be used to inform the professional discussion but will not be assessed.

Grading Criteria

The apprenticeship will be graded Fail, Pass, or Distinction. The final grade will be determined by collective performance in the two assessments within the End-point assessment.

The EPAO will combine the grades from the practical observation test and professional discussion to determine the overall apprenticeship grade in line with the grading criteria below.

EPA method	Assessment Grade	Assessment Grade	Assessment Grade	Assessment Grade
Practical observation	Any*	Fail	Pass	Pass
Professional discussion	Fail	Any*	Pass	Distinction
Apprenticeship Grade Awarded	**Fail**	**Fail**	**Pass**	**Distinction**

*** 'Any' = Pass, or Distinction**

Independence

The EPAO will coordinate the entire EPA process completely and independently of the employer and any training providers. The independent assessor appointed to carry out the EPA will not be from the apprentice's employer or related to the apprentice in any other way.

Regional arrangements will ensure that all apprentices are within reasonable travelling distance of the venue for the professional discussion. Where practicable the professional discussion will be arranged at the employers or their providers' premises, or via video link as appropriate to minimise additional expenditure, travel and time away from the work place.

Internal Quality assurance

The EPAO for the Metal Fabricator EPA will be responsible for the internal quality assurance and will have suitable and appropriate quality assurance processes in place so that all aspects of the EPA are carried out in a consistent and fair manner for all Apprentices. The minimum requirements for IQA will include:

- Communication processes for apprentices, employers, providers, and external bodies in relation to the EPA
- Third parties - the management of third parties, including independent review panel members, examiners, assessors
- Information about fees, clarity of invoicing
- Setting and delivering panel assessment - need for confidentiality, reasonable adjustments and special consideration
- Grading and issuing results - grading and moderation, results determination and issuing
- Standardisation/moderation meetings to support and develop independent assessors; monitor and improve the quality of assessment practice; and remove / minimise process inconsistencies. The frequency and timing of internal standardisation and moderation activity is decided by the EPAO but must be undertaken at least once a year.

The EPAO will set the assessment against the grading criteria for the practical observation, and professional discussion.

Independent Assessors selected by the EPAO must have an in-depth knowledge and understanding of the metal fabrication sector which they have demonstrated within the past 3 years and have undertaken recognised training in the assessing engineering based knowledge, skills and behaviours using observation and professional discussion assessment methodologies, for grading against occupational competence.

- Independent Assessors selected to carry out the practical skill observation will receive guidance and training from the EPAO with regards to observation techniques
- Independent Assessors selected as Panel Interviewers will receive guidance and training from the EPAO with regards to professional discussion techniques

All EPAOs must be on the Education & Skills Funding Agency's Register of End-Point Assessment Organisations.

End-point Assessment Organisation must:

- Provide end-point assessment guidance, where required and appropriate, to apprentices, employers and training providers in relation to the requirements of the practical observation, professional discussion, portfolio of evidence and grading of the end-point components
- Provide immediate guidance where end-point assessments need to be halted due to unforeseen circumstances e.g. system emergency, apprentice illness, so it is clear that an apprentice's grade will not be capped at a pass if they have to re-take or re-sit the End-point assessment for reasons beyond their control
- Ensure independent assessors make consistent and reliable assessment and grade judgements through moderation activity involving observations and examination of assessment records on a risk sampling basis, i.e. a minimum of 20% for experienced assessors and 100% for new assessors or where inconsistencies have been identified
- Facilitate reasonable adjustments when for learners with special requirements to assess the knowledge, skills and competence of the apprentice through alternative assessment techniques. Whilst, these will remove barriers to participation, they must be designed to ensure judgements are not compromised to health and safety and legal requirements and the assessment remains valid.
- Appoint and approve independent assessors for the purposes of conducting the portfolio of evidence review and professional discussion and grading, based on a check of knowledge, experience and independence
- Provide training for independent assessors in terms of the requirements of the operation and grading of the assessment tools and grading
- Provide documentation and guidance in relation to the End-point assessment i.e. making reasonable adjustment, eligibility to enter end-point assessment and conflict of interest
- Hold annual standardisation/moderation events for independent assessors to ensure consistent application of the guidance
- Ensure EPAO moderators are trained in assessment and assurance processes and undertake regular continuing professional development
- Develop and manage a complaints and appeals procedure.
- Coordinate the independent assessors across the regions and ensure their independence.

External Quality Assurance

External quality assurance for this apprenticeship standard will be managed by the IFA.

Implementation

Affordability

It is the responsibly of the employer to negotiate a 'best price' through negotiation, including potential reductions where multiple candidates require EPA. Flexibility in the scheduling of assessments and the ability to use technology should enable EPAOs to minimise costs and deliver the EPA in the volumes required.

The following factors should ensure the EPA is affordable:

- Employers premises should be used for EPA venues where possible
- Remote assessment is permissible, reducing travel costs

The cost for End-point assessment includes the following:

- Occupational competence validation – Portfolio of evidence review
- Practical observation – Skills, knowledge and Behaviours
- Professional discussion – Skills, knowledge and Behaviours
- Apprenticeship final sign off
- Apprenticeship Certificate

Volumes: It is anticipated that there will be initially 500 starts per annum on this apprenticeship but it is expected that this number will grow substantially within the first three years of delivery, with a minimum number of 900 starts per annum.

Independent End-point EPAOs who want to carry out the End-point Assessment within this standard must ensure they have sufficient capacity to meet the projected number of apprentices requiring end-point Assessment including when, during the calendar year that the assessment is likely to be required.

Annexes

Annex 1

Assessment Method by element of the Standard – Metal Fabricator

	Apprenticeship Standard competencies	Designated method of assessment	
Ref	**Skills to be assessed**	**O = Practical observation**	**D = Professional discussion (informed by portfolio of evidence)**
S1	Work safely at all times, comply with health & safety legislation, regulations and organisational requirements	**O**	**D**
S2	Comply with environmental legislation, regulations and organisational requirements	**O**	**D**
S3	Obtain, check and use the appropriate documentation (such as job instructions, drawings, quality control documentation)	**O**	
S4	Carry out relevant planning and preparation activities before commencing work activity		**D**
S5	Undertake the work activity using the correct processes, procedures and equipment	**O**	
S6	Carry out the required checks (such as quality, compliance or testing) using the correct procedures, processes and/or equipment		**D**
S7	Deal promptly and effectively with problems within the limits of their responsibility using approved diagnostic methods and techniques and report those which cannot be resolved to the appropriate personnel		**D**
S8	Complete any required documentation using the defined recording systems at the appropriate stages of the work activity		**D**
S9	Restore the work area on completion of the activity and where applicable return any resources and consumables to the appropriate location		**D**
S10	Identify and follow correct Metal work instructions, specifications, drawing etc.	**O**	
S11	Mark out using appropriate tools and techniques		**D**
S12	Cut and form Metal for the production of fabricated products	**O**	**D**
S13	Produce and assemble Metal products to required specification and quality requirements	**O**	**D**
S14	Identify and follow correct joining instructions, specifications, drawing etc.	**O**	
S15	Carry out the relevant preparation before starting the joining fabrication activity		**D**
S16	Set up, check, adjust and use joining and related equipment		**D**
S17	Weld joints in accordance with approved welding procedures and quality requirements	**O**	**D**

Ref	Knowledge to be assessed	O = Practical observation	D = Professional discussion (informed by portfolio of evidence))
K1	The importance of complying with statutory, quality, organisational and health and safety regulations	**O**	**D**
K2	General engineering mathematical and scientific principles, methods, techniques, graphical expressions, symbols formulae and calculations		**D**
K3	The structure, properties and characteristics of common materials		**D**
K4	The typical problems that may arise within their normal work activities/environment		**D**
K5	Approved diagnostic methods and techniques used to help solve engineering problems		**D**
K6	The importance of only using current approved processes, procedures, documentation and the potential implications if they are not adhered to	**O**	
K7	How to interpret relevant engineering data and documentation		**D**
K8	The different roles and functions in the organisation and how they interact		**D**
K9	Why it is important to continually review fabrication and general engineering processes and procedures		**D**
K10	The correct methods of moving and handling materials	**O**	
K11	Processes for preparing materials to be marked out		**D**
K12	The tools and techniques available for cutting, shaping, assembling and finishing materials.	**O**	
K13	Allowances for cutting, notching, bending, rolling and forming materials		**D**
K14	Pattern development processes, tooling and equipment		**D**
K15	Cutting and forming techniques, tooling and equipment		**D**
K16	Assembly and finishing processes, tooling and equipment		**D**
K17	Inspection techniques that can be applied to check shape and dimensional accuracy		**D**
K18	Factors influencing selection of forming process		**D**
K19	Principles, procedures and testing of different joining techniques (Mechanised or Manual)		**D**
K20	Metallurgy associated with joining		**D**
K21	Equipment associated with Manual or Mechanised joining techniques including maintaining equipment in a reliable and safe condition	**O**	
K22	Consumables used in Manual or Mechanised joining	**O**	
K23	Different types of Welds and joints		**D**
K24	Effects of heating and cooling metals		**D**

	Behaviours to be assessed	O = Practical observation	D = Professional discussion (informed by portfolio of evidence))
B1	**Personal responsibility and resilience** – Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing time and workload and stay motivated and committed when facing challenges.	**O**	**D**
B2	**Work effectively in teams** – Integrate with the team, support other people, consider implications of their own actions on other people and the business whilst working effectively to get the task completed.		**D**
B3	**Effective communication and interpersonal skills** – An open and honest communicator, communicates clearly using appropriate methods, listen well to others and have a positive and respectful attitude.		**D**
B4	**Focus on quality and problem solving** – Follow instructions and guidance, demonstrate attention to detail, follow a logical approach to problem solving and seek opportunities to improve quality, speed and efficiency.		**D**
B5	**Continuous personal development** – Reflect on skills, knowledge and behaviours and seek opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice.		**D**

Annex 2

Practical observation Grading Criteria Guidance for the assessment of Knowledge, Skills and Behaviours

Core Skills to be assessed	Fail Criteria	Pass Criteria To achieve a pass the apprentice must achieve all of the core skills pass criteria and all of the pass criteria for one of the specialist job role options as laid out below
S1 - Work safely at all times, comply with health & safety legislation, regulations and organisational requirements S2 - Comply with environmental legislation, regulations and organisational requirements S3 - Obtain, check and use the appropriate documentation (such as job instructions, drawings, quality control documentation) S5 - Undertake the work activity using the correct processes, procedures and equipment	Fails to provide evidence to meet the skill requirements	Demonstrates their ability to work safely, complying with health & safety and environmental legislation, regulations and organisational requirements. Evidence including: • Can identify, assesses and controls risk within work environment • Can select and use appropriate processes, procedures, tools, equipment and materials to carry out the engineering operations • Can work efficiently and effectively while adhering to appropriate processes and procedures
S10 - Identify and follow correct metal work instructions, specifications, drawing etc. S12 - Cut and form metal for the production of fabricated products	Fails to provide evidence to meet the skill requirements	Demonstrates their ability to identify and follow correct metal work instructions, specifications, drawing etc. Evidence including: • Identification and adherence to the correct work instructions as part of their work commitments and shows an understanding of any operating rules in place within the instruction • Cutting and forming of metal for the production of fabricated products • Production and assembly of metal products to required specification and quality requirements

S13 - Produce and assemble metal products to required specification and quality requirements		
S14 – Identify and follow correct joining instructions, specifications, drawing etc. S17 - Weld joints in accordance with approved welding procedures and quality requirements	Fails to provide evidence to meet the skill requirements	Demonstrates their ability to identify and follow correct joining instructions, specifications, drawing etc. Evidence including: • Identification and adherence to the correct work instructions as part of their work commitments and shows an understanding of any operating rules in place within the instruction • Welds joints in accordance with approved welding procedures and quality requirements

Core Knowledge to be assessed	**Fail**	**Pass** To achieve a pass the apprentice must achieve all of the core knowledge pass criteria and all of the pass criteria for one of the specialist job role options as laid out below
K1 - The importance of complying with statutory, quality, organisational and health and safety regulations	Fails to provide evidence to meet the knowledge requirements	Demonstrates their knowledge of the importance of complying with statutory, quality, organisational and health and safety regulations. Evidence including: • Can explain the potential effect of not complying with statutory, quality, organisational and health and safety regulations • Can describe the specific safe working practices that need to be observed when questioned
K6 - The importance of only using current approved processes, procedures, documentation and the potential implications if they are not adhered to	Fails to provide evidence to meet the knowledge requirements	Demonstrates their knowledge of the importance of only using current approved processes, procedures, documentation and the potential implications for the organisation if this is not adhered to. Evidence including: • Can explain the potential effect of not using current approved processes, procedures, documentation • Can describe the specific processes, procedures, documentation that need to be used when questioned
K10 - The correct methods of moving and handling materials	Fails to provide evidence to meet the knowledge requirements	Demonstrates their knowledge of the correct methods of moving and handling materials. Evidence including:

		• Can describe the correct methods of moving and materials when questioned
K12 - The tools and techniques available for cutting, shaping, assembling and finishing materials	Fails to provide evidence to meet the knowledge requirements	Demonstrates their knowledge of the tools and techniques available for cutting, shaping, assembling and finishing materials. Evidence including: • Can explain the methods used in the production of fabricated parts • Can identify the tools and equipment required to produce fabricated parts • Can describe the techniques used to produce fabricated parts
K21 - Equipment associated with Manual or Mechanised joining techniques including maintaining equipment in a reliable and safe condition	Fails to provide evidence to meet the knowledge requirements	Demonstrates their knowledge of equipment associated with Manual or Mechanised joining techniques including maintaining equipment in a reliable and safe condition. Evidence including: • Can identify the equipment associated with Manual or Mechanised joining techniques • Can you outline the maintenance requirements for equipment associated with Manual or Mechanised joining techniques
K22 - Consumables used in Manual or Mechanised joining	Fails to provide evidence to meet the knowledge requirements	Demonstrates their knowledge of metal fabrication joining operations. Evidence including: • Can identify the consumables used in Manual or Mechanised joining

Behaviours to be assessed	**Fail**	**Pass** To achieve a pass the apprentice must achieve all of the behaviours pass criteria as laid out below
B1 Personal responsibility and resilience Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing	Fails to provide evidence to meet the behavioural requirements as detailed in Annex 1	Demonstrates they comply with H&S guidance & procedures Evidence including: • Always demonstrates understanding & importance of H&S requirements • Dynamically assesses/controls risk in current environment

time and workload and stay motivated and committed when facing challenges.		

Professional discussion Grading Criteria Guidance for the assessment of Knowledge, Skills and Behaviours

Skills to be assessed	Fail Criteria	Pass Criteria To achieve a pass the apprentice must achieve all of the core skills pass criteria and all of the pass criteria for one of the specialist job role options as laid out below	Distinction Criteria To achieve a distinction the apprentices must be able to achieve all of the pass criteria and at least 2 of the 3 core skills distinction criteria as laid out below and the distinction criteria for the specialist job role they are working towards
S1 - Work safely at all times, comply with health & safety legislation, regulations and organisational requirements S2 - Comply with environmental legislation, regulations and organisational requirements S4 – Carry out relevant planning and preparation activities before commencing work activity S6 - Carry out the required checks (such as quality, compliance or testing) using the correct	Fails to provide evidence to meet the skill requirements	Demonstrates their ability to work safely, complying with health & safety and environmental legislation, regulations and organisational requirements. Evidence including: • Can identify, assesses/ and controls risk within work environment • Can select and use appropriate documentation, tools, equipment and materials to carry out the metal fabrication operations • Have carried the relevant preparation before starting the metal fabrication activity • Can work efficiently and effectively while using the correct processes, procedures and equipment	Demonstrates they have the ability to take on additional safety responsibilities, over and above the expectation of an engineering environment. **Evidence including:** • Challenges other people on H&S compliance, where appropriate • Can dynamically assesses/controls risk at all times regardless of environment • Can suggest ideas for improvement along with possible solutions

procedures, processes and/or equipment S7 - Deal promptly and effectively with problems within the limits of their responsibility using approved diagnostic methods and techniques and report those which cannot be resolved to the appropriate personnel S8 - Complete any required documentation using the defined recording systems at the appropriate stages of the work activity S9 - Restore the work area on completion of the activity and where applicable return any resources and consumables to the appropriate location		• Can Carry out the required checks using the correct procedures, processes and/or equipment • Can deal with problems that occur during their work activities within the limits of their responsibility • Can complete documentation accurately, efficiently and legibly using the correct terminology • Can restore the work area on completion of the activity, returning all tools, equipment and resources to the appropriate location	
S11 – Mark out using appropriate tools and techniques S12 - Cut and form metal for the production of fabricated products S13 - Produce and assemble metal products to required specification and quality requirements	Fails to provide evidence to meet the skill requirements	Demonstrates their ability to identify and follow correct metal work instructions, specifications, drawing etc. Evidence including: • Provided evidence of having followed the correct work instructions as part of their work commitments and show an understanding of any operating rules in place within the instruction • Have cut and formed metal for the production of metal products	Demonstrates that they can consistently carryout fabrication activities in a well-organised and competent way with minimum wasted effort or expense and can identify opportunities to improve processes or procedures along with potential solutions and can overcome problems that may occur

		• Have produced and assembled metal products to required specification and quality requirements • Have completed the relevant documentation for metal fabrication and assembly activity	
S15 Carryout the relevant preparation before starting the joining fabrication activity **S16** Set up, check, adjust and use joining and related equipment**S17** Weld joints in accordance with approved welding procedures and quality requirements	Fails to provide evidence to meet the skill requirements	Demonstrates their ability to identify and follow correct joining instructions, specifications, drawing etc. Evidence including: • Provided evidence of having followed the correct work instructions as part of their work commitments and show an understanding of any operating rules in place within the instruction • Have carried the relevant preparation before starting the joining fabrication activity • Have planned, implemented and monitored resources and activities for joining components • Have set up, checked, adjusted and used joining and related equipment • Have welded joints in accordance with approved welding procedures and quality requirements	Demonstrates that they can consistently carryout joining activities in a well-organised and competent way with minimum wasted effort or expense and can identify opportunities to improve processes or procedures along with potential solutions and can overcome problems that may occur.

Knowledge to be assessed	**Fail**	**Pass Criteria** To achieve a pass the apprentice must achieve all of the core knowledge pass criteria and all of the pass criteria for one of the specialist job role options as laid out below	**Distinction Criteria** To achieve a distinction the apprentices must be able to achieve all of the pass criteria and the distinction criteria for the specialist job role they are working towards

K1 The importance of complying with statutory, quality, organisational and health and safety regulations	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of the statutory, quality, organisational and health and safety regulations Evidence including: • Able to outline the specific statutory, quality, environmental compliance procedures/systems, organisational and health and safety regulations relevant to their work activities	N/A
K2 General engineering mathematical and scientific principles, methods, techniques, graphical expressions, symbols, formulae and calculations	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of general engineering mathematical and scientific principles, methods, techniques, graphical expressions, symbols formulae and calculations Evidence including: • Able to give two examples of the engineering mathematical and scientific principles, methods and techniques that are used within fabrication	N/A
K3 The structure, properties and characteristics of common materials	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of the structure, properties and characteristics of common materials Evidence including: • Able to describe the structure, properties and characteristics of two common materials	N/A
K4 The typical problems that may arise within their normal work activities/environment	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of the typical problems that may arise within their normal work activities/environment Evidence including: • Able to give two examples of typical problems that may arise within their normal work activities/environment e.g. incorrect materials, tooling/equipment, breakdowns, environmental concerns, H&S concerns, etc.	N/A
K5 Approved diagnostic methods and techniques used to help solve engineering problems	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of diagnostic methods and techniques used to help solve engineering problems Evidence including: • Able to describe two different diagnostic methods and techniques used to help solve engineering problems e.g. sensory inspection, six point, half-split, input/output, cause and effect, 5 whys, process mapping, etc.	N/A

K7 How to interpret relevant engineering data and documentation	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of how to interpret relevant engineering data and documentation Evidence including: • Able to explain how to extract and interpret general and technical data and information from different sources (such as drawings, computer models, symbols and conventions, BS or ISO standards)	N/A
K8 The different roles and functions in the organisation and how they interact	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of the different roles and functions in the organisation and how they interact Evidence including: • Able to explain different roles and functions in the organisation and how they interact e.g. management, quality department, commercial department, material stores/supply, unions, HR/personnel, H&S department, etc.	N/A
K9 Why it is important to continually review fabrication and general engineering processes and procedures	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of why it is important to continually review fabrication and general engineering processes and procedures Evidence including: • Able to explain the potential impact of not reviewing and updating fabrication and general engineering processes and procedures e.g. incorrect products, poor productivity, inefficient work, etc.	N/A
K11 Processes for preparing materials to be marked out **K13** Allowances for cutting, notching, bending, rolling and forming materials **K14** Pattern development processes, tooling and equipment **K15** Cutting and forming techniques, tooling and equipment	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of metal fabrication working operations. Evidence including: • Able to give details of the process for preparing materials to be marked out they have used while carrying out a metal fabrication work activity • Able to explain the importance for making allowances for cutting, notching, bending, rolling and forming for materials metal fabrication work activity • Able to give details of the pattern development process, tooling and equipment they have used while carrying out a sheet-metal work activity • Able to Identify the tools and techniques used for cutting and shaping metal	Use of technical language and detail to give an in-depth* explanation the key elements of the knowledge relating to the to the metal fabrication work activities they have been involved in In-depth* = explanation includes detail of key aspects of the work they have carried out and can answer questions using relevant detail e.g.

K16 Assembly and finishing processes, tooling end equipment		• Able to give details of the cutting and forming techniques, tooling and equipment they have used while carrying out a sheet-metal work activity • Able to give details of the assembly and finishing processes, tooling end equipment they have used while carrying out a sheet-metal work activity	processes, equipment, materials used and the reason behind their use
K17 Inspection techniques that can be applied to check shape and dimensional accuracy	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of inspection techniques that can be applied to check shape and dimensional accuracy Evidence including: • Able to give details of the inspection techniques that can be applied to check shape and dimensional accuracy e.g. Linear measurement, surface checks, alignment checks, straightness checks, squareness checks, taper measurement, angular measurement, etc.	N/A
K18 Factors influencing selection of forming process	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of the factors influencing the selection of forming process Evidence including: • Able to give details of the factors that could influence the selection of forming process e.g. material properties, end product specification, operating conditions, etc.	N/A
K19 Methods used in the production of fabricated parts	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of the methods used in the production of fabricated parts. Evidence including: • Able to give details of the method they have used in the production of fabricated parts • Able to give details of one other method that could be used in the production of fabricated parts	Use of technical language and detail to give an in-depth* explanation of why a specific method was used within the production of a fabricated part In-depth* = explanation includes detail of key aspects of the work they have carried out and can answer questions using relevant detail e.g. processes, equipment, materials used and the reason behind their use

K20 How to set up the work area, tooling, equipment as applicable to the job role	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of how to set up the work area, tooling, equipment as applicable to the job role Evidence including: • Able to give details of how they have set up a work area, tooling, equipment as applicable to the job being carried out	N/A
K23 Different types of Welds and joints **K24** Effects of heating and cooling metals	Fails to provide evidence to meet the knowledge requirements	Demonstrates their understanding of sheet-metal working operations. Evidence including: • Able to give details of the metallurgy associated with joining activities they have been involved with • Able to give details of the joining procedures and methods of testing they have used during manual or mechanised joining activities • Able to describe different types of Welds and joints and where they could be used • Able to describe the effects of heating and cooling metals	Use of technical language and detail to give an in-depth* explanation the key elements of the knowledge relating to the to the metal fabrication joining activities they have been involved in In-depth* = explanation includes detail of key aspects of the work they have carried out and can answer questions using relevant detail e.g. processes, equipment, materials used and the reason behind their use

Behaviours to be assessed	**Fail** **Apprentice fails to demonstrate an acceptable level of behaviour.**	**Pass** **Apprentice demonstrated an acceptable level of behaviour and meets the minimum level of behaviour expected.** To achieve a pass the apprentice must achieve all of the behaviours pass criteria as laid out below	**Distinction** **Apprentice demonstrated consistent and positive behaviours.** To achieve a distinction the apprentices must be able to achieve all of the pass

			criteria and all of the distinction as laid out below
B1 Personal responsibility and resilience Comply with the health and safety guidance and procedures, be disciplined and have a responsible approach to risk, work diligently regardless of how much they are being supervised, accept responsibility for managing time and workload and stay motivated and committed when facing challenges.	Does not comply with health and safety guidance and procedures	Demonstrate they comply with H&S guidance & procedures Evidence including: • Always demonstrates understanding & importance of H&S requirements • Assesses/controls risk in current environment • Can be trusted to work on own when appropriate, knowing who & where to seek help from if needed • Can manage own time & workload • Stays motivated & committed, when facing small challenges	• Can challenge others on H&S compliance • Can proactively assesses/controls risk without the need to be prompted • Sets an example to others by working in a well-organised and competent way when on own • Can reflect on how to do things more effectively
B2 Work effectively in teams Integrate with the team, support other people, consider implications of their own actions on other people and the business whilst working effectively to get the task completed.	Does not work well within a team	Demonstrate they can work well within a team Evidence including: • Makes effort to integrate within a team • Will help and support when asked • Considers impact of own actions on other people or activities • Contributes positively to team deliverables	• Proactively & on a weekly basis supports others • Seeks support & advice and will share learning • Provides encouragement as appropriate to keep the team on track
B3 Effective communication and interpersonal skills An open and honest communicator; communicates clearly using appropriate methods, listen well to others and have a positive and respectful attitude.	Does not communicate in an efficient and effective way	Demonstrate they can communicate in an efficient and effective way Evidence including: • Can communicate openly and honestly • Communicates clearly using appropriate methods • Pays attention to instructions • Has a positive and respectful attitude	• Takes action to share information, openly & honestly rather than just responding to requests • Checks understanding of others by asking open questions

B4 Focus on quality and problem solving Follow instructions and guidance, demonstrate attention to detail, follow a logical approach to problem solving and seek opportunities to improve quality, speed and efficiency.	Does not follow instructions and guidance Does not follow a logical approach to problem solving	Demonstrate they can follow instructions and guidance and can follow a logical approach to problem solving Evidence including: • Understands & can follow instructions/processes • Demonstrates attention to detail • Follows a logical/right approach to problem solving • Identifies opportunities to improve, but may need prompting for ideas	• Can make suggestions to improve instructions • Can escalate issues as appropriate • applies the most appropriate technique for problem solving • Can reflect upon lessons learnt after problem solving activity
B5 Continuous personal development Reflect on skills, knowledge and behaviours and seek opportunities to develop, adapt to different situations, environments or technologies and have a positive attitude to feedback and advice.	Does not take ownership of their personal development Does not seek opportunities to develop	Demonstrate they can take ownership of their personal development and will seek opportunities to develop Evidence including: • Can reflect on Knowledge and seeks opportunities to develop • Can reflect on skills and seeks opportunities to develop • Can reflect on behaviours and seeks opportunities to develop • Can adapt to different Situations, Environments or Technologies • Has a positive attitude to feedback and advice	• Recognises needs and continually seeks learning opportunities • Can transfer learning, applying it to different situations • Can adapts quickly and effectively to new Situations, Environments or Technologies • Proactively seeks feedback & acts upon it

To achieve an overall pass for the apprenticeship, the apprentice must achieve a minimum of a pass in all of the knowledge, skills and behaviours grading descriptors in both the practical observation and the professional discussion.

To achieve an overall distinction for the apprenticeship, the apprentice must achieve a pass for all the grading descriptors in the practical observation assessment.

Plus for the professional discussion, the apprentice must achieve:

- **a minimum of a pass for all the knowledge, skills and behaviours grading descriptors**
- **a distinction grade in at least 2 of the 3 skills grading descriptors**
- **a distinction grade in at least 2 of the 3 knowledge grading descriptors**
- **a distinction grade for all the behaviour grading descriptors**