

End-point assessment plan for Advanced Furniture CNC Technician apprenticeship standard

Apprenticeship standard reference number	Level of this apprenticeship	Integrated end-point assessment
ST0655	3	No

Contents

Introduction and overview	3
EPA summary table	4
Length of end-point assessment period:	5
Order of assessment methods	5
Gateway	5
Assessment methods.....	7
Weighting of assessment methods	13
Grading.....	13
Roles and responsibilities	19
Internal Quality Assurance (IQA).....	20
Re-sits and re-takes.....	21
Affordability	21
Professional body recognition	21
Reasonable adjustments.....	21
Mapping of knowledge, skills and behaviours (KSBs)	22

Introduction and overview

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

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

The EPA period should only start, and the EPA be arranged, once the employer is satisfied that the apprentice is 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 that they can be evidenced to an EPAO.

All pre-requisites for EPA assessment methods must also be complete and available for the assessor as necessary. For level 3 apprenticeships and above apprentices without English and mathematics at level 2 must achieve level 2 prior to taking their EPA.

The EPA must be completed within an EPA period lasting typically three months, beginning when the apprentice has passed the EPA gateway. The EPA consists of three discrete assessment methods.

The individual assessment methods will have the following grades:

Assessment method 1: Multiple Choice Test

- Fail
- Pass
- Distinction

Assessment method 2: Observation with questions

- Fail
- Pass

Assessment method 3: Professional Discussion supported by 'Portfolio of evidence'

- Fail
- Pass
- Distinction

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

- Pass
- Fail
- Distinction

EPA summary table

On-programme (typically 24 months)	Training to develop the occupation standard's knowledge, skills and behaviours.
End-point Assessment Gateway	<ul style="list-style-type: none"> • Employer is satisfied the apprentice is consistently working at, or above, the level of the occupational standard. • English/mathematics Level 2 • Apprentice compiled a portfolio of evidence, to support the professional discussion <p>The employer must provide the EPAO access to the relevant organisational processes and procedures, as required, to support the observation and professional discussion to ensure the apprentice meets their requirements during EPA.</p>
End Point Assessment (which would typically take three months)	<p>Assessment Method 1: Multiple Choice Test</p> <p>With the following grades:</p> <ul style="list-style-type: none"> • Fail • Pass • Distinction <p>Assessment Method 2: Observation with questioning</p> <p>With the following grades:</p> <ul style="list-style-type: none"> • Fail • Pass <p>Assessment Method 3: Professional Discussion supported by 'Portfolio of evidence'</p> <p>With the following grades:</p> <ul style="list-style-type: none"> • Fail • Pass • Distinction <p>Overall EPA/apprenticeship graded:</p> <ul style="list-style-type: none"> • Fail • Pass • Distinction

Length of end-point assessment period:

The EPA must be completed within an EPA period lasting typically three months, beginning when the apprentice has passed the EPA gateway.

If an EPA assessment method is failed, it should be resat/retaken within the EPA period and in-line with the requirements set out in this assessment plan.

Order of assessment methods

The assessment methods can be delivered in any order. The result of one assessment method does not have to be known before an apprentice starts the next one.

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.

The employer will need to provide the EPAO access to the relevant organisational processes and procedures at the gateway as required, so the assessor is able to judge if the apprentice meets these during the EPA.

For Multiple Choice Test: no specific requirements

For Observation with questions: no specific requirements

For Professional Discussion underpinned by portfolio of evidence, the apprentice will be required to submit:

- A Portfolio of evidence allowing the apprentice to demonstrate the knowledge, skills and behaviours across the professional discussion criteria set out in the mapping section. This is used as an aide memoir during the professional discussion. This should be a Portfolio of evidence of the apprentice's best work to demonstrate their achievements. It should be an example of work completed during the apprenticeship that the apprentice can quickly refer to during the professional discussion to support the answers that are being given.
- Apprentices must compile the Portfolio of evidence at the end of on-programme period and it should contain evidence collected during the on-programme period of the apprenticeship. The Portfolio of evidence must contain sufficient evidence to demonstrate the KSBs that will be assessed by the professional discussion.
- The Portfolio of evidence will typically contain 13-16 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:
 - workplace documentation, for example job cards/job sheets, check sheets/quality check records, accident records, equipment check/maintenance records, sales records
 - annotated specifications, for example drawings, cutting lists, work instructions
 - annotated photographs
 - annotated CAD drawings
- This is not a definitive list; other evidence sources are allowable.
- The Portfolio of evidence should not include any methods of self-assessment. Any employer contributions should focus on direct observation of evidence (for example witness statements) of competence rather than opinions. The evidence provided must be valid and attributable to the apprentice; the Portfolio of evidence must contain a statement from the employer confirming this.
- The Portfolio of evidence must be completed at the gateway point.
- The Portfolio of evidence is not assessed but is used to support the professional discussion.

Assessment methods

Assessment Method 1: Multiple Choice Test

Overview

The rationale for this assessment method is:

- to test the underpinning knowledge requirements for the Advanced Furniture CNC Technician apprenticeship standard.
- allows for the efficient testing of knowledge where there is a right or wrong answer
- does not require independent assessor time, reducing cost

Test Format

The test can be:

- computer based
- paper based

It will consist of 30 questions. These questions will consist of closed response multiple-choice questions. Apprentices must choose one correct answer from a choice of four.

Test administration

Apprentices must have a maximum of 45 minutes to complete the test. The test is closed book which means that the apprentice cannot refer to reference books or materials.

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

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

Marking

Tests must be marked by independent assessors or markers employed by the EPAO following a marking guide produced by the EPAO. Alternatively, marking by computer is permissible where questions types allow this, to improve marking reliability. Each question answered correctly will be awarded one mark. Any incorrect or missing answers will be assigned nil marks.

Question and resources development

Questions must be written by EPAOs and must be relevant to the occupation and employer settings. It is recommended that this be done in consultation with employers of this

occupation. EPAOs should also maintain the security and confidentiality of their questions when consulting employers. EPAOs must develop 'question banks' of sufficient size to prevent predictability and review them regularly (and at least once a year) to ensure they, and the questions they contain, are fit for purpose. EPAOs must monitor test question performance to maintain the validity of this assessment method. A full question bank review should be done annually.

Required supporting material

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

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

Assessment Method 2: Observation with questioning

Overview

The rationale for this assessment method is:

- the occupation involves practical activity best assessed through observation; it would be difficult to replicate the working environment in a valid way and employers would doubt the occupational competence of an individual not assessed in this way
- the questioning component enables the checking of underpinning knowledge, skills and behaviours.

Delivery

Apprentices must be observed by an independent assessor completing work tasks in their normal workplace, in which they will demonstrate the KSBs assigned to this assessment method. The EPAO will arrange for the observation to take place and set the task(s) in consultation with the employer.

One assessor should observe a maximum of one apprentice at any one time, to allow for quality and rigour.

The observation should take three hours from a normal working day. The observation may be split into discrete sections held over a maximum of one working day. The length of a working day is typically considered to be 7.5 hours. The assessor has the discretion to increase the time of the observation by up to 10% to allow the apprentice to complete a task at the end of this component of the EPA. There may be breaks during the observation to allow the apprentice to move from one location to another and for meal/comfort breaks. During these breaks, the clock must be stopped and restarted to ensure that the assessment duration is not reduced. The apprentice must not communicate any details about the assessment during breaks. EPAOs should consider whether it is possible and practical to assess one candidate in the morning and one in the afternoon to maximise assessor time on site and reduce cost.

The assessor has the discretion to increase the time of the observation by up to 10% to allow the apprentice to complete a task at the end of this component of the EPA.

In advance of the observation, apprentices must be provided with information on the format of the observation, including timescales.

The following activities **MUST** be observed during the observation, all KSBs assigned to this method must be covered:

- load and prove CNC programmes to produce furniture (K1, K2, K3, K5, S1, S2, S4, B1)
- set up and operate CNC furniture production machinery (K9, K10, S5, S6, S7)
- check furniture and/or components produced meet quality standards and specifications (K28, S23, B12)

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

Observation specifications must be of equal complexity, so as to require a competent person three hours to complete.

Typically, the observation will be covered within one task but may be covered by up to two separate tasks if required. The tasks must be set by the EPAO and must cover the knowledge, skills and behaviours set out for this assessment method in the mapping section of this EPA plan.

Questions will be asked after the observation is complete. The independent assessor will ask a minimum of six questions covering all the activities observed within a total time period not exceeding 30 minutes, in addition to the scheduled observation time. They may ask follow up questions where clarification is required. KSBs that did not naturally occur during the observation of the activities can instead be covered by this questioning. The purpose of the questioning is to assess or clarify underpinning knowledge and behaviours based on what the assessor has observed and to assist in determining whether the apprentice has reached pass or distinction criteria.

KSBs observed, and answers to questions, must be documented by the independent assessor. The independent assessor will make all grading decisions.

Other relevant information

There may be breaks during the observation to allow the apprentice to move from one location to another as required.

Support material

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

- Observation specification
- Task bank
- Sample question bank
- Marking materials
- Recording documentation

Venue

The observation can take place in:

- employer's premises

The location must have the correct facilities, resources and materials available to support EPA and be approved by the EPAO.

Question development

EPAOs will create example open questions to assess related underpinning knowledge, skills and behaviours. They must review them regularly (and at least once a year) to ensure the sample questions are fit for purpose. The EPAO must produce a bank of example questions to help the independent assessor, but these are for illustration only and the independent assessor may adapt their questions to the apprentice's individual circumstances.

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

Assessment Method 3: Professional Discussion underpinned by 'Portfolio of evidence'

Overview

The rationale for this assessment method is:

- it allows the apprentice to be assessed against KSBs which may not naturally occur in during the observation or may take too long to observe or do not lend themselves to an observation
- it is supported by a Portfolio of evidence, enabling the apprentice to demonstrate the application of skill and behaviours as well as knowledge
- allows for testing of responses where there are a number of potential answers that couldn't be tested through the multiple-choice test
- it is cost effective, as apart from a venue it does not require additional resources

Delivery

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 undertaken during the apprenticeship.

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 ten open competence-based questions that adequately cover the grading descriptors.

The professional discussion must last for 60 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. Further time may be granted for apprentices with appropriate needs, for example where signing services are required.

During this method, the independent assessor must combine questions from the EPAO's question bank and those generated by themselves. The contents of the Portfolio of evidence will influence the questions selected; the assessor will review the Portfolio of evidence and then select areas they wish the apprentice to expand on with reference to the identified grading descriptors. The apprentice can use the Portfolio of evidence 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 that would be typical of a level 3 apprentice in this occupation.

Questions must cover the following topics, all KSBs assigned to this assessment method must be assessed:

- optimisation of CNC programmes to achieve the best yield of materials (K4, S3)
- improving CNC processes (K6, K7, B3, S9)
- producing and maintaining jigs and templates (K15, S12)
- developing and modifying CAD programmes (K16, K17, K18, S13, S15)
- identifying and rectifying machinery faults (K19, K20, S16, B7)
- leading, managing and coaching teams (K22, S17, S18, S19, S20, B8, B9, B10)
- standard tooling on machinery used and how to run test pieces to ensure tooling data has been entered correctly (K25, K26)
- improvements in furniture manufacturing process (B4)
- professionalism, organisation and motivation (B5)

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.

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. Evidence from the professional discussion must be assessed holistically using the grading criteria for this assessment method.

Venue

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

- employer's premises
- a suitable venue selected by the EPAO (e.g. a training provider's premises)

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

Other relevant information

A 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 (and at least once a year) to ensure that it, and its content, are fit for purpose. The specifications, including questions relating to the underpinning knowledge, skills and behaviours, must be varied yet allow assessment of the relevant KSBs.

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

- professional discussion specification
- question bank
- marking materials
- recording documentation

Weighting of assessment methods

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

Grading

Assessment method 1: Multiple Choice Test

KSBs	Fail	Pass	Distinction
K8, K11, K12, K13, K21, K24	Does not meet the pass criteria	18 to 23 correct answers out of 30	24 to 30 correct answers out of 30

Assessment method 2: Observation with questions

Fail	Pass
Does not meet the pass criteria	Apprentice meets all Pass criteria

KSBs	Pass
Load & test CNC programmes K1, K2, K3, K5, S1, S2, S4, B1	Sets compensation data in furniture CNC programmes to meet specifications. Sets tool data and parameters including geometric characteristics, composition and usage in furniture CNC programmes to meet specifications. Sets, loads, proves and optimises CNC programmes to meet specifications. Completes tasks accurately and thoroughly to meet organisational requirements for example no errors in setting data, minimal quality control rejections, products produced meet specifications, piece rates met.
Set up, operate and maintain CNC machines K9, K10, S5, S6, S7, S8	Carries out routine maintenance activity for example pre-start up checks, following the company schedule. Lists the acceptable tolerances allowed according to organisation specification. Uses resources efficiently when operating machinery, for example minimal raw material wastage. Selects appropriate tooling to meet specifications. Sets up and operates CNC machinery to meet specifications.
Work safely K14, S10, S11, B2	Works in a safe manner, following health and safety procedures wearing appropriate PPE, adhering to COSHH records, completing health and safety records and reports Gives one example of working safely with others that does not

	compromise the safety of self and others.
CAD software S14, B6	Reads and interprets specifications and drawings for items being produced. Shows focus and concentration when carrying out activities, avoiding distractions during activities and producing products in line with specifications.
Records K23, S21	Maintains records to the required organisational standard(s). Outlines where to send products for next process.
Tooling S22	Sets tooling in holder to meet specifications.
Specifications K27	Locates relevant specifications and drawings for items to be produced.
Quality standards K28, S23	Checks products meets quality standards and specifications.

Assessment method 3: Professional Discussion underpinned by 'Portfolio of evidence'

Fail	Pass	Distinction
Apprentice does not meet Pass criteria	Apprentice meets all Pass criteria	Apprentice meets all Pass criteria and fully achieves at least 6 from 7 Distinction criteria (each statement is a separate grading descriptor and there may be more than one statement in the separate boxes in the table below)

KSBs	Pass	Distinction
Materials K4, S3	Gives at least one example of how they have optimised machinery for best yield of materials for example monitoring off-cuts.	n/a
CNC Machinery K6, K7, B3	Provides at least two examples of resolving furniture production problems. Outlines modern and traditional tooling, operational processes and the different methods relating to two different types of materials available for use. Plans time effectively to meet organisational requirements whilst showing integrity and aiming for excellence, for example completes work to time to a high standard and demonstrates honesty.	Provides at least one example of delivering planned tasks ahead of company schedule outlining the processes followed, considerations made and the impact on the business when tasks are completed ahead of schedule
Improve CNC Processes S9, B4	Gives at least one example of applying improvement techniques to furniture manufacturing processes for example DRIVE (Define, Review, Identify, Verify, Execute), process mapping, DMAIC (Define, Measure,	Describes the impact of changes on the wider business. For example the impact of improved efficiency, improved quality or cost reductions on the wider business.

	Analyse, Improve, Control), Statistical Process Control (SPC) and Simulation. Consistently strives for improvement in manufacturing processes, for example making suggestions for improvements over time, improving own processes.	
Jigs and Templates K15, S12	Gives at least one example of how standard jigs and holding devices, for example jigs for band-sawing of circular pieces, were produced and maintained to specification.	Outlines at least one example of how complex jigs and holding devices were produced and maintained to specification, for example complex jigs to eliminate trickier handwork.
CNC Programmes K16, K17, K18, S13, S15	Outlines at least two examples of how CAD drawings were created and modified to suit CNC processes using editor software. Identifies machine tooling used.	Explains why specific machine tooling is used for a process.
Faults K19, K20, S16, B7	Describes at least two examples of how they have found and rectified simple machine faults for example automatic tool change process, with reference to how they have expanded their knowledge of how things work. Explains at least two common error codes for machinery used.	Describes at least two examples of how they have found and rectified complex machine faults for example power supply.
Teams K22, S17, S18, S19, S20, B8, B9, B10	Outlines how they have led, managed and coached teams to achieve at least two objectives, for example during the pre-Christmas rush. Illustrates how their own skills were developed and explain how this has led to improvement in their performance. Gives at least two examples of how others were trained to use machinery safely. Identifies at least two examples where flexibility in a changing	Describes how they have taken steps to develop their own skills beyond company requirements, explaining how it this has had a direct positive impact on their role. Identifies at least one example of motivating and supporting team members which led to a positive outcome beyond the set objectives

	environment and demands was demonstrated.	
Tooling K25, K26	Identifies standard tooling on machinery used. Describes how to run test pieces to ensure tooling data is correct.	n/a
Professional behaviour B5	Is organised, acts professionally and demonstrates motivation to succeed, for example not using mobile phone when working, shows initiative, organises workload and time.	n/a
Responsibility B11, B12	Identifies an example of having a mature attitude and behaving responsibly for example, taking a neutral stance to watch your thoughts, actions, and emotions before applying a rational filter to them. Gives an example of having worked effectively with minimal supervision.	n/a

Overall EPA grading

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

This apprenticeship is graded fail, pass or distinction. To achieve an overall distinction, the apprentice must pass the observation and achieve a distinction in the multiple choice test and the professional discussion.

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 – Multiple Choice Test	Assessment method 2 – Observation	Assessment method 3 – Professional Discussion	Overall grading
Fail	Any grade	Any grade	Fail
Any grade	Fail	Any grade	Fail
Any grade	Any grade	Fail	Fail
Pass	Pass	Pass	Pass
Distinction	Pass	Pass	Pass
Pass	Pass	Distinction	Pass
Distinction	Pass	Distinction	Distinction

Roles and responsibilities

Role	Responsibility
Apprentice	<ul style="list-style-type: none"> • Complete the on-programme element of the apprenticeship • Prepare for and complete the EPA
Employer	<ul style="list-style-type: none"> • Identify when the apprentice is ready to pass the gateway and undertake EPA • Notify the EPAO that the apprentice has passed the gateway
EPAO	<p>As a minimum EPAOs should:</p> <ul style="list-style-type: none"> • Appoint administrators/invigilators and markers to administer/invigate and mark the assessment • Provide training and CPD to the assessors they employ • Have no direct connection with the apprentice, their employer or training provider i.e. there must be no conflict of interest • Have processes in place to conduct internal quality assurance and do this on a regular basis • Organise standardisation events and activities in accordance with this plan • Organise and conduct moderation of assessors' marking in accordance with this plan • Have, and operate, an appeals process
Independent assessor	<p>As a minimum an Independent assessor should:</p> <ul style="list-style-type: none"> • Be independent of the apprentice, their employer and training provider(s) i.e. There must be no conflict of interest • Have occupational expertise and knowledge, at the same level than the occupational areas being assessed, which has been gained through working in the industry for a minimum of 4 years. • Hold relevant assessment qualifications, and have undertaken training in assessment practices. • Have a correct and up to date CPD record. Regularly updating their occupational expertise and industry knowledge in the areas being assessed to ensure currency of skills and knowledge. • Meet any additional requirements as specified by the End-Point Assessment Organisation (EPAO). • Undertake a minimum of 1-day's EPAO standardisation training per year

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 • Prepare apprentices for EPA • 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:
Furniture CNC processing
- appoint independent assessors who have recent relevant experience of the occupation/sector at least the same level as the apprentice gained in the last three 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

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 retake any failed assessment methods only.

The timescales for a resit/retake is agreed between the employer and EPAO. A resit is typically taken within 3 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 6 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.

Affordability

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

- online assessment
- using an employer's premises
- assessing multiple apprentices simultaneously

Professional body recognition

Professional body recognition is not relevant to this occupational apprenticeship.

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.

Mapping of knowledge, skills and behaviours (KSBs)

KSB code	KSB statement	Methods mapped against
Knowledge		
K1	tool compensation for the differences in length between the tools assumed during programming and the tools to be used for actual machining.	Assessment method 2
K2	tool data including geometric characteristics, composition and usage	Assessment method 2
K3	parameters of machines including type, function and how to read and set them, safety and guarding of machinery used	Assessment method 2
K4	optimisation for best yield of materials	Assessment method 3
K5	how to set, load, prove (test) and optimise of furniture CNC programmes	Assessment method 2
K6	technical processes, such as capability, awareness of manufacturing procedures, helping to resolve furniture production problems, breakdowns and defining operating procedures	Assessment method 3
K7	tooling and operational process including material technology and furniture manufacturing equipment	Assessment method 3
K8	furniture industry materials and modern and traditional furniture manufacturing methods including wood and timber, manmade composite materials including plywood, MDF (Medium Density Board) and MFC (Melamine Faced Chipboard), veneers, laminates and edging materials, by hand or machinery	Assessment method 1
K9	how to maintain furniture CNC/NC (Computer Numerically Controlled/Numerically Controlled) machinery	Assessment method 2
K10	acceptable tolerances of items manufactured from furniture specifications for example allowances for deviation from norm and defect criteria	Assessment method 2
K11	process improvement techniques for example DRIVE (Define, Review, Identify, Verify, Execute), process mapping, DMAIC (Define, Measure, Analyse, Improve,	Assessment method 1

	Control), Statistical Process Control (SPC) and Simulation	
K12	lean manufacturing techniques, for example, Kaizen, Lean, Just in time and 5S	Assessment method 1
K13	health, safety and environmental management and risk assessment for example Control Of Substances Hazardous to Health (COSHH), Provision and Use of Work Equipment Regulations (PUWER), Health And Safety At Work Act (HASAWA), Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) and manual handling	Assessment method 1
K14	Safe Systems of Work, the formal procedures for safe methods and procedures adopted during work activities, for relevant processes, including use and maintenance of machinery used	Assessment method 2
K15	how to produce and maintain jigs and holding devices	Assessment method 3
K16	how to develop and modify furniture CAD drawings in CNC production	Assessment method 3
K17	machine editor software for programme production	Assessment method 3
K18	machine tooling used for example drills, blades or profile cutters	Assessment method 3
K19	machine fault finding techniques and programming fault finding including differences between simple faults which can be rectified and those that required maintenance team for resolution	Assessment method 3
K20	common error codes for furniture CNC machinery used	Assessment method 3
K21	grievance and discipline procedures and conflict management techniques	Assessment method 1
K22	coaching, mentoring and team development techniques such as the GROW model (Goal, Current Reality, Options (or Obstacles) Will (or Way Forward))	Assessment method 3
K23	where to send products for next process and how to fill production tickets with accurate information	Assessment method 2
K24	measuring devices such as Vernier calipers and height gauges	Assessment method 1
K25	standard tooling on relevant machinery	Assessment method 3
K26	how to run test pieces to ensure tooling data has been entered correctly	Assessment method 3

K27	where to find relevant furniture specifications and drawings	Assessment method 2
K28	product quality standards you need to meet for furniture products produced	Assessment method 2
Skills		
S1	set tool compensation data in furniture CNC programmes	Assessment method 2
S2	set tool data and parameters in furniture CNC programmes	Assessment method 2
S3	optimise machinery for the best yield of materials	Assessment method 3
S4	set, load, prove and optimise furniture CNC programmes	Assessment method 2
S5	manage resources effectively including raw materials and time	Assessment method 2
S6	select tooling suitable for use with materials being processed for example different varieties of wood	Assessment method 2
S7	set up and operate furniture CNC/NC (Computer Numerically Controlled/Numerically controlled) machinery using appropriate safety measures and guards	Assessment method 2
S8	maintain furniture CNC/NC machinery within limits of responsibility for example lubricating machinery, checking fluid levels, keeping machinery clean	Assessment method 2
S9	apply improvement techniques to furniture manufacturing processes for example using different tooling, aggregate heads, tandem loading or tandem loading	Assessment method 3
S10	work safely at all times, wearing appropriate PPE, adhering to COSHH records and completing health and safety records and reports	Assessment method 2
S11	follow Safe Systems of work for the relevant machining processes	Assessment method 2
S12	produce and maintain jigs and holding devices to ensure sufficient workpiece vacuum	Assessment method 3
S13	develop and modify furniture CAD drawings to suit CNC processes	Assessment method 3
S14	read and interpret furniture specifications and drawings	Assessment method 2

S15	use editor software to modify or create furniture CNC programmes	Assessment method 3
S16	rectify simple machine faults for example fast running, blunt tooling, burn marks or incorrect tool compensation	Assessment method 3
S17	manage self and others and influence teams to achieve objectives	Assessment method 3
S18	apply coaching, mentoring and team development techniques such as the GROW model	Assessment method 3
S19	develop own skills to improve furniture CNC performance	Assessment method 3
S20	train others to use machinery safely to company standards	Assessment method 3
S21	record information required accurately for example production records	Assessment method 2
S22	set tooling in various holders for example HSK (hollow taper shank), tribos and shrinkfit	Assessment method 2
S23	able to check furniture products meet quality standards and furniture specifications	Assessment method 2
Behaviours		
B1	thorough and accurate when accomplishing furniture CNC tasks	Assessment method 2
B2	have a safety-first attitude, ensuring the safety of self and others in a furniture CNC machinery environment	Assessment method 2
B3	shows integrity, aims for excellence and manages time effectively	Assessment method 3
B4	strives for improvement in furniture manufacturing processes	Assessment method 3
B5	is professional, demonstrates motivation to succeed and is organised	Assessment method 3
B6	maintain focus and concentration during CNC activities	Assessment method 2
B7	an enquiring mind and be, keen to understand how things work	Assessment method 3
B8	sets an example to others, is fair, consistent and reliable	Assessment method 3
B9	takes personal responsibility for meeting objectives of the team and business	Assessment method 3
B10	be flexible in changing environment and demands	Assessment method 3

B11	demonstrates a mature attitude and has a sense of responsibility.	Assessment method 3
B12	is able to work with minimal supervision	Assessment method 3