



**Level 3 Composites Technician  
Apprenticeship (ST0094/1.0)**

**EPA2: Professional Discussion Guidance**

**Version 5**

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## INTRODUCTION

Apprentices must undertake a 60-minute professional discussion with a three-person independent end point assessment panel (panel) to test the knowledge, skills and behaviours (KSBs) of the apprentice as set out in the standard. The professional discussion will also include a viva on the work-based project already submitted.

## KNOWLEDGE, SKILLS AND BEHAVIOURS (KSBs)

The Level 3 Composite Technician apprenticeship standard states that all technicians employed in the composites sector will need to develop specialist KSBs. These KSBs will be generic and/or technology specific, but the subject areas indicated below will provide a foundation for an apprentice development in composites manufacture.

The EPA provides apprentice with a showcase opportunity to provide oral and documentary evidence of their KSBs developed throughout the apprenticeship in a synoptic way. It enables the EPA panel to test the KSBs acquired by the apprentice throughout the apprenticeship.

The KSBs of the of the Level 3 Composite Technician apprenticeship standard are set out below:

### Knowledge

A composites technician will require a thorough understanding of the industry in which they are employed. They will be able to understand and apply the following areas:

- Working safely, appropriately, and collaboratively.
- Equality & Diversity.
- Maths, science, and engineering disciplines.
- The characteristics of composites and their various applications.
- Composite materials and consumables
- Types of resins (e.g. polyester, epoxy, bio-resins).
- The manufacture of materials (e.g. semi-finished, woven reinforcements, preforms).
- Material science, design, tooling, moulding, laminating, curing, testing, inspection & repair.
- Hand lay-up (e.g. open moulding, spray lay-up).
- Automated lay-up (e.g. automated fibre placement, automated tape layup).
- The manufacture of complex parts (e.g. airplane wings, body armour, turbine blades).
- Quality, Cost and Delivery (QCD) standards and their importance in the workplace.
- Manufacturing costs and the need for preventative maintenance.
- Business improvement techniques and waste reduction.
- Application of IT systems to support manufacture (including CAD/CAM/CMM).
- Automation techniques including programming and operating robots.
- Supporting R & D projects.
- New Product Development (NPD).

## Skills

A composites technician will develop skills in the disciplines of design, mould tool making and preparation, part lay-up, curing, testing, inspection, repair, and material science. They will be able to:

- Select appropriate techniques, procedures, and methods to undertake part manufacture.
- Identify and select materials (resins, matrix, and core).
- Design and prepare mould tools.
- Design and manufacture components.
- Select appropriate consumables required to ensure satisfactory progress and completion of projects and/or manufacturing programmes, in conjunction with any relevant Health and Safety legislation.
- Read and understand technical drawings for part manufacture.
- Laminate geometrically complex parts.
- Operate machinery associated with laminating and automated manufacture.
- Carry out maintenance to machines or equipment to comply with preventative maintenance plans.
- Assist and advise in the planning and preparation of manufacturing programmes and research projects to ensure they meet customer requirements and schedules.
- Understand and follow work instructions.
- Use metrology equipment applicable to the workplace.

## Behaviour

The behaviour of technicians in the composites industry is one of the most important aspects of the standard. Composites technicians will be expected to:

- Manage and apply safe systems of work, ethically and responsibly.
- Show respect for colleagues and the work environment.
- Be focused on customer satisfaction, ensuring that work is undertaken following QCD principles to meet or exceed customers' expectations.
- Have a "right first time" approach.
- Understand and implement continuous improvements in the workplace.
- Solve problems, eliminate waste and risks.
- Undertake engineering activities which contribute to sustainable development.
- Be able to work in a team with effective interpersonal skills.
- Be able to communicate clearly.
- Commit to & apply a professional code of conduct.
- Carry out continuous professional development activities and have a desire to develop a career in composites engineering.

## THE SCOPE

The work-based project takes place in advance of the professional discussion. Following the project, the panel must identify any content which has not been demonstrated in the project. The panel will then determine questions that supplement the work-based project to support the apprentice's KSBs of the Standard.

The professional discussion will also recognise areas which have already been covered in the work-based project so as not to reassess an area in which the apprentice has already demonstrated competence other than in the viva.

## STRUCTURE

The professional discussion will be divided into two stages:

- Viva of the work-based project by the apprentice
- Coverage of the areas specifically for the professional discussion plus areas taken forward from the work-based project

The session will last for 60 minutes in total.

At the opening of the professional discussion the apprentices should be invited to give a viva on their work-based project. The next part of the session will focus on the coverage of the standard. This is where the apprentice will be asked about the areas of the standard that are not covered in the work-based project or where additional evidence is required to make sure all the KSBs have been demonstrated to the required level and competence.

## THE INDEPENDENT END POINT ASSESSMENT PANEL

The panel is comprised of:

- Independent End Point Assessor – someone with experience in the composites field that holds a recognised assessment qualification. This person is the Chair of the panel.
- Professional Body Assessor – someone that is a member of Institute of Materials, Minerals and Mining (IOM3) or another relevant Professional body with significant experience of working within the composites sector.
- A composite engineer from the apprentice's employer who has not had any previous involvement with the apprentice's training. This employer representative on the panel is there to clarify any points related to work, to observe the process, and to support the apprentice. The employer representative is not involved in the pre/post EPA discussions as inclusion could be identified as a conflict of interest in the possibility of influencing a positive outcome for the employer.

## PROFESSIONAL DISCUSSION

A professional discussion is a structured conversation between the apprentice and their panel. It is an in-depth, planned, two-way discussion pitched at the relevant standard level. It is not a chat or a question and answers session.

It provides a holistic approach to assessing knowledge and understanding and is useful in determining not only what and how apprentices are performing, but also their analytical and decision-making abilities. It is used to test the validity and reliability of apprentices' evidence.

Typically, the professional discussion is an opportunity for apprentices to describe their apprenticeship journey and explain how they have applied their learning and developed their professional behaviours.

The panel's role is to manage the process to allow apprentices to prove their knowledge, skills, and behaviour in a supported environment, but without the panel constantly directing and leading the conversation. During the discussion, the panel may use several techniques to ensure the discussion remains focused and effective (i.e. periodically summarising points

covered, questioning to probe for more information or to clarify certain points of the discussion).

At the beginning of the discussion the panel is likely to be doing most of the talking (i.e. reiterating the reason for the discussion and agreeing how the main points of the discussion will be assessed and recorded etc.). However, as the discussion progresses, there should be a gradual 'handing over' to allow the apprentices to enter a full discussion where they have the opportunity of doing most of the talking.

The panel conducting the professional discussion will be the same people who assessed the work-based project. The professional discussion will recognise areas which have already been covered in the work-based project so as not to re-assess an area in which the apprentice has already demonstrated competence other than in the viva. Discussions will help plug any gaps in work-based project to assess all the KSBs have been demonstrated to the required level and competency.

The professional discussion will focus on all the components of the Level 3 Composite Technician Standard, which will enable the panel to make a judgement of the apprentice's occupational competence. It is a structured and formal discussion between the apprentice and the panel, drawing upon information supplied in the report. It covers both what tasks the apprentice has completed in the workplace, the standard of their work, and the behaviours they have demonstrated throughout, such as, being a team player, having a positive attitude, a strong work ethic, being a responsible employee, self-motivation and a proven commitment to the organisation. This enables the EPA to cover a broad range of knowledge and understanding, skills and behaviours.

The evidence presented by apprentices in the professional discussion must be valid, current, authentic, sufficient, and relevant to the standard. By this PIABC Limited mean:

- **Valid:** Relevant and appropriate to meet the KSBs criteria.
- **Current:** The evidence has been produced during the time the apprentice has been on the apprenticeship.
- **Authentic:** The evidence can be identified as the individual apprentice's own work and not that of someone else or a group of people. If produced by the apprentice, if evidence is team-based it must be able to clearly identify the apprentice's contribution
- **Sufficient:** There is enough evidence to be certain that performance to the required standard is consistent and could be achieved on more than one occasion.
- **Relevant:** There is a clear match between the item of evidence and the required KSBs criteria.

## VIVA

The assessment of behaviours will require to be demonstrated by apprentices as part of their viva:

- appropriate safety behaviours, individually and towards others
- a commitment to quality and continuous improvement
- a strong work ethic, including being motivated, reliable, and proactive
- an ability to work individually and as part of a team
- a recognition and understanding of diversity and equality in the workplace
- an ability to communicate effectively at all levels in the organization
- effective time management including prioritisation of work
- a desire to continually learn

**The Institute of Apprenticeships and Technical Education (IfATE) states that behaviours in the context of standards are:** *“Behaviours are mind sets, attitudes or approaches required for competence, generally across the entire occupation. While these can be innate or instinctive, they can also be learnt, so they are effectively a subset of skills. Behaviours tend to be very transferable meaning that, at any one level, they may be more similar across apprenticeship standards than knowledge and skills.”*

It will also be an opportunity for the panel to:

- clarify any points and/or probe the apprentice on the information they have presented in their work-based project
- confirm and validate that the report is the apprentice's own work
- confirm and validate the judgements about the quality of the work the apprentice has completed
- explore areas of work presented in the work-based project, how it was carried out, any problems that they encountered and how these were resolved
- validate the apprentice's skills and knowledge and understanding of the company in terms of their products, processes, procedures, tools, equipment, materials, documentation, and information systems
- elicit the apprentice's depth and breadth of understanding of the professional competence requirements for an Engineering Technician (EngTech)
- explore detail learnt on the apprentice's Level 3 Composites Technician Technical Certificate where the work-based project and other evidence has not covered all the KSBs

## LOCATION

The professional discussion must take place at an agreed date and time at either the employer or lead training provider's premises, unless otherwise agreed with PIABC Limited.

In some circumstances remote assessment may be used to conduct the professional discussions. This means that the panel and the apprentices do not have to be in the same physical location when the assessment takes place.

## ON THE DAY

- **Dress code**  
Apprentices are expected to look smart or wear their work uniform on the day of the professional discussion. This must be in accordance with health and safety requirements of the venue (e.g. no open toe shoes).
- **Identification confirmation**  
Apprentices must bring personal photographic identification (e.g. passport or driving licence), which will be checked before the professional discussion.
- **Mobile phones and tablets**  
The use of mobile phones and other electronic devices at the professional discussion by the apprentice is prohibited.
- **Punctuality and timing**  
All apprentices must be on time for the start of their professional discussion. It is recommended that apprentices arrive at least 30 minutes before its scheduled

start. In instances where the apprentice may arrive late, the apprentice must inform their training provider as soon as possible so the panel is aware.

## ASSESSMENT CRITERIA

PROFESSIONAL DISCUSSION	COMPETENT	NOT COMPETENT
To be deemed competent KSBs are individually demonstrated.	Makes a reasonable attempt to address the achievement of individual KSBs in their professional discussion using appropriate work examples of activities undertaken.	Overly focused on only one or two elements of the KSBs or there are complete gaps (one or more) in coverage of some of the KSBs within the overall professional discussion with insufficient use work examples to explain how many of the KSBs have been achieved or the evidence of role and responsibilities is not sufficiently credible.

## GRADING

The professional discussion will be assessed Pass or Fail; it will not be given a grade.

## SUCCESSFUL COMPLETION OF THE END POINT ASSESSMENT

For an apprentice to pass the end point assessment (EPA) as a whole and be deemed to be competent, the apprentice must pass both EPA1: Work-Based Project and EPA2: Professional Discussion (which includes a viva based on the work-based project).

Should the apprentice fail either EPA1 or EPA2 they are required to re-sit/re-take that component. The number of times an apprentice is permitted to re-sit/re-take the end point assessment and the date at which they do so is determined by the employer.