Railway Engineering Design Technician Apprenticeship – Skills and Knowledge Portfolio

Assessment delivery specification

Programme start date: September 2015

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1 Introducing the New Apprenticeships in England

Background

The government has produced an implementation plan[1] for the future of Apprenticeships in England, following the Richard Review (2012)[2]. The changes, which are in the implementation plan, move the design of Apprenticeships into the hands of employers to make them more rigorous and responsive to employers' needs. Employers will now undertake the design of an Apprenticeship for each occupation that they identify as requiring apprentices.

It is intended that from 2017/2018, all Apprenticeships in England will use the new Apprenticeship Standards and Assessment Plans designed by employers and approved by the Department for Business, Innovation and Skills (BIS).

All new employer-designed Apprenticeships will:

- be based on the required level of skills, knowledge and competency to undertake a specific occupation well and operate confidently in a sector. This forms the standard for the Apprenticeship. The assessment of an apprentice will be against this standard. Apprentices will be awarded a certificate of completion only when they have demonstrated their ability in all areas of the standard
- use a single approach to assessment against the standard. This should include a range of assessment methods that cover the theoretical and practical elements of the Apprenticeship
- have a synoptic end-point assessment that requires the apprentice to use their skills, knowledge and behaviours effectively in an integrated way. Apprentices will be assessed largely at the end of an Apprenticeship programme – with an expectation that, in most cases, at least two thirds of the assessment must take place at the end of the Apprenticeship
- have grading applied to the full Apprenticeship Standard, with apprentices who successfully complete, awarded a Pass, Merit or Distinction. This will include a 'mastery mechanism' – apprentices will need to pass every aspect of their assessment in order to be successful but not every aspect will necessarily be graded
- be of a minimum 12-month duration to ensure that the Apprenticeship provides sustained and substantial training
- include a minimum of 20 per cent off-the-job training, away from the day-to-day job
- have a stronger focus on English and mathematics. All apprentices working towards the new Apprenticeships must achieve Level 1 Mathematics and English qualifications as a part of their Apprenticeship, if they have not achieved them already. Apprentices are also required to work towards Level 2 Mathematics and English qualifications, if they have not achieved them already. For Apprenticeships at Level 3 and above, apprentices are required to achieve Level 2 Mathematics and English qualifications.

[1] The government's plans for implementing these reforms are set out in *The Future of Apprenticeships in England: Implementation Plan*, published in October 2013.

[2] *The Richard Review of Apprenticeships*, November 2012.

2 The Railway Engineering Design Technician Apprenticeship

Overview

The assessment detailed in this document is a mandatory component of the Railway Engineering Design Technician Apprenticeship.

Railway Engineering Design Technicians give technical support to engineers who design infrastructure and systems for railways. The engineering disciplines include signalling, rolling stock, track, systems, civil engineering, communications, electrification and electrical plant. It is likely that many Railway Engineering Design Technicians will specialise in a particular discipline while others will have a broader skills base.

A Railway Engineering Design Technician's work could involve:

- design – surveying a site, producing design drawings, assisting the development of technical solutions and production of calculations
- analysis – use of software systems for data gathering, analysis and design
- planning – helping to manage projects, set deadlines for the design of the project and working to a programme
- site engineering – taking responsibility for checking the progress and quality of specified technical aspects of construction work on site
- team working – working as a member of a team in both an office and on-site environment.

The Apprenticeship is recognised by the Professional Engineering Institution (PEI). On successful completion of the Apprenticeship programme, learners will have satisfied the requirements for registration as an Engineering Technician, enabling them to apply for membership of the relevant PEI.

To achieve the full Apprenticeship learners are required to complete successfully the formative and summative assessments detailed in the Apprenticeship Assessment Strategy in *Annexe A*. They are summarised below.

- Formative assessment of knowledge evidenced by the achievement of the Pearson BTEC Level 3 National Diploma in Engineering.
- Formative assessment of competence evidenced through a Portfolio of Evidence demonstrating achievement of the Apprenticeship skills and knowledge standards detailed in this document. Assessment of behaviours is also carried out as a part of formative assessment.
- Summative assessment, which takes the form of a Synoptic End Point Assessment. This includes a review of the Portfolio of Evidence from the formative competence assessment and a review of a series of short, structured reports that demonstrate that the apprentice can apply their knowledge, skills and behaviours in an integrated way and satisfy the requirements for registration as a Railway Engineering Design Technician by the relevant PEI. The Synoptic End Point Assessment is carried out by the relevant PEI and learners have to be approved by their employer to undertake this assessment.

The typical duration for this Apprenticeship is 36 months but this will depend on learners' previous experience and access to opportunities to gain the full range of competence.

The full Apprenticeship is certificated by the Federation for Industry Sector Skills and Standards (FISSS).

Pearson offers and certificates the BTEC Level 3 National Diploma in Engineering and provides external quality assurance for the Skills and Knowledge Portfolio. The requirements for delivering the Skills and Knowledge Portfolio are detailed in this document. Centres should familiarise themselves with the requirements for all components of the Apprenticeship programme and communicate them to learners clearly.

The published Railway Engineering Design Technician Apprenticeship Standard can be found at www.gov.uk/government/collections/apprenticeship-standards

3 Overview of the Skills and Knowledge Portfolio

Purpose

The Skills and Knowledge Portfolio is used to evidence the formative assessment of competence in the Apprenticeship. Its primary purpose is to provide evidence that learners have:

- acquired all the skills and knowledge elements of the Apprenticeship Standards as detailed on *pages 8–24*
- demonstrated that they have met the four development goals through a series of reflective reports and professional discussion.

The assessment of the Skills and Knowledge Portfolio is to be carried out in the workplace. *Section 4* details the specific requirements for delivering this assessment.

As the Portfolio will be submitted as part of the Synoptic End Point Assessment, it is important that it also acts as a record of a learner's development as set out in the four development goals below.

- Goal 1: they are fit to work in a safety-critical design and engineering environment and understand the safety, rigour and responsibility of this.
- Goal 2: they have the skills and knowledge to understand the foundations of communication, problem solving, Computer-aided Design (CAD), project administration and the science, maths and engineering that underpins the design of railway systems and components.
- Goal 3: they have gained experience in and can apply their knowledge across a range of subjects. As such, they are able to support teams in the design of components and sub-assemblies for railway systems. They are sufficiently self-aware to know their limitations and when they need to develop new skills and ask for help.
- Goal 4: they can exercise judgement, independence and confidence as a Railway Engineering Design Technician, and are a productive member of a team.

To provide evidence for the four goals, learners are expected to complete a short, reflective report every six months, demonstrating how they have integrated the knowledge and skills they have acquired to contribute to a workplace project. A minimum of six reports is to be completed over the course of the Apprenticeship. These reports are an important aspect of learners' portfolios and will be the subject of a professional discussion between learners and their assessor and workplace mentor.

A mentoring approach is required in the development of the portfolio to ensure that learners' progress through the standard is captured effectively and that the required evidence is collected not only to achieve the standard but also to put learners in the best place to gain professional recognition by professional bodies. Assessors are expected to work directly with learners' mentors to identify any knowledge or competency development issues.

4 Delivering the Skills and Knowledge Portfolio

Centre recognition and approval

Centres delivering the Skills and Knowledge Portfolio assessment must be listed on the Skills Funding Agency's Register of Training Organisations and have a contract to deliver the New Apprenticeship Standards qualifications and assessments.

New centres need to apply for and be granted centre recognition and approval to offer Pearson qualifications and assessments.

Existing Pearson centres seeking approval to deliver New Apprenticeship Standards qualifications and assessments, will be required to submit supplementary evidence for approval, aligned to the associated New Apprenticeship Standards and Assessment Plans.

For guidance on seeking approval to deliver Pearson qualifications and assessments, please contact our Approvals Team at ukvqapprovals@pearson.com

Approvals agreement

All centres are required to enter into an approval agreement with Pearson, in which the head of centre or principal agrees to meet all the requirements of the assessment delivery specification and to comply with the policies, procedures, codes of practice and regulations of Pearson and relevant regulatory bodies. If centres do not comply with the agreement, this could result in the suspension of certification or withdrawal of centre or qualification/assessment approval.

Centre resource requirements

As part of the approval process, centres must make sure that the resource requirements below are in place before delivering the assessment.

- Centres must have the appropriate physical resources to support the delivery of the assessment, for example a workplace in line with industry standards, equipment, IT, and learning materials.
- Staff assessing learners must be occupationally competent. Assessors must have current, relevant occupational expertise and knowledge, at the relevant level of the occupational area(s) they are assessing, which has been gained through 'hands on' experience in the industry. Ideally, this would include people holding or working towards a relevant professional qualification registered as either EngTech, IEng or CEng.
- Centres must have robust internal verification procedures in place to ensure the quality and authenticity of learners' work as well as the accuracy and consistency of assessment decisions between assessors operating at the centre. Centres must appoint three personnel: two assessors with relevant industry experience, who hold an assessor qualification and can demonstrate Continuing Professional Development, and one Internal Verifier who has an understanding of the process and standards requirements of the Railway Engineering Design Technician competence requirements. For information on the requirements for implementing assessment processes in centres, please contact the Vocational Assessment team at btecdelivery@pearson.com

- There must be systems in place to ensure continuing professional development for staff delivering the assessment. Centres must have appropriate health and safety policies, procedures and practices in place for the delivery of the assessment.
- Centres must deliver the assessment in accordance with current equality legislation. For further details on Pearson's commitment to the Equality Act 2010, please see *Section 5 Access and recruitment*. For full details on the Equality Act 2010, please go to www.legislation.gov.uk

Language of assessment

The assessment should be conducted in English.

Learners may be assessed in British or Irish Sign Language where it is permitted for the purpose of reasonable adjustment.

Method of assessment

The achievement of the Skills and Knowledge Portfolio is demonstrated through the process of internal and external quality assurance of evidence gathered during the course of learners' work in the workplace.

To pass the Skills and Knowledge Portfolio, learners must meet the skills and knowledge standards and satisfy all the underpinning standards requirements detailed on *pages 8–24*, by providing sufficient and valid evidence for each, and proving that the evidence is their own.

Learners must have an assessment record that identifies the skills and knowledge standards and underpinning standards requirements that have been met. The assessment record should be cross-referenced to the evidence provided and should include details of the types of evidence collected and the date of assessment. Suitable centre documentation should be used to form an assessment record.

It is important that the evidence provided to meet the standards and underpinning requirements is:

Valid	relevant to the standards for which competence is claimed
Authentic	produced by the learner
Current	sufficiently recent to create confidence that the same skill, understanding or knowledge persist at the time of the claim
Reliable	indicates that the learner can consistently perform at this level
Sufficient	fully meets the requirements of the standards.

Types of evidence

To pass the Skills and Knowledge Portfolio, learners must gather evidence that shows that they have met all the skills and knowledge standards and underpinning requirements specified on *pages 8–24*, and the other assessment and quality assurance requirements detailed in this document.

Evidence to demonstrate achievement of the standards can take a variety of forms as indicated below:

- direct observation of learners' performance by their assessor (O) – in specific circumstances where the assessor may not be able to observe the live performance, it is acceptable for learners' performance to be captured using video or audio recordings or photographs to allow the assessor reach an independent assessment decision
- outcomes from oral or written questioning (Q&A)
- products of learners' work, e.g. drawings, reports, presentation (P)
- personal statements, reflective accounts/reports (RA)
- professional discussion (PD)
- authentic statements/witness testimony (WT)
- expert witness testimony (EWT)

The evidence should be collected and assessed over a period of time to ensure reliability of the assessment outcomes.

Learners can use the abbreviations above in their portfolios for cross-referencing purposes. Learners can also use one piece of evidence to prove their achievement of different skills and knowledge standards. They should be encouraged to reference evidence to the relevant standards. Evidence must be available to the assessor, the Internal Verifier and the Pearson Standards Verifier.

For further information on the requirements for centre quality assurance and internal verification process, please contact the Vocational Assessment Team at btecdelivery@pearson.com

Assessment standards and requirements

To pass the Skills and Knowledge Portfolio assessment, learners need to demonstrate that they can satisfy all the standards and underpinning requirements detailed in the table below.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
K1. The different techniques and methods used to design infrastructure, systems and equipment for use by rail transport systems		
K1.3 Industry codes, company standards/procedures, contracts and specifications (for example BS, NWR, GRIP, RIA and LU standards) and when each applies.	Learners can explain: • industry codes standards, contracts and specifications, relevant to their work • how they have applied these in the course of their work • the implications related to non-compliance.	A reflective account supported by a range of work products produced by learners over time. The work products should be collected over a period of time and must evidence learners' understanding of the industry codes, standards, contracts and specifications as detailed in the standard and underpinning requirements. These could be work products related to the assessment of S1.1, for example documents such as BS, NWR, GRIP, RIA, RSSB and LU standards. Issues of confidentiality and commercial sensitivity should be considered before using these documents.
K1.4 Approaches to technical assurance, which will include checking and approval processes.	Learners can explain: • the rationale for quality assurance • relevant approaches to technical assurance • how they have applied these in their work, including relevant forms, documents and processes.	Evidence for K1.4 may be gathered and used from K3.1 and S1.2 and vice versa. A reflective account supported by a range of work products produced by learners in the technical assurance process, for example reports, drawings, calculations and quality assurance documents. Expert witness testimony should be used where there may be potential issues of commercial sensitivity and confidentiality with the sources above.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
K3. How to work effectively and contribute to engineering solutions by the correct use of resources and time		
K3.1 Quality management and assurance systems as applied to the design process.	Learners can explain: • the purpose of quality management and assurance systems • how they have applied them in their design work, including relevant forms, documents and processes.	A reflective account supported by a range of work products produced by learners over time. A range of work products produced by learners and related to quality management and assurance systems in the design process, for example drawings, reports, calculations, document transmittal and document control systems such as Project Wise. Expert witness testimony should be used where there may be potential issues of commercial sensitivity and confidentiality with the sources above.
K3.3 Change and document control procedures, including EDMS.	Learners can explain the importance of change and document control procedures, including EDMS.	A range of work products produced by learners resulting from the use of change and document control procedures, for example use of Project Wise. Professional discussion with learners, associated with work activities incorporating the use of this knowledge, for example while assessing S1.2 and S2.2.
K3.4 Time management within overall programme of work.	Learners can explain how they have managed time throughout the programme of work undertaken, based on best practice principles and tools of time management.	A personal statement by learners or a professional discussion, which could be supported by work products, integrated with the assessment of related skills, for example S2.4, S3.1, S3.2, S3.3. Example of a project delivery programme in Excel or MS Project. Witness testimony could be used to support evidence from sources above.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
K3.5 The commercial, construction and technical constraints on a design.	Learners can: • describe examples of commercial, construction and technical constraints that need to be taken into account during the design process • explain the implications of those constraints not being given proper consideration.	A reflective account produced by learners, which could be based on their own work activities or that of their organisation. Production of an assumptions log, design log or a cost-loaded programme.
K4. How to communicate effectively using a range of techniques		
K4.2 Structure of technical reports and how to write them.	Learners can explain the structure of technical reports they have produced and the best practice principles they have applied in producing them.	Professional discussion with learners based on the technical reports used to evidence achievement of S4.3.
K4.4 Collaboration platforms and effective team working.	Learners can explain how different collaboration platforms support effective team working.	A reflective account or professional discussion with learners, based on examples of team working.
K5. The code of conduct of relevant professional bodies and institutions		
K 5 Knowledge of the Code of Conduct and the responsibilities it imposes on the individual.	Learners can explain the Code of Conduct for their professional body and institution as well as the responsibilities it imposes on the individual.	A professional discussion associated with related skills activities, such as S7.4.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
K7. Sustainable development and their own contribution to economic, environmental and social wellbeing		
K7.2 Awareness of company and client sustainability and environmental policies and their impact on design.	Learners can: • describe their own organisation's and clients' sustainability and environmental policies • explain how these policies impact on design • explain the implications of non-compliance to these policies.	A personal statement, supported by related design reports or professional discussion based on designs created for specific clients.
K7.3 Awareness of Environmental Impact Assessment (EIA).	Learners can explain the purpose of an EIA and how the need for one affects their work.	Professional discussion based on design reports.
K7.4 Awareness of own contribution to economic, environmental and social wellbeing.	Learners can describe: • their contribution to economic, environmental and social wellbeing in the context of their own technical work role • how their personal behaviour and actions outside of a work environment contribute to economic, environmental and social wellbeing.	Professional discussion linked to achievement of skills standard S6.1, S6.2 by referencing relevant work products. Evidence for their personal behaviour and actions outside of the workplace may be gathered over time. The assessor may derive such evidence during the course of their discussion with learners, to gather examples of learners' actions and behaviour showing they act in a way that supports economic, environmental and social wellbeing.
K8. Sources of and approaches to CPD		
K8.1 Appraisal schemes, including appropriate training and development plans.	Learners can describe the appraisal schemes, training and development available to support CPD in their job role.	Professional discussion, based on supporting work products which could include learners' training and development plans, evidence of training they have undertaken (e.g. certificates, attendance, logbooks), CPD portfolio for the relevant PEI, etc.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
K8.2 CPD obligations and competency requirements.	Learners can explain their obligations for CPD and competency requirements for the relevant professional institution.	This could be assessed in the same professional discussion as for K8.1 above.
K9. Ethics and their application in design by which we mean understanding		
K9.1 Protection of client confidentiality. K9.2 Adherence to corporate policies on ethics and diversity.	Learners can: • describe the professional requirements for client confidentiality and the corporate policies on ethics and diversity • explain how they have adhered to these in their work.	A personal statement from learners. Alternatively, this could be assessed through a professional discussion based on related work products to evidence the achievement of skills standards, for example S3.6, S3.7. Witness testimony should support the evidence from above.
S1. Use appropriate scientific, technical and engineering principles, techniques and methods to contribute to the design of infrastructure, systems and equipment for the rail transport system		
S1.1 Locate and apply technical information and standards.	Learners are able to: • use technical reference libraries and regulatory documents to inform design solutions • apply technical standards to railway design proposals.	Work products that demonstrate how learners have located and applied technical information and standards. Evidence could include drawings, reports, calculations and design logs, specifications, codes of practice, regulatory statements of compliance and technical standards applied to projects. Professional discussion integrated and based on the work products produced to evidence S1.2.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S1.2 Draft, produce and check calculations, drawings, plans, schedules, specifications and reports to the required format and necessary standard.	Learners are able to: • perform calculations relating to design of rail infrastructure and systems • produce drawings of design solutions • record and check the data from calculations, investigations and analyses • produce specification documents relating to rail design briefs • record information accurately and store it using the agreed procedures • use established pro forma and templates to present technical information.	A range of work products produced by learners such as drawings, plans, schedules, specifications and reports. Professional discussion integrated and based on the work products. Witness testimony should be used to provide supporting evidence.
S1.3 Operate and use appropriate software systems for CAD, BIM and Project Management.	Learners are able to operate and use software systems for CAD, BIM and/or Project Management in accordance with task objectives as well as industry and organisational standards.	Direct observation of learners, supported by observation records, using the relevant software systems detailed in the underpinning standard requirements. Work products resulting from the use of these systems, for example drawings, calculations, Project Wise, revisions to standard detailing, superseded design detail drawings, RFIs and specifications. Records of project management such as work programmes, bar charts. Witness testimony could be used to provide supporting evidence.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S1.4 Assist with site survey and inspections.	Learners are able to: • collaborate with colleagues in survey and inspection activities • contribute to survey and inspection activities to ensure that they are conducted in accordance with relevant health and safety protocols • communicate with colleagues to ensure the objectives of site surveys achieved • record outcomes of site surveys accurately and clearly in accordance with organisational documentation and procedures.	Direct observation of learners assisting with site surveys and inspections where possible, supported by observation records. Work products of surveying and inspection activities such as field notes, record books, photographs, internal memos and/or emails, results and outcomes of survey activities. Witness testimony could be used to provide supporting evidence.
S2. Work effectively and contribute to produce engineering solutions by the correct use of resources and time.		
S2.1 Contribute to identifying, analysing, developing, optimising and finalising solutions to engineering problems.	Learners are able to: • diagnose engineering problems • compare and contrast possible solutions • present their findings to contribute to the agreement of final solutions within the limits of their professional expertise.	A personal statement supported by relevant and underpinning work products such as assumptions log and design log, staff appraisal records, emails and memos between staff and team members identifying professional judgements and conclusions to technical matters. Witness testimony should be used to provide supporting evidence.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S2.2 Read and interpret design documents, check requirements and ensure standards are met.	Learners are able to: • extract information from design documents • check that design meets the agreed criteria • identify queries, discrepancies and inconsistencies in the information and refer them to other members of the project team.	A personal statement supported by work products produced by learners during the work process. This could include requirements log and/or examples of where learners have monitored, controlled and intervened in work-related activities such as records of meeting minutes. Witness testimony could be used to provide supporting evidence.
S2.3 Follow technical procedures.	Learners are able to: • comply with documented technical procedures to meet specified objectives • maintain internal records which are clear, accurate and complete and conform to accepted industry standards.	Direct observation of learners, supported by observation records, carrying out activities where they apply and follow technical procedures. Questions and answers could be used to support this. Witness testimony should be used to provide supporting evidence.
S2.4 Work within programme and to budget.	Learners are able to: • meet programme timescales and work within budgetary constraints • identify and inform colleagues where it does not prove possible to meet programme and budgetary constraints.	A reflective account supported by relevant work products gathered as part of S3, such as project documentation, bar charts, project duration tools and charts with budget documentation that show calculations and values of parcels of work and/or changes to design and the implications of such changes. Expert witness testimony should be used to provide supporting evidence.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S3. Manage work and maintain the quality of their own work and that of others. By which we mean, they can:		
S3.1 Assess the task to be done, plan/schedule work and manage time.	Learners are able to: • assess the tasks to be done • plan and schedule work to be completed • monitor and co-ordinate time and budgets.	A range of work products produced by learners that shows calculations and assessment of the resources necessary to undertake activities relating to the design and/or implementation of rail engineering works. For example, work schedule/plan and records of meetings. Professional discussion based on the related work products above.
S3.2 Maintain the flow of information so the work can be completed on time.	Learners are able to: • identify the types of information needed to make required decisions • use methods of obtaining and disseminating information that are consistent with organisational values, policies and legal requirements.	A range of work products such as emails, reports or entries into quality assurance records that provide evidence of the learner managing the information flow, disseminating information and providing team members with revised schedules and schemes of work. Professional discussion based on the related work products above.
S3.3 Prioritise and decide when to allocate work to other people.	Learners are able to: • calculate appropriate and realistic allowances to meet anticipated contingencies • assess potential disruption to own programmes and schedules and agree the allocation of work to others • maintain appropriate records of resource plans for the project team.	A reflective report supported by relevant work products such as scheduling and allocation plans, minutes from meetings, email communication between colleagues.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S3.4 Check work at an appropriate level and against appropriate standards and specifications.	Learners are able to apply quality assurance procedures to ensure work meets industry standards and specifications.	Related work products, such as design logs, assumption logs, requirements logs and/or quality assurance pro forma. Professional discussion based on the related work products above.
S3.5 Organise, participate in and record meetings.	Learners are able to: • clarify the purpose of the meeting with the relevant people • check that the agenda and other relevant documentation are produced and forwarded to relevant persons within agreed deadlines • make clear, concise and relevant contributions to meetings • make accurate notes during meetings to the necessary level of detail, including agreed action points and agreed deadlines • circulate records of meetings and decisions to relevant people in line with organisational timescales and requirements.	Direct observation, with supporting observation records, of the learner's participation in meetings. A range of work products such as: • meeting agendas • minutes from meetings • email communication between colleagues. Expert witness testimony could be used to provide supporting evidence.
S3.6 Protect client confidentiality.	Learners are able to comply with industry and organisational policies in relation to the storage of client data.	A personal statement explaining how learners have protected client confidentiality supported by evidence of compliance with correct data storage security measures, signed non-disclosure agreements. This should be supported by expert witness testimony.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S3.7 Adhere to corporate policies on ethics and diversity.	Learners are able to comply with corporate policies on ethical practice and diversity in the context of their own work activities.	A personal statement explaining how they have adhered to the corporate policies on ethics and diversity. Expert witness testimony should be used to provide supporting evidence.
S4. Communicate effectively within a team using a range of techniques, and the correct terms.		
S4.1 Use 'Office' type applications such as spreadsheets, word processors and presentation packages.	Learners are able to use IT applications to present technical information to industry and organisational standards.	Work products such as spreadsheets, documents and presentations produced by learners using ICT software, e.g. tables, charts, graphs, numerical information, text, images. Professional discussion based on the work products provided should be used to provide supporting evidence. It is likely that evidence provided for S4.2 will be appropriate for this skill standard and so the assessment of S4.1, S4.2 and S4.3 could be integrated.
S4.2 Present information to technical and non-technical audiences.	Learners are able to: • adapt the presentation of information to meet the needs of both technical and non-technical audiences • explain rationale for how technical information is presented to different audiences.	Work products such as spreadsheets, documents and presentations produced by learners. Professional discussion based on the work products provided should be used to give supporting evidence. It is likely that evidence provided for S4.1 may be appropriate for this skill standard, where IT software is used to present information to audiences.
S4.3 Write technical reports to agreed standards and formats.	Learners are able to produce technical reports using industry and/or organisation standard templates and layouts.	Technical reports produced by learners, these should be assessed against the agreed standards and formats as defined in the underpinning standard requirements in order to assess their fitness for purpose.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S4.4 Produce drawings and technical specifications to agreed standards and formats.	Learners are able to produce drawings and technical specifications, which are complete, accurate, and comply with the design requirements and standard drawing conventions.	Drawings and technical specifications produced by learners, these should be assessed against the agreed standards and formats as defined in the underpinning standard requirements in order to assess their fitness for purpose.
S4.5 Clearly communicate their ideas and questions verbally using the correct terms.	Learners are able to: • use a range of verbal communication skills, including active listening, questioning, clarifying and summarising, when communicating with others • use correct technical terms in verbal communications.	Direct observation of learners' participation during: • team meetings • presentations • professional discussions. Direct observation could be supported by witness testimonies.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence

S4.6 Use appropriate systems to communicate with colleagues and clients.
 	
S4.7 Can record and communicate messages with correct level of urgency.
	Learners are able to:
	• select methods of communication in line with industry and organisational standards such as:
	  ○ email
	  ○ quality assurance records
	  ○ meetings
	  ○ reports
	  ○ presentations
	• liaise and communicate with those undertaking relevant work on a variety of projects or operations in accordance with:
	  ○ SLAs
	  ○ agreed timescales
	• record and gain approval with relevant people for programmes or operations, methods and attendance on specified projects.
		A range of work products such as: email communications, quality assurance records, minutes of team meetings, minutes of client meetings, reports, presentations.
		
		Professional discussion with learners, based on the provided work products.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S5. Keep themselves and others safe by adhering to safe practices		
S5.1 Identify hazards and assess risks.	Learners are able to carry out risk assessments in which they accurately identify hazards and assess risks and identify ways to effectively minimise or eliminate the risk.	Direct observation of learners undertaking risk assessments, supported by completed risk assessment documentation produced by learners. Professional discussion based on risk assessment documentation. Witness testimony could be used to provide supporting evidence.
S5.2 Follow safe systems of work.	Learners are able to: • conduct regular checks to ensure compliance with the organisational and statutory requirements as well as codes of practice • monitor methods of working to promote health, safety, welfare and environmental protection • explain the methods of ensuring that health, safety, welfare and environmental protection complies with organisational and statutory requirements.	Direct observation of learners undertaking work. Work package plans (method statements), task-briefing sheets. Evidence could be supported by witness testimonies and professional discussion.
S5.3 Hold appropriate competency certifications.	Learners hold current competency certification as required by industry standards such as: • Personal Track Safety (PTS) • Construction Skills Certification Scheme (CSCS).	Learners achieving competency certification relevant to their work as detailed in the Underpinning Standards Requirements and organisational competency management procedures.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S5.4 Adhere to all company safety policies.	Learners are able to comply with health, safety and welfare systems, procedures and/or facilities.	Personal statements supported by relevant work products such as safety incident records in a safety recording database. Witness testimony should be used to provide supporting evidence.
S6. Undertake engineering design work in a way that contributes to sustainable development.		
S6.1 Contribute to the sustainable elements of the design process.	Learners are able to: • comply with environmental legislation and best practice • solve problems in the design process to meet economic, social and environmental requirements.	Reflective account or professional discussion with learners, supplemented by related work products such as documents that provide information to support EIAs (e.g. design log, site survey reports).
S6.2 Contribute to Environmental Impact Assessment.	Learners are able to conduct research in line with organisational policies and procedures to contribute to Environmental Impact Assessments.	

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S7. Maintain their own skills base and learning		
S7.1 Identify training needs and set out training action plans.	Learners are able to: • evaluate the current and future skills and knowledge requirements of their work role, whilst taking account of the organisation's objectives • identify development needs between current and future skills and knowledge requirements of their work role • undertake activities to meet current and future skills and knowledge requirements identified in a development plan.	The recommended source for K8.1 and K8.2 would provide partial evidence for this. This should be supplemented with documentation from training needs analysis or similar organisation-specific processes and the agreed training and development plan for learners. Professional discussion, based on the documentation provided above.
S7.2 Maintain evidence of competence achievement.	Learners are able to: • maintain a portfolio of evidence of competence achievement • provide authentic evidence to meet the Apprenticeship standards and underpinning requirements that is both relevant and recent • agree skills competency with manager in line with company competency management procedure.	Portfolio of evidence.

Skills and knowledge standards	Underpinning standard requirements	Recommended sources of evidence
S7.3 Evaluate achievements and review against development needs.	Learners are able to: • evaluate achievements at key points of the Apprenticeship Programme • review progress against identified development needs • plan for the next stage of their development.	A reflective account by learners supported by their individual development plan or appraisal records and evidence of achievements.
S7.4 Comply with the code of conduct set out by their institution.	Learners are able to: • comply with the code of conduct set out by their professional institution • comply with professional codes of conduct • complete CPD in line with professional body requirements.	The recommended source of evidence for K5 would provide partial evidence for this standard. This should then be supplemented by related work products such as documentation related to personal reviews, appraisal and compliance with professional codes of practice and CPD records.

Making valid assessment decisions

Authenticity of learner work

An assessor must assess only learner work that is authentic, i.e. their own independent work. Learners must authenticate the portfolio evidence that they provide for assessment by signing a declaration stating that it is their own work.

Assessors must take care not to provide direct input, instructions or specific feedback that may compromise authenticity.

Assessors must complete a declaration that:

- the evidence submitted for the assessment is the learner's own
- the learner has clearly referenced any sources used in the work
- they understand that false declaration is a form of malpractice.

Centres can use Pearson templates or their own templates to document authentication.

During assessment, an assessor may suspect that some or all of the evidence from a learner is not authentic. The assessor must then take appropriate action using the centre's policies for malpractice. Further information is given on page 27 under the section *'Dealing with Malpractice'*.

Making assessment decisions using the standards

Assessment decisions are based on the Apprenticeship skills and knowledge standards and underpinning requirements stated on *pages 8–24*.

Assessors make judgements using the standards and underpinning requirements and must show how they have reached their decisions in the assessment records. The evidence from learners can be judged against all relevant elements of the standards and underpinning requirements at the same time. The assessor needs to make a judgement against each element of the standards that evidence is present and sufficiently comprehensive to demonstrate achievement.

Administrative arrangements

Records

Centres are required to retain records of assessment for each learner. Records should include assessments taken, decisions reached and any adjustments or appeals. Further information can be found in the *UK Information Manual.* We may ask to audit centre records so they must be retained as specified.

Reasonable adjustments to assessments

Centres are able to make adjustments to assessments to take account of the needs of individual learners, in line with the guidance given in the Pearson document *Supplementary guidance for reasonable adjustment and special consideration in vocational internally assessed units*. In most instances, adjustments can be achieved by following the guidance, for example allowing the use of assistive technology or adjusting the format of the evidence. We can advise you if you are uncertain as to whether an adjustment is fair and reasonable. Any reasonable adjustment must reflect the normal learning or working practice of learners in a centre or working within the occupational area.

Further information on access arrangements can be found in the Joint Council for Qualifications (JCQ) document *Adjustments for candidates with disabilities and learning difficulties, Access Arrangements, Reasonable Adjustments and Special Consideration for General and Vocational qualifications*.

Both documents are on the policy page of our website.

Special consideration

Centres must operate special consideration in line with the guidance given in the Pearson document *Supplementary guidance for reasonable adjustment and special consideration in vocational internally assessed units*. Special consideration may not be applicable in instances where:

- assessment requires the demonstration of practical competence
- criteria have to be met fully
- units/qualifications confer licence to practice.

Centres cannot apply their own special consideration; applications for special consideration must be made to Pearson and can be made on a case-by-case basis only.
A separate application must be made for each learner. Certification claims must not be made until the outcome of the application has been received.

Further information on special consideration can be found in the Joint Council for Qualifications (JCQ) document *Adjustments for candidates with disabilities and learning difficulties, Access Arrangements, Reasonable Adjustments and Special Consideration for General and Vocational qualifications*.

Both of the documents mentioned above are on our website.

Appeals against assessment

Centres must have a policy for dealing with appeals from learners. Appeals may relate to assessment decisions being incorrect or assessment not being conducted fairly. The first step in such a policy is a consideration of the evidence by a Lead Internal Verifier or other member of the programme team. The assessment plan should allow time for potential appeals after learners have been given assessment decisions.

Centres must document all learners' appeals and their resolutions. Further information on the appeals process can be found in the document *Enquiries and appeals about Pearson vocational qualifications policy*, which is available on our website.

Dealing with malpractice in assessment

Malpractice means acts that undermine the integrity and validity of assessment, the certification of qualifications and/or may damage the authority of those responsible for delivering the assessment and certification.

Pearson does not tolerate actions (or attempted actions) of malpractice by learners, centre staff or centres in connection with Pearson qualifications. Pearson may impose penalties and/or sanctions on learners, centre staff or centres where incidents (or attempted incidents) of malpractice have been proven.

Malpractice may arise or be suspected in relation to any unit or type of assessment in the qualification. For further details on malpractice and advice on preventing malpractice by learners, please see Pearson's *Centre Guidance: Dealing with Malpractice*, available on our website.

The procedures we ask you to adopt vary between units that are internally assessed and those that are externally assessed.

Internal assessment

Centres are required to take steps to prevent malpractice and to investigate instances of suspected malpractice. Learners must be given information that explains what malpractice is for internal assessment and how suspected incidents will be dealt with by the centre. The *Centre Guidance: Dealing with Malpractice* document gives full information on the actions we expect you to take.

Pearson may conduct investigations if we believe that a centre is failing to conduct internal assessment according to our policies. The above document gives further information and examples, and details the penalties and sanctions that may be imposed.

In the interests of learners and centre staff, centres need to respond effectively and openly to all requests relating to an investigation into an incident of suspected malpractice.

Learner malpractice

The head of centre is required to report incidents of suspected learner malpractice that occur during Pearson examinations. We ask centres to complete JCQ Form M1 (www.jcq.org.uk/malpractice) and email it with any accompanying documents (signed statements from the learner, invigilator, copies of evidence, etc.) to the Investigations Team at pqsmalpractice@pearson.com. The responsibility for determining appropriate sanctions or penalties to be imposed on learners lies with Pearson.

Learners must be informed at the earliest opportunity of the specific allegation and the centre's malpractice policy, including the right of appeal. Learners found guilty of malpractice may be disqualified from the qualification for which they have been entered with Pearson.

Teacher/centre malpractice

The head of centre is required to inform Pearson's Investigations Team of any incident of suspected malpractice by centre staff, before any investigation is undertaken. The head of centre is requested to inform the Investigations Team by submitting a JCQ M2(a) form (downloadable from www.jcq.org.uk/malpractice) with supporting documentation to pqsmalpractice@pearson.com. Where Pearson receives allegations of malpractice from other sources (for example Pearson staff, anonymous informants), the Investigations Team will conduct the investigation directly or may ask the head of centre to assist.

Incidents of maladministration (accidental errors in the delivery of Pearson qualifications that may affect the assessment of learners) should also be reported to the Investigations Team using the same method.

Heads of Centres/Principals/Chief Executive Officers or their nominees are required to inform learners and centre staff suspected of malpractice of their responsibilities and rights, please see 6.15 of *JCQ Suspected Malpractice in Examinations and Assessments Policies and Procedures*.

Pearson reserves the right in cases of suspected malpractice to withhold the issuing of results/certificates while an investigation is in progress. Depending on the outcome of the investigation, results and/or certificates may not be released or they may be withheld.

We reserve the right to withhold certification when undertaking investigations, audits and quality assurances processes. You will be notified within a reasonable period of time if this occurs.

Sanctions and appeals

Where malpractice is proven, we may impose sanctions or penalties.

Where learner malpractice is evidenced, penalties may be imposed such as:

- mark reduction for affected external assessments
- disqualification from the qualification
- debarment from registration for Pearson qualifications for a period of time.

If we are concerned about your centre's quality procedures we may impose sanctions such as:

- working with centres to create an improvement action plan
- requiring staff members to receive further training
- placing temporary blocks on the centre's certificates
- placing temporary blocks on registration of learners
- debarring staff members or the centre from delivering Pearson qualifications
- suspending or withdrawing centre approval status.

The centre will be notified if any of these apply.

Pearson has established procedures for centres that are considering appeals against penalties and sanctions arising from malpractice. Appeals against a decision made by Pearson will normally be accepted only from the head of centres (on behalf of learners and/or members or staff) and from individual members (in respect of a decision taken against them personally). Further information on appeals can be found in our Enquiries and Appeals policy, on our website. In the initial stage of any aspect of malpractice, please notify the Investigations Team (via pqsmalpractice@pearson.com) who will inform you of the next steps.

5 Access and recruitment

Our policy on access to our assessment is that:

- they should be available to everyone who is capable of reaching the required standards
- they should be free from barriers that restrict access and progression
- there should be equal opportunities for all wishing to access the assessments.

Centres must ensure that their learner recruitment process is conducted with integrity. This includes ensuring that applicants have appropriate information and advice about the assessment to ensure that it will meet their needs.

Centres should review applicants' prior qualifications and/or experience, considering whether this profile shows that they have the potential to complete the assessment successfully.

All learners undertaking an Apprenticeship Standard must be employed as an apprentice and have an Apprenticeship Agreement at the start of the first day of their Apprenticeship programme.

Access to qualifications for learners with disabilities or specific needs

Equality and fairness are central to our work. Pearson's Equality Policy requires all learners to have equal opportunity to access our qualifications and assessments and
that our qualifications are awarded in a way that is fair to every learner.

We are committed to making sure that:

- learners with a protected characteristic (as defined by the Equality Act 2010) are not, when they are undertaking one of our qualifications, disadvantaged in comparison to learners who do not share that characteristic
- all learners achieve the recognition they deserve from undertaking a qualification and that this achievement can be compared fairly to the achievement of their peers.

For learners with disabilities and specific needs, the assessment of their potential to achieve the qualification must identify, where appropriate, the support that will be made available to them during delivery and assessment of the qualification. Please see the information regarding reasonable adjustments and special consideration on *page 26.*

6 Quality assurance of centres

Quality assurance is at the heart of vocational qualifications and Apprenticeships. Centres are required to declare their commitment to ensuring quality and to giving learners appropriate opportunities that lead to valid and accurate assessment outcomes.

Pearson uses external quality assurance processes to verify that assessment, internal quality assurance and evidence of achievement meet nationally defined standards. Our processes enable us to recognise good practice, effectively manage risk and support centres to safeguard certification and quality standards.

Our Standards Verifiers provide advice and guidance to enable centres to hold accurate assessment records and assess learners appropriately, consistently and fairly. Centres offering qualifications and assessments as part of the New Apprenticeship Standards will usually receive two standards verification visits per year (a total of two days per year). The exact frequency and duration of Standards Verifier visits will reflect the level of risk associated with a programme, taking account of the:

- number of assessment sites
- number and throughput of learners
- number and turnover of assessors
- number and turnover of internal verifiers
- amount of previous experience of delivery.

If a centre is offering more than one component within a New Apprenticeship Standard, wherever possible, we will allocate the same Standards Verifier for all components. We will work closely with centres offering New Apprenticeship Standards qualifications and assessments, so we can monitor and continuously improve our associated quality assurance arrangements.

For further guidance, please contact the Vocational Assessment Team at btecdelivery@pearson.com

7 Further information and useful publications

To get in touch with us visit our 'Contact us' pages:

- Edexcel, BTEC and Pearson Work Based Learning contact details: qualifications.pearson.com/en/support/contact-us.html
- books, software and online resources for UK schools and colleges: www.pearsonschoolsandfecolleges.co.uk

Key publications

- *Adjustments for candidates with disabilities and learning difficulties – Access and Arrangements and Reasonable Adjustments, General and Vocational qualifications* (Joint Council for Qualifications (JCQ))
- *Supplementary guidance for reasonable adjustments and special consideration in vocational internally assessed units* (Pearson)
- *Suspected Malpractice in Examination and Assessments: Policies and Procedures* (JCQ)
- *Equality Policy* (Pearson)
- *Recognition of Prior Learning Policy and Process* (Pearson)
- *UK Information Manual* (Pearson)
- *UK Quality Vocational Assurance Handbook* (Pearson).

All of these publications are available on our website.

8 Professional development and training

Professional development and training

Pearson supports customers with training related to our qualifications and assessments. This support is available through a choice of training options offered on our website:

The support we offer focuses on a range of issues, such as:

- planning for the delivery of a new programme
- planning for assessment and grading
- developing effective assignments
- building your team and teamwork skills
- developing learner-centred learning and teaching approaches
- building in effective and efficient quality assurance systems.

The national programme of training we offer is on our website. You can request centre-based training through the website or you can contact one of our advisers in the Training from Pearson UK team via Customer Services to discuss your training needs.

Training and support for the lifetime of the qualifications

Training and networks: our training programme ranges from free introductory events through sector-specific opportunities to detailed training on all aspects of delivery, assignments and assessment. We also host some regional network events to allow you to share your experiences, ideas and best practice with colleagues in your region.

Regional support: our team of Regional Quality Managers, based around the country, are responsible for providing quality assurance support and guidance to anyone managing and delivering NVQs/competence-based qualifications and assessments. The Regional Quality Managers can support you at all stages of the standard verification process as well as in finding resolutions of actions and recommendations as required.

To get in touch with our dedicated support teams please visit our website at: qualifications.pearson.com/en/support/contact-us.html

Online support: find the answers to your questions in *Knowledge Base*, a searchable database of FAQs and useful videos that we have put together with the help of our subject advisors to support you in your role. Whether you are a teacher, administrator, assessment associate or training provider, you will find answers to your questions. If you are unable to find the information you need, please send us your query and our qualification or administrative experts will get back to you.

9 Contact us

We have a dedicated Account Support team, across the UK, to give you more personalised support and advice. To contact your Account Specialist:

Email: wblcustomerservices@pearson.com
Telephone: 0844 576 0045

If you are new to Pearson and would like to become an approved centre, please contact us by:

Email: wbl@pearson.com
Telephone: 0844 576 0045

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For information about Edexcel, BTEC or LCCI qualifications visit qualifications.pearson.com

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