

NAS Level 3 Network Cable Installer End-Point Assessment Specification



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Introduction to Notebook Assessment Services

Welcome to the Notebook Assessment Services (NAS) End-Point Assessment specification for the Level 3 Network Cable Installer Apprenticeship Standard (ST0485). This specification is designed for Version 1.1 of the standard.

The information for this apprenticeship standard can be accessed on the website of the Institute for Apprenticeships & Technical Education (IfATE) [here](#). The assessment plan can be accessed [here](#).

NAS is an independent End-Point Assessment organisation that has been approved to offer and carry out the Independent End-Point Assessment (EPA) for the Level 3 Network Cable Installer Apprenticeship Standard. NAS mark and Internally Quality Assure (IQA) all EPA in accordance with marking and quality assurance processes.

Additionally, all EPAs are Externally Quality Assured (EQA) by Ofqual.

This specification is designed to outline all you need to know about the EPA for this Standard and will also provide an overview of the on-programme delivery requirements.

In addition, advice, and guidance for training providers on how to prepare apprentices for the EPA is included. The approaches suggested are not the only way in which an apprentice may be prepared for their assessments, but providers may find them helpful as a starting point.

Key facts

Apprenticeship Standard:	Network Cable Installer
Reference Code:	ST0485
Version:	1.1
Level:	3
LARS Code:	448
On Programme Duration:	Minimum of 12 months (with 20% off-the-job training)
EPA Period:	3 Months
Overall Grading:	Fail/ Pass/ Distinction
Assessment methods:	<ol style="list-style-type: none"> 1. Practical demonstration and questions 2. Professional Discussion requiring submission of a portfolio of evidence
Assessment Order	Assessments can be taken in any order
Professional Recognition	Aligns with recognition by the Institute of Telecommunications Professionals

Assessment methodology summary

Practical Demonstration and Questions

Timed assessment, maximum of 7 hours over 1-2 days, maximum two apprentices at a time.

If only one apprentice is available, NAS or the employer will arrange for an additional person to assist where required for health and safety reasons.

Practical demonstration

1. Install, terminate, and test copper cable
2. Install, terminate, and test fibre optic cable

Covers the skill areas of the Standard.

Open questions during the practical demonstration will cover the KSBs of the Standard.

Grading: Fail/ Pass/ Distinction

Professional Discussion and Portfolio

Required the compilation of a portfolio containing at least one piece of evidence mapped to **each** Knowledge, Skill and Behaviour (KSB).

The portfolio must be submitted at Gateway, a minimum of 14 days before the Professional Discussion.

Covers all KSBs areas of the Standard

The Professional Discussion will be based on the Portfolio and comprise a minimum of 20 questions lasting 75 minutes during a 1-1 conversation with the Independent End-Point Assessor (IEPA).

Covers the knowledge areas of the Standard.

Grading: Fail/ Pass/ Distinction

Gateway Requirements

For Network Cable Installer, the following requirements must be met and evidenced for an apprentice to pass through Gateway:

- The employer must be satisfied that the apprentice is consistently working at, or above, the level of the occupational standard.
- The apprentice must hold a Level 1 English and Maths functional skills qualification or equivalent.
- The apprentice must compile and submit a portfolio of evidence sufficient to evidence the apprentice can apply the knowledge, skills and behaviours required as mapped to the Professional Discussion.
- NAS Gateway Declaration Form.
- NAS Apprentice Portfolio Checklist.

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

Overview of the Standard

The role of the network cable installer is to install, terminate, test, and certify network cable infrastructure components in accordance with National and International industry standards. This network infrastructure will provide the communications backbone for the digital infrastructure ecosystem, enabling all types of digital devices including computers, servers, smart devices, security equipment, wireless access points, access control, building management systems and lighting systems to communicate with each other, internally, nationally and globally.

Installers work in data sensitive environments and contribute to the organisation's cyber security strategy by ensuring physical security as well as complying with basic cyber security principles for the maintenance of confidentiality, integrity, and availability of data.

They could be called upon to work in the Inside Plant (ISP) environment which is dedicated to the installation of cable within buildings and structures, and the Outside Plant (OSP) environment, which is dedicated to the installation of cable externally between buildings, cities and countries.

The size of the task or project that a network cable installer could be involved in, ranges from a single outlet point in a customer's premises to thousands of outlets in a new office block, or from a single fibre cable termination in a building to the installation of hundreds of fibres over many kilometres in local, national, and international communities. The role of the installer is very physical and often involves lifting and moving heavy equipment.

Striving to deliver excellent and consistent levels of customer service is a vital part of the role. Installers work diligently to accurately interpret customer requirements and endeavour to meet high-quality standards.

On-programme requirements

The process of learning, development and on-programme assessment is crucial to ensure that the apprentice develops the KSBs required to achieve full competence in line with the Network Cable Installer Apprenticeship Standard.

Apprentices will be required to demonstrate continuous and sustained progress towards the EPA by completing work set out by their employer and demonstrating the KSBs required in the relevant role.

The on-programme aspect of the apprenticeship is expected to take a minimum of 12 months to complete and should include specific milestones to ensure that the apprentice continues to make good progress towards their EPA.

Therefore, it is recommended that quarterly milestone meetings with the training provider, employer and apprentice are scheduled to check progress against KSBs and for everyone to give feedback.

The milestone meetings could take the form of one-to-one tutorials, interviews, or professional conversations to support the development of the apprentice's communication and employability skills.

The apprentice's manager/mentor should support the development of the portfolio which underpins the Professional Discussion by:

1. Providing sufficient time for the apprentice to prepare a portfolio
2. Providing work-based opportunities for the apprentice to gather evidence
3. Authenticating that the content of the portfolio is the apprentice's own work

Managers/mentors shall not:

- Provide evidence for the apprentice to include in the portfolio other than witness testimonies
- Assess the portfolio

This period of learning and associated assessments must be completed before the EPA can take place.

All training leading to EPA should cover the breadth and depth of the Standard, integrating the KSBs to ensure that the apprentice is sufficiently prepared to undertake the EPA.

Registration

Apprentices should be registered onto ACE 360 as soon as they start their apprenticeship programme and the employer has decided to use NAS for their EPA.

Gateway

How to prepare for Gateway

To begin their EPA, an apprentice must first pass-through Gateway. This stage is driven by the employer being satisfied that the apprentice is consistently working at or above the level set out in the occupational standard. Essentially, stating that the apprentice has achieved occupational competence. This decision is often made at a Gateway meeting involving the employer, the apprentice, and the training provider. The decision must ultimately be made by the employer.

The apprentice should prepare for this meeting by bringing along relevant work-based evidence, including:

- Customer feedback
- Recordings
- Manager statements
- Witness statements
- Portfolio
- Apprentice Portfolio Checklist

As well as evidence from others, the apprentice may wish to include:

- Mid and end-of-year performance reviews
- Feedback to show how they have met the KSBs while on programme

Apprentices should be advised by employers and providers to gather evidence and undertake the required qualifications during their on-programme training.

It is recommended that employers and providers complete regular checks and reviews of this evidence to ensure the apprentice is progressing and achieving the Standards before the formal Gateway meeting is arranged.

The Gateway meeting

The Gateway meeting should last around 1 hour and must be completed on or after the apprenticeship on-programme end date.

It should be attended by the apprentice and the relevant people who have worked with the apprentice on programme.

During the meeting, the apprentice, employer, and training provider will discuss the apprentice's progress to date and confirm if the apprentice has met the full criteria of the apprenticeship Standard during their on-programme training.

The **Gateway declaration form** should be used to log the outcomes of the meeting and agreed upon by all 3 parties. This form is available to download from ACE 360 for each standard. The form should then be submitted to NAS via ACE 360 along with the other required documents to initiate the EPA process. If you require any support completing the Gateway readiness report, please contact NAS.

Please note: a copy of the Standard should be available to all attendees during the Gateway meeting.

Reasonable Adjustments and Special Consideration

A reasonable adjustment, as defined by Ofqual, is an adjustment to an assessment to enable a disabled Learner to demonstrate his or her knowledge, skills and understanding to the levels of attainment required by the specification for that qualification.

A special consideration, as defined by Ofqual, is consideration to be given to a Learner who has temporarily experienced an illness or injury, or some other event outside of his or her control, which has, or is reasonably likely to have, materially affected the Learner's ability to:

- a. take an assessment, or
- b. demonstrate his or her level of attainment in an assessment

Please refer to the NAS Reasonable Adjustments and Special Consideration Policy for full information on eligibility and applying for a reasonable adjustment or special consideration. This policy is accessible via the NAS website and ACE 360.

Photographic ID requirements

All employers are required to ensure that each apprentice has their identification with them on the day of assessment so the IEPA can check that the person undertaking the assessment is indeed the person they are claiming to be.

NAS will accept the following as proof of an apprentice's identity:

- A valid passport (any nationality)
- A signed UK photocard driving licence
- A valid identity card issued by HM forces or the police
- Another photographic ID card, e.g., employee ID card, travel card, etc.

Assessment

Practical Demonstration and Questions - Component 1 Practical Demonstration and Questions

Overview

Apprentices will be observed by an IEPA completing a practical demonstration consisting of two distinctly separate tasks, in which they will demonstrate the KSBs assigned to this assessment method. The tasks are for the apprentice to:

- Install, terminate, and test copper cable
- Install, terminate, and test fibre optic cable

NAS will arrange for the practical demonstration and questions to take place in consultation with the employer and training provider. The practical demonstration and questions will be carried out over a maximum period of seven hours. The IEPA has the discretion to increase the time of the practical demonstration and questions by up to 10% to allow the apprentice to complete the last task that is part of this element of the EPA. This allows an additional 42 minutes. Breaks are permitted to allow the apprentice to move between locations and for meals.

The tasks will be split into discrete sections held over a maximum of two working days. The IEPA will observe a maximum of two apprentices at one time. On the occasions where only one apprentice is being assessed, the employer or NAS will provide an additional person to assist where 2-person working is required for health and safety reasons.

Delivery

Apprentices shall receive written and verbal instructions, including the timescales they are working to before the assessment starts. Each apprentice shall be given an induction briefing into the assessment venue on the day of the assessment before beginning the practical demonstration, paying particular attention to:

- The extent or limits of the work area to be worked in by the apprentice during the practical demonstration
- Known health and safety risks or hazards
- Actions in the event of an emergency
- Planned alarm tests
- Tools and equipment available for use

NAS use the following approach:

- The IEPA shall provide an introductory brief to the apprentices detailing domestic arrangements and conduct of the practical demonstration and questions.
- To mitigate health and safety risks, the IEPA may allow apprentices to work in pairs for the sole purpose of initial cable installations when working at height i.e., getting the cables into the basket. All other tasks (dressing-in, fastening etc) must be carried out unaided.
- The IEPA may terminate the EPA for any apprentice that works in an unsafe manner. This may include:
 - multiple minor infractions - working practices which, if allowed to continue unchecked, could be likely to cause harm to the individual or other persons present in the immediate vicinity. Four infractions will result in the termination of this assessment method.
 - a single serious safety error - an occurrence that could have or has caused serious injury to the individual or other persons present in the work environment.

Apprentices may take in user manuals for technical equipment. There will be errors included within the project briefing document which will offer apprentices an opportunity to assess technical irregularities and offer solutions.

The apprentice will be required to:

- Lay cable
- Install wire basket and UPVC trunking, incorporating vertical and horizontal containment routes at high and low levels
- Loom of cables into cabinet
- Install brackets using spirit level
- Terminate copper (Unshielded Twisted Pair and Foil Twisted Pair [UTP/FTP]) and fibre optic cables including:
 - One UTP and one FTP outlets at low level
 - Six copper (UTP) panel to panel links
 - One fibre cable panel to panel link with 4 spliced fibres and 4 direct terminated type fibres

The observation will usually be conducted in person at the employer's premises. The requirements for this environment are that it is either a simulated network equipment room or a real environment utilising an electrically and spatially separated area. Maximum dimensions for the work area will typically be 5m(w) x 10m(l) x 3m(h). The work area shall be fitted with:

- Equipment cabinets:
 - 3 x data racks, typically 42U 800mm x 1000mm data racks. Racks may be bonded together and shall have a minimum 1.2m front and rear working access, and a minimum 900mm side access at one end for egress.
 - Racks shall be fitted with:
 - 19" Mounting rails
 - Front/rear doors
 - Plinth
 - Earth bonding
- Workstations:
 - To simulate individual workstations, backboards constructed of 25mm ply or MDF, measuring typically 2m(l) x 1.6m(h), shall be installed on the walls or mobile units spaced equidistantly and at a minimum of 1m above floor level.
- Cable Containment:
 - 3Cable basket, typically 100mm x 50mm shall be installed at a height of approximately 2m and shall be routed from the cabinets, completing a loop around the perimeter of the area. Cable basket is to be bonded throughout and incorporate waterfall drop-offs to the cabinets.
- Lighting:
 - Sufficient lighting for work to be undertaken in a safe manner. This should equate to 500 Lux measured at 1m above floor level in all areas.

The assessment environment must be approved by NAS prior to the assessment. Please ensure that sufficient information is provided at Gateway to allow this to take place.

Additionally, the assessment must be conducted in line with NAS' controlled assessment policy.

NAS will ensure that the following equipment (including user manuals) are available for the assessment:

- Installation equipment, including UPVC trunking and conduit for outlet drops, Cat 6 components for (outlet, cable. patch panels) for horizontal links.
- Installation Tools:
 - Hand tools for cutting and mounting trunking/conduit
- Stripping and termination tools:
 - Fibre and copper certification test equipment, minimum Cat 6a and Tier 1 Optical Fibre testing
 - Fusion splicing tools

- Labelling machines

Practical Demonstration and Questions - Component 2 Questions

At appropriate points during the practical demonstration, the IEPA will ask the apprentice a minimum of five open questions. These questions will assess the underpinning KSBs.

Professional Discussion

The Professional Discussion is a conversation between the IEPA and the apprentice where the apprentice will be asked a minimum of 20 questions. These questions will align with the KSBs assigned to the Professional Discussion. The discussion can take place at the employer's premises, or another suitable venue selected by the EPAO. The venue must meet NAS' Controlled Assessment Policy and can utilise video conferencing.

The discussion must last for 75 minutes, and the IEPA has the discretion to increase the time allowance by up to 10% to allow the apprentice to complete their last answer.

The discussion will be supported by the apprentice's portfolio, submitted at Gateway, and can be accessible to the IEPA and the apprentice during the discussion. The portfolio itself will not be directly assessed.

The portfolio submitted at Gateway must evidence that the apprentice can apply the KSBs to the Professional Discussion and include the completed Apprentice Portfolio Checklist.

There must be at least one piece of evidence mapped to each KSB in the Professional Discussion. One piece of evidence can be referenced against more than one KSB. It is expected that there will typically be a minimum of 5 pieces of evidence.

The portfolio should contain written accounts of activities that have been completed and referenced against the KSBs, supported by appropriate evidence, including photographic evidence and work products such as:

- work instructions
- safety documentation
- company policies and procedures as appropriate to the activities.

Progress review documentation should also be included. Self-reflective accounts or self-assessment are not permissible.

Assessment Method Grading

Assessment Method 1: Practical Demonstration and Questions

KSBs	Name of grade	Grade descriptor
K1, K4, K5, K6, K15	Fail	Fails to meet the pass criteria
S1, S2, S3, S4, S5, S6, S7, S8, S9, S10, S11, S12, S13, S14, S15, S16 B1, B2, B4, B7	Pass	<p>All of the following pass criteria need to be achieved to obtain a pass:</p> <p>Creates a schedule for their own work from the task descriptions supplied</p> <p>Creates a plan of sub-tasks required to complete the project and accurately estimates timings and allocates appropriate timing to each sub-task</p> <p>Extracts detail from project documentation to quantify tools and equipment required for tasks</p> <p>Describes the components of the horizontal permanent link and channel, explaining the role of the floor distributor</p> <p>Provides detail of different cable categories and construction types</p> <p>Describes when and how the following tests are undertaken:</p> <ul style="list-style-type: none"> • Copper cable certification • Tier 1 testing of optical cables • Tier 2 testing of optical cables <p>Explain required items and their uses in the construction of communications equipment cabinets</p> <p>Demonstrates compliance of the individual in the workplace as specified in the HASAW 1974</p> <p>Installs cables into containment systems in accordance with national standards, in a safe manner and free of damage</p>



		<p>Accurately interprets diagrams and confidently selects the correct range of tools and installation components required to complete the task</p> <p>Assess the appropriate MEWP equipment required for installation activities. States the procedure for the setting up and safe use of MEWPs</p> <p>Prepares to enter and exit confined spaces in a safe manner</p> <p>Correct safety and personal protective equipment are selected and used in accordance with the NRSWA</p> <p>Selects the correct components for copper and fibre optic cable testing and carries out testing and records results</p> <p>Fastens cables securely and labels at the appropriate locations</p> <p>Terminates copper and fibre cables using appropriate components, and demonstrating the correct manufacturer techniques</p> <p>Sets up the required test parameters as per the customers requirement</p> <p>Interprets test certificates to ensure that the correct criteria have been applied to the cable under test and is able to explain the fields included in the test report Can correctly explain the criteria for pass/fail test results.</p> <p>Correctly demonstrates the procedures for preparing to carry out works in the highway, in particular, the activities involved in cable avoidance testing and the setting up of signing, lighting and guarding systems</p> <p>Correctly analyses and interprets design documentation to create a list of tools and installation components for completion of the installation task</p>
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		<p>Determines the appropriate containment system to support the cabling media, defined by type, construction and size</p> <p>Uses appropriate tools</p> <p>Works safely at height</p> <p>Completes the installation of trunking and conduit in a safe manner</p> <p>Components are securely mounted to the wall</p> <p>Ensures that cabinets are locked when complete and keys are given to the appropriate person</p> <p>Delivers a task brief to the independent assessor detailing the approach to the project and the health and safety controls to be implemented.</p>
	Distinction	<p>In addition to achieving all pass criteria, all of the following distinction criteria need to be achieved to obtain a distinction:</p> <p>Completes the tasks in under 6 hours without detriment to safety procedures and installation quality</p> <p>Cables are free from stress and there are no signs of multiple re-terminations</p> <p>The termination area is free from debris</p> <p>Describes the escalation process to be used when errors in project documentation arise</p> <p>Is able to create a schedule for the installation team from the task descriptions supplied</p> <p>Can describe the campus hierarchy, giving detail of the distribution points including locations and capacities</p>

		<p>Explains the rationale for the selection of cable media</p> <p>Explains the rationale underpinning the contractual requirements for testing and the acceptance of *Pass/*Fail test results</p> <p>Describes the selection criteria for communications cabinets and discuss the range of sizes with respect to footprint and height</p> <p>Explains the requirement of the supervisor in the workplace as specified in the HASAW 1974</p>
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Assessment Method 2: Professional Discussion

KSBs	Name of grade	Grade descriptor
K2, K3, K7, K8, K9, K10, K11, K12, K13, K14, K16, K17, K18, K19, K20 B3, B5, B6	Fail	Fails to meet the pass criteria
	Pass	<p>All of the following pass criteria need to be achieved to obtain a pass:</p> <p>Explains how Ohms law is applied when calculating electrical values</p> <p>Explains how analogue electrical signals represent digital data</p> <p>Explains how light is transmitted through optical fibres</p> <p>Explains how own workmanship can affect the quality of performance</p> <p>Explains the risk associated with the tasks that they might be expected to undertake and explains what actions they would take to reduce those risks</p>



	<p>Explains the values of being an effective team member and provides examples of how they have made an effective contribution to team working scenarios</p> <p>Explains the basic principles of the NRSWA and the role of the NRSWA operative</p> <p>Explains the principles of signing, lighting and guarding</p> <p>Can list the six standards documents in the BSEN 50173 series and in what situation they might be used</p> <p>Describes what actions they may undertake to ensure that work is finished to the highest quality</p> <p>Defines who they are required to communicate with from the customers organisation</p> <p>Identifies the three types of asbestos and explains the risk associated with asbestos and where it might be present in the workplace</p> <p>Describes the purpose of BS7671 and the relevance of the edition number and the colour of the cover</p> <p>Is able to describe situations where the Working at Height Regulations come into force and the safe working practices to be applied</p> <p>Describes examples of 'smart' devices and how they would connect to a network</p> <p>Explains how they have used their own initiative to overcome any obstacles encountered in the workplace</p>
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		<p>Explains the effect of electromagnetic interference and provide examples of sources of interference</p> <p>Describes different types of media supporting other devices</p> <p>Can describe the following documents:</p> <ul style="list-style-type: none"> ● Bill of Materials ● Rack Face Layout ● Patch list <p>Explains own responsibilities and actions to be taken in protecting cyber security</p> <p>Explains their organisations system for task planning and management</p> <p>Explains own responsibilities when using a workflow management system</p> <p>Identifies potential security issues such as breach of secure areas and demonstrates a commitment to safeguarding data integrity</p>
	Distinction	<p>In addition to achieving all pass criteria all of the following distinction criteria need to be achieved to obtain a distinction:</p> <p>Describe the escalation process to be used when errors in project documentation arise</p> <p>Can explain how to calculate loss budgets in the fibre channel</p> <p>Describes the formal risk assessment process, the method for evaluating and quantifying risk, and reporting requirements</p> <p>Explains examples of quality criteria and how they would differentiate between a pass and fail</p>



		<p>Explains the difference between quality and compliance</p> <p>Explains the immediate actions and escalation process when ACM is believed to have been identified in the workplace</p> <p>Explains how working practices can be adapted to avoid risks associated with working at height</p> <p>Explains the role of shielded cable in protecting against EMI and the installation process to ensure correct earth bonding Describes the project closure document set</p> <p>Explains the requirements to protect customers data and can detail the process for reporting potential security breaches</p> <p>Explains the limitation of the qualification and the renewal process</p> <p>Identifies the safety and PPE equipment required when undertaking streetworks</p>
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Before the assessment

The employer/training provider should brief the apprentice on the areas that will be assessed during the EPA.

Employers/training providers should:

- Ensure the apprentice knows the date, time, and location of the assessment
- Brief the apprentice on the activities to be carried out and the duration of the assessments
- Ensure the apprentice knows which criteria will be assessed
- Encourage the apprentice to reflect on their experience and learning on-programme to understand what is required to meet the Standard
- Be prepared to provide clarification to the apprentice, and signpost them to relevant parts of their on-programme experience in preparation for their assessment
- Strongly advise apprentices to take a printed copy of their portfolio and the Apprentice Portfolio Checklist to which they can refer during the Professional Discussion.

Aiming for distinction

For the apprentice to give themselves the best chance of achieving a distinction, they should prepare as best they can.

The IEPA may ask questions or give prompts to explore why the apprentice has approached a task in a certain way and to provide them with more opportunities to demonstrate the distinction criteria which may require them to justify or explain their thinking to a higher level.

Apprenticeship Grading

Practical Demonstration and Questions

To achieve a **pass**, apprentices must achieve 100% of the relevant KSB criteria.

To achieve a **distinction**, apprentices must achieve 100% of the KSB criteria at pass plus demonstrate achievement of each of the distinction characteristics to achieve a distinction.

Unsuccessful apprentices will have not achieved all pass criteria.

Professional Discussion

To achieve a **pass**, apprentices must achieve 100% of the relevant KSB criteria.

To achieve a **distinction**, apprentices must achieve 100% of the KSB criteria at pass plus demonstrate achievement of each of the distinction characteristics to achieve a distinction.

Unsuccessful apprentices will have not achieved all pass criteria.

The final apprenticeship grade is based on performance across both EPA methods. The IEPA will combine the result of the Practical Demonstration and Professional Discussion to produce a final grade. Both components are equally weighted. The apprentice must achieve a **pass** in both components to gain an overall **pass** and gain a **distinction** in both components to gain an overall **distinction** as shown in the table below.

Practical Demonstration and Questions	Professional Discussion	Overall outcome
Pass	Pass	Pass
Pass	Distinction	Pass
Distinction	Pass	Pass
Distinction	Distinction	Distinction

NAS will issue a results statement to the Training Provider via ACE360. The results statement will detail the result for each of the EPA activities, alongside the overall grade. It will also provide details of the apprentice's rights to appeal, and how to arrange resits or retakes.

NAS will send the results to the training provider and after 10 working days, when the appeals window has elapsed, will apply for the apprenticeship certificates. Where an appeal is submitted, the apprenticeship certificate will not be applied for. Certificates will be sent direct to the Employer from the Education and Skills Funding Agency.

Retake and resit information

Where an apprentice fails an assessment component or the assessment is voided, they will have the opportunity to undertake a re-sit or re-take for that component.

Re-sits can be arranged immediately whilst re-takes require the apprentice to go back into a period of learning. Re-sits and re-takes can be for individual components or all components of the apprenticeship and will incur additional fees as stated in NAS' price list. Apprentices should have a supportive action plan to prepare for the re-sit or a re-take. The apprentice's employer will need to decide that either a re-sit or re-take is an appropriate course of action.

When undertaking a re-sit or re-take, the whole assessment component will need to be reattempted in full, regardless of any individual assessment criteria that were passed on any prior attempt. The EPA Results Statement will contain feedback on areas for development that will be useful for the apprentice.

Any assessment method re-sit or re-take must be taken within the maximum EPA period, otherwise, the entire EPA must be taken again. The exception to this is where circumstances apply that may be suitable for Reasonable Adjustment.

Re-sits and re-takes are not offered to apprentices wishing to improve their overall grade.

Where any assessment method must 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.

Appeals

Appeals must be submitted to NAS within 10 working days of the issue of the result to the training provider and must follow the process outlined within the NAS Appeals Policy. Appropriate grounds for appeal are outlined within the policy that can be found on ACE 360.

Quality assurance

Internal – NAS have in place quality assurance procedures adhering to best practice and regulatory requirements. This includes minimum occupational competence requirements for IEPAs and standardisation training to ensure consistency across assessments.

External – External quality assurance will be undertaken by Ofqual.



Contact information

enquiries@notebook-epa.co.uk

Appendix A – Key Duties and Tasks

Install copper cables, which are widely used to inter-connect communicating devices e.g., computers, scanners and printers to servers within office buildings, industrial buildings, hospitals, data centres, and fibre optic cables, which are widely used for connecting between floors within buildings, buildings to buildings and cities to cities, as well as providing the highest speed broadband to homes.

Interpret detailed project plans to construct and fix network equipment cabinets, prepare cable pathways, and install cable support and containment systems.

Install network equipment in cabinets, in accordance with manufacturer's specifications including routers, switches and WAN equipment.

Undertake performance-based testing and provision of certification to the customer. During the lifespan of the network, carry out maintenance where faults have occurred.

Work in potentially hazardous areas such as building sites, highways and railways, and exercise responsibility for the safety of themselves as well as anybody in the local area who could be affected by their actions.

Exercise responsibility for the care and maintenance of a wide range of specialist tools, ensuring that equipment is serviceable and in calibration (where appropriate), at all times.

Use workforce management systems for a range of workflow activities as well as personal time and attendance tracking.

Typical job titles include Network Cable Installer; Structured Cabling Installer; Telecoms Cable Installer.

Appendix B – Published Knowledge, Skills and Understanding

Knowledge (Understands):

K1. Design specifications and documentation including floor plans, patch lists, bills of materials, rack face layout plans etc. Has an appreciation of literacy and numeracy skills required in order to select and quantify tools and equipment required for tasks, calculate time frames for work activities and plan work schedules

K2. The principles associated with the transmission of digital information over copper cable networks and the impact poor-quality workmanship has on the communication link. Has a fundamental knowledge of Ohms Law and can recognise the changes in the electrical characteristics of copper cable caused through handling and installation irregularities

K3. The principles associated with the transmission of digital information over fibre cable networks and the impact poor-quality workmanship has on the communication link. Understands the principles of light propagation and has a fundamental knowledge of attenuation within the fibre channel. Recognises where losses can occur through poor handling and installation techniques

K4. The key components of a structured cabling infrastructure and the relationship between campus, building and floor distributors, with relevance to the cable installation plan. Understands the basic elements of IT network architecture, including the range of cable types and networking equipment including routers and switches

K5. The test parameters for copper and fibre cable certification in accordance with appropriate industry Standards e.g. BSEN 50346 – Information Technology-Testing of Installed Cables, the routine for test equipment service and calibration

K6. Own responsibilities under the Health and Safety at Work Act 1974, in particular the need to take care of their own health and safety in the workplace whilst also being responsible for those that might be affected by his/her actions

K7. The types of health and safety risk that could be incurred whilst carrying out cable installation tasks, who might be affected by the risk, and what actions can be taken to mitigate the risk

K8. The requirements to comply with National and International Standards e.g. British Standards Institute BSEN 50173-Series, and the importance of following manufacturers' best-practice guidelines

K9. The criteria against which the network components will be inspected and the consequence of failing to meet the required quality Standards as described above

K10. The customer's organisation, structure and the roles of personnel involved in the project, who they need to communicate with and for what reasons

K11. Asbestos Containing Materials (ACMs) and is conversant with the actions to be taken if ACMs are identified whilst installation work is being carried out

K12. The status and scope of the Electricity at Work Act and how work carried out during network cable installation tasks are governed by supporting Standards i.e. BS7671

K13. The legislative requirements under the Working at Height regulations, including personal competence and inspection regimes, with particular relevance to the need for PASMA training and certification

K14. The concept of the 'internet of things' and the effects of emerging technologies on media selection, installation practices and additional testing requirements

K15. The structural components of equipment racks/cabinets and how to assemble them to meet the requirements on the infrastructure design

K16. The requirement for the segregation of data cables from electrical cables in accordance with BSEN 50174. Can also identify media supporting other data services e.g. telephone, security, alarms and AV systems and the precautions to be taken to prevent interference or damage to the systems

K17. The need to maintain accurate documentation and the depth of information required for successful completion and handover to the customer

K18. The fundamental principles involved in the maintenance of cyber security, in particular workplace processes implemented by the organisation for the protection of data

K19. Workforce management systems and the workflow functionality

K20. The fundamental requirements of the New Roads and Streetworks Act and associated codes of practice. Knows when legislation applies and the levels of authorisation required to perform works

Skills (Is able to):

S1. Install copper cabling components for Local Area Networking (LAN). Carry out maintenance tasks on copper cable networks. Can identify, locate and repair common faults

S2. Install fibre optic cabling components for Local Area Networking (LAN) and Wide Area Network (WAN) infrastructure. Can identify, locate and repair common faults

- S3. Carry out testing on copper cabling in accordance with equipment manufacturer's procedures, and compliant to industry Standards, interpret results and rectify failures
- S4. Carry out testing of fibre optic cabling using an optical loss test set (Tier 1), an optical time domain reflectometer (Tier 2) and fibre inspection tool in accordance with equipment manufacturer's procedures, and compliant to industry Standards
- S5. Analyse copper and fibre test results and provides certification to the customer
- S6. Prepare, constructs and installs telecommunications equipment cabinets, either pre-built or from flat-pack. Arrange and install fixtures and fittings appropriate for the intended use. Correctly selects network equipment components for installation into cabinets, differentiating between switches and routers
- S7. Work at height in a safe manner and is competent in the use of Mobile Equipment Work Platforms (MEWPs) and can assemble, dismantle, use and inspect prefabricated low-level access towers
- S8. Reduce the danger of working in confined spaces by implementing appropriate health and safety procedures, using and maintaining personal protective equipment
- S9. Carry out network cable installation within the public highway to the Standards required by the New Roads and Street Works Act 1991
- S10. Analyse plans, make decisions about equipment types and quantity, and accurately predict time frames
- S11. Assess the requirements for cable containment by type and size to build a pathway suitable for routing data cables. Install containment systems in a safe manner, using the correct tools and methods for cutting, shaping and mounting tray, basket trunking and conduit
- S12. Install end-point equipment i.e. CCTV camera, Wireless Access Point, Access Control etc using appropriate fixings and media
- S13. Interpret the customer statement of requirements to determine the correct quality of components to be used in the cable network
- S14. Use literacy and numeracy skills to quantify equipment requirements and timelines for tasks to be carried out
- S15. Communicate effectively with key stakeholders in the customer's organisation including the customer, the Construction Design and Management (CDM) co-ordinator, the project manager and the Information Technology (IT) security officer
- S16. Work diligently to maintain cyber security by applying processes and procedures aimed at protecting data confidentiality

Behaviours

- B1. Highly self-motivated and driven when carrying out work alone
- B2. Assumes responsibility for the accuracy and quality of own work
- B3. Team focused and makes an effective contribution
- B4. Disciplined, applies effective time management and meets deadlines
- B5. Applies initiative to overcome any obstacles encountered in the workplace.
- B6. Anticipates security issues and demonstrates a commitment to safeguarding data integrity
- B7. Focused and thorough, working to consistently high Standards

Appendix C – 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 • prepare a portfolio in line with the requirements of the EPA
Employer	<ul style="list-style-type: none"> • identify when the apprentice is ready to pass the Gateway and undertake their EPA • make any company policies / procedures linked to the EPA available to the independent assessor • support the apprentice in the development of their portfolio by: <ul style="list-style-type: none"> ○ Providing sufficient time for the apprentice to prepare a portfolio ○ Providing work-based opportunities for the apprentice to gather evidence ○ Ensuring content of portfolio is the apprentice's own work
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 EPA • provide training and CPD to the independent assessors they employ to undertake the EPA • Create learner specifications detailing the EPA, process, content etc. • ensure there is 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's IQA section organise and conduct moderation of independent assessors' marking in accordance with this plan • have, and operate, an appeals process • conform to the requirements of the nominated EQA provider • create supporting documents for each assessment method
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 • attend the required number of EPAOs standardisation and training events per year (as defined in the IQA section and as specified by the EPAO)
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 • play no part in the EPA itself

Appendix D – Mapping of KSBs

KSB code	KSB statement	Methods mapped against
Knowledge		
K1	Design specifications and documentation including floorplans, patch lists, bills of materials, rack face layout plans etc. Has an appreciation of literacy and numeracy skills required in order to select and quantify tools and equipment required for tasks, calculate timeframes for work activities and plan work schedules	Practical Demonstration and Questions
K2	The principles associated with the transmission of digital information over copper cable networks and the impact poor quality workmanship has on the communication link. Has a fundamental knowledge of Ohms Law and can recognise the changes in the electrical characteristics of copper cable caused through handling and installation irregularities	Professional Discussion
K3	The principles associated with the transmission of digital information over fibre cable networks and the impact poor quality workmanship has on the communication link. Understands the principles of light propagation and has a fundamental knowledge of attenuation within the fibre channel. Recognises where losses can occur through poor handling and installation techniques	Professional Discussion
K4	The key components of a structured cabling infrastructure and the relationship between campus, building and floor distributors, with relevance to the cable installation plan. Understands the basic elements of IT network architecture, including the range of cable types and networking equipment including routers and switches	Practical Demonstration and Questions
K5	The test parameters for copper and fibre cable certification in accordance with appropriate industry standards e.g. BSEN 50346 – Information Technology-Testing of Installed Cables, the routine for test equipment service and calibration	Practical Demonstration and Questions

K6	Own responsibilities under the Health and Safety at Work Act 1974, in particular the need to take care of their own health and safety in the workplace whilst also being responsible for those that might be affected by his/her actions	Practical Demonstration and Questions
K7	The types of health and safety risk that could be incurred whilst carrying out cable installation tasks, who might be affected by the risk, and what actions can be taken to mitigate the risk	Professional Discussion
K8	The requirements to comply with National and International standards e.g. British Standards Institute BSEN 50173- Series, and the importance of following manufacturers' best practice guidelines	Professional Discussion
K9	The criteria against which the network components will be inspected and the consequence of failing to meet the required quality standards as described above	Professional Discussion
K10	The customer's organisation, structure and the roles of personnel involved in the project, who they need to communicate with and for what reasons	Professional Discussion
K11	Asbestos Containing Materials (ACMs) and is conversant with the actions to be taken if ACMs are identified whilst installation work is being carried out	Professional Discussion
K12	The status and scope of the Electricity at Work Act and how work carried out during network cable installation tasks are governed by supporting standards i.e. BS7671	Professional Discussion
K13	The legislative requirements under the Working at Height regulations, including personal competence and inspection regimes, with particular relevance to the need for PASMA training and certification	Professional Discussion
K14	The concept of the 'internet of things' and the effects of emerging technologies on media selection, installation practices and additional testing requirements	Professional Discussion
K15	The structural components of equipment racks/cabinets and how to assemble them to meet the requirements on the infrastructure design	Practical Demonstration and Questions
K16	The requirement for the segregation of data cables from electrical cables in	Professional Discussion

	accordance with BSEN 50174. Can also identify media supporting other data services e.g. telephone, security, alarms and AV systems and the precautions to be taken to prevent interference or damage to the systems	
K17	The need to maintain accurate documentation and the depth of information required for successful completion and handover to the customer	Professional Discussion
K18	The fundamental principles involved in the maintenance of cyber security, in particular workplace processes implemented by the organisation for the protection of data	Professional Discussion
K19	Workforce management systems and the workflow functionality	Professional Discussion
K20	The fundamental requirements of the New Roads and Street Works Act and associated codes of practice. Knows when legislation applies and the levels of authorisation required to perform works	Professional Discussion
Skills		
S1	Install copper cabling components for Local Area Networking (LAN). Carry out maintenance tasks on copper cable networks. Can identify, locate and repair common faults	Practical Demonstration and Questions
S2	Install fibre optic cabling components for Local Area Networking (LAN) and Wide Area Network (WAN) infrastructure. Can identify, locate and repair common faults	Practical Demonstration and Questions
S3	Carry out testing on copper cabling in accordance with equipment manufacturer's procedures, and compliant to industry standards, interpret results and rectify failures	Practical Demonstration and Questions
S4	Carry out testing of fibre optic cabling using an optical loss test set (Tier 1), an optical time domain reflectometer (Tier 2) and fibre inspection tool in accordance with equipment manufacturer's procedures, and compliant to industry standards	Practical Demonstration and Questions
S5	Analyse copper and fibre test results and provides certification to the customer	Practical Demonstration and Questions
S6	Prepare, constructs and installs telecommunications equipment cabinets,	Practical Demonstration and Questions

	either pre-built or from flat-pack. Arrange and install fixtures and fittings appropriate for the intended use. Correctly selects network equipment components for installation into cabinets, differentiating between switches and routers	
S7	Work at height in a safe manner and is competent in the use of Mobile Equipment Work Platforms (MEWPs) and can assemble, dismantle, use and inspect prefabricated low-level access towers	Practical Demonstration and Questions
S8	Reduce the danger of working in confined spaces by implementing appropriate health and safety procedures, using and maintaining personal protective equipment	Practical Demonstration and Questions
S9	Carry out network cable installation within the public highway to the standards required by the New Roads and Street Works Act 1991	Practical Demonstration and Questions
S10	Analyse plans, make decisions about equipment types and quantity, and accurately predict timeframes	Practical Demonstration and Questions
S11	Assess the requirements for cable containment by type and size to build a pathway suitable for routing data cables. Install containment systems in a safe manner, using the correct tools and methods for cutting, shaping and mounting tray, basket trunking and conduit	Practical Demonstration and Questions
S12	Install end-point equipment i.e. CCTV camera, Wireless Access Point, Access Control etc using appropriate fixings and media	Practical Demonstration and Questions
S13	Interpret the customer statement of requirements to determine the correct quality of components to be used in the cable network	Practical Demonstration and Questions
S14	Use literacy and numeracy skills to quantify equipment requirements and timelines for tasks to be carried out	Practical Demonstration and Questions
S15	Communicate effectively with key stakeholders in the customer's organisation including the customer, the Construction Design and Management (CDM) co-ordinator, the project manager and the Information Technology (IT) security officer	Practical Demonstration and Questions



S16	Work diligently to maintain cyber security by applying processes and procedures aimed at protecting data confidentiality	Practical Demonstration and Questions
Behaviours		
B1	Highly self-motivated and driven when carrying out work alone	Practical Demonstration and Questions
B2	Assumes responsibility for the accuracy and quality of own work	Practical Demonstration and Questions
B3	Team focused and makes an effective contribution	Professional Discussion
B4	Disciplined, applies effective time management and meets deadlines	Practical Demonstration and Questions
B5	Applies initiative to overcome any obstacles encountered in the workplace	Professional Discussion
B6	Anticipates security issues and demonstrates a commitment to safeguarding data integrity	Professional Discussion
B7	Focused and thorough, working to consistently high standards	Practical Demonstration and Questions