Highfield Level 2 Foundation Apprenticeship for FA0001 Building Service Engineering

Assessment Specification

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Assessment Specification

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Versions:

FA0001 / v1.0

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How to use this Assessment Specification

Welcome to the Highfield Assessment Specification for the Building Service Engineering foundation apprenticeship standard.

Highfield is an independent awarding organisation that has been approved to assess and quality assure the Level 2 Building Service Engineering foundation apprenticeship standard.

The assessment specification is designed to outline all you need to know about the assessments for this foundation apprenticeship standard and will also provide an overview of the delivery requirements.

Highfield also offers the Highfield Level 2 Building Service Engineering Foundation Apprenti-kit, a comprehensive learning resource, designed to be used on-programme.

For more information, please go to the Highfield Products website. Please note that the use of this learning resource is not a prerequisite for apprentices undertaking the Building Service Engineering foundation apprenticeship.

Introduction

Standard overview

Building Service Engineer (BSE) relates to low carbon heating, refrigeration, air conditioning and heat pump engineering and plumbing. Building service engineering work is found in domestic, industrial and commercial buildings, for example, office blocks, factories, schools and hospitals.

Building service engineering makes buildings work. It is a specialist part of engineering within the construction sector. Service and maintenance engineers play a key role in planning and completing a range of maintenance work. They monitor and manage the operation of plant and equipment through building and energy management systems.

The broad purpose is to plan and complete a variety of maintenance activities involving industrial and commercial building service engineering systems. Daily duties will vary depending on the setting. The apprentice will interact with team members and site managers.

Off-the-job training

This foundation apprenticeship requires a minimum 187 hours off-the-job learning. Upon successful completion, the apprentice will be competent in the knowledge, skills and behaviours outlined in this standard. Someone who completes some or all of this content will be part-way through a journey to a more specialist occupation. Taking another apprenticeship after this one is one way of progressing. More information about the main occupations involved can be found via the Skills England website.

Entry requirements

The apprentice must normally be age 16 to 21 at the start of their apprenticeship. Exceptions to this are set out in the Department for Education Apprenticeship Funding Rules.

English and maths qualifications

Apprentices must follow the English and maths formal qualification requirements as set out in the Department for Education Apprenticeship funding rules.

Mandatory qualification

CSCS will issue an Industry Placement card to apprentices upon their application for the Foundation Apprenticeship, subject to all relevant CSCS published requirements being met.

Mapping to occupational standards

Coverage of each knowledge and skill statement must include each and every occupation it is mapped to, unless expressly stated otherwise. For instance, if skill S1 is mapped to occupation 1 and occupation 2, then the range of coverage must include elements of both 1 and 2 so the apprentice benefits from a broad experience. Competence is to the level described by this foundation apprenticeship's knowledge and skills and not the often higher level of the mapped occupations. Coverage will be a blend of on and off-the-job learning. More information can be found within the knowledge and skills coverage document on the Skills England website.

Assessment roadmap

There is no stipulated order of assessment methods. Apprentices may be assessed at appropriate points (or milestones) throughout their foundation apprenticeship. This will be agreed between the apprentice, provider and/or employer.

If the knowledge and skills mapped to AO1 are required to access the workplace, this assessment should happen early in the programme.

Highfield's approach to assessing this standard is:

- Knowledge Test (AO1 Knowledge statements)
- Question and Answer (AO1 Skill statements)
- Practical Assessment - Portfolio of Evidence (PoE) (AO2/AO3)

In order to take the assessments, the apprentice must be registered with Highfield.

If you have any questions regarding these assessment components, please contact your Highfield customer engagement team.

Assessor and internal quality assurance (IQA) guidance

Assessors

Assessors for this apprenticeship **must** meet the following:

- have knowledge of the subject. Examples to demonstrate subject knowledge include, but are not limited to:
    - a current CV detailing sector experience
    - an up-to-date record of continuous professional development relevant to the sector
    - holding a qualification at the same level or above as the apprenticeship being assessed
- possess or be working towards a recognised assessor qualification. Examples include, but are not limited to:
    - Level 3 Certificate in Assessing Vocational Achievement
    - A1 Assess Candidate Performance Using a Range of Methods and A2 Assessing Candidates' Performance through Observation
    - D32 Assess Learner Performance and D33 Assess Learner Using Different Sources of Evidence

IQA

Internal quality assurers for this apprenticeship **must** meet the following:

- have knowledge of the subject. Examples to demonstrate subject knowledge include, but are not limited to:
    - a current CV detailing sector experience
    - an up-to-date record of continuous professional development relevant to the sector
    - holding a qualification at the same level or above as the apprenticeship being assessed
- possess or be working towards a recognised internal quality assurance qualification. For example:
    - Level 4 Award in the Internal Quality Assurance of Assessment Processes and Practice (RQF)
    - Level 4 Certificate in Leading the Internal Quality Assurance of Assessment Processes and Practice (RQF)
    - D34 or V1 Verifier Awards

It is **recommended** that IQAs hold an assessing qualification.

Continuing professional development (CPD)

It is recommended that staff assessing and quality assuring this apprenticeship are supported to maintain up-to-date sector knowledge, including best practices and relevant legislative changes. CPD records can provide clear evidence of this practice.

Countersigning

While it is a minimum requirement for centres to have the appropriately qualified workforce in place, it is understood that centres may have new staff who are working towards those requirements. During this period, centres are required to have a robust countersigning strategy in place that supports and validates unqualified assessment and quality assurance decisions until the point where they meet the requirements as detailed above.

Use of artificial intelligence (AI)

Where AI is used as part of the apprentice's day-to-day work and forms part of a project report, presentation or artefact, it should be referenced as such within the work.

Where AI has been used as part of a portfolio, it should be fully referenced within it.

AI must not be used to produce the report or portfolio.

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Gateway to completion

Gateway to completion requirements

After apprentices have undertaken their assessment, employers and providers will need to complete the gateway to completion confirming the following:

- minimum duration has been met in line with the assessment plan.
- employability skills and behaviours have been suitably demonstrated.
  The employer is responsible for verifying that each employability skills and behaviour statement has been suitably demonstrated by the apprentice over the course of the programme. EB6 does not need to be confirmed by the employer but should form a key element of the apprentice's off-the-job training package.

The **gateway to completion** must be completed through the Highfield Assessment Hub.

If you require any support completing this section, please contact your customer engagement team at Highfield Assessment.

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The Building Service Engineering foundation apprenticeship standard

Below are the assessment outcomes from the assessment plan. Learning and assessment will be based upon the knowledge and skills statements and the associated assessment outcomes are used to assess and grade the apprentice within each assessment method.

(*) Knowledge and skills statements which offer opportunities to develop functional skills English and maths are identified with an asterisk.

AO1 - Health, safety, regulatory and environmental responsibilities	
Knowledge Test, Question and Answer	
Assessment outcome **Demonstrates understanding of and compliance with health, safety and regulatory requirements, including the understanding of appropriate sustainability practices, and waste disposal.**	
Knowledge	**Amplification**
K1 Employee responsibilities under **health, safety and welfare regulations** relevant to the role. *	**Health, safety and welfare regulations** • Health and Safety at Work etc. Act **-** sets out general duties for employers and employees to ensure health, safety and welfare at work. • Control of Substances Hazardous to Health (COSHH) Regulations **-** manages exposure, handling and storage of hazardous substances. • Provision and Use of Work Equipment Regulations (PUWER) **-** ensures tools and equipment are operated safely, using training and manufacturer's instructions. • Personal Protective Equipment (PPE) at Work Regulations **-** wearing and maintaining items when required. • Manual Handling Operations Regulations **-** using correct lifting and carrying techniques when moving materials or equipment to

	reduce the risk of injury. Employees would need to ensure they are meeting the 5 P's (plan, position, pick, proceed and place). • Work at Height Regulations - governs all aspects of working from height, specifically the safe use of scaffolds and ladders to prevent injury by a fall from height. This includes access equipment, such as, hop ups, access platforms and working around trenches. • Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) **-** reporting accidents, incidents, dangerous occurrences and near misses promptly in line with workplace procedures. • Management of Health and Safety at Work Regulations **-** following risk assessments, method statements and safe systems of work provided by supervisors or employers. • Workplace (Health, Safety and Welfare) Regulations **-** covers standards for workplace conditions, such as ventilation, temperature and welfare facilities. • Permits to work - a formal written document, which employees must follow the instructions, risk mitigations and safety precautions. • Emergency procedures - following processes for emergencies, such as fire drills and first aid.
K2 Sustainability principles and practices relevant to the role, including **waste disposal** and the **impact of BSE occupations on the environment**. *	**Sustainability principles and practices** • Methods of working that reduce the negative environmental impact, such as: ○ energy efficiency - switching off unused tools, plant and lighting ○ resource management - cutting pipework and cabling to size to reduce off-cuts

	○ recycling and reuse - separating materials, such as metal, cardboard and plastics ○ pollution prevention - controlling dust, noise and emissions ○ water efficiency - conserving water, repairing leaks and fitting water-saving systems ○ sustainable procurement - using responsibly sourced or energy-efficient products ○ carbon reduction - assisting with low-carbon technologies, such as heat pumps ○ environmental awareness - following site environmental procedures ○ life cycle impact - choosing durable finishes reduces replacement waste **Waste disposal** • Separating waste correctly, such as into general, hazardous and recyclable • Following site signage and instructions for waste • Ensuring hazardous waste is disposed of appropriately, following workplace policies • Never disposing of waste in unauthorised areas, such as watercourses • Recycling and reusing materials where possible **Impact of BSE occupations on the environment** • Energy use from heating, cooling, ventilation and lighting systems contributing to carbon emission

	• Water wastage from leaks, inefficient fittings or poor maintenance • Noise pollution from plant, tools and equipment affecting local communities • Air pollution from dust, fumes and emissions during installation or maintenance work • Waste materials, such as metals, plastics, packaging and insulation contributing to landfill if not recycled • Hazardous substances, such as adhesives, oils, sealants or refrigerants posing risks to the environment if not disposed of correctly
K3 Types, use and storage of **personal protective equipment (PPE)**.	**Personal protective equipment (PPE)** • Protective gloves • Safety helmets • Safety footwear with reinforced toe caps • High-visibility jackets or vests • Safety glasses • Face shields • Ear defenders/ear plugs • Respiratory protective equipment, for example, dust masks and respirators • Safety harnesses and lanyard for working at height • Flame-resistant clothing • Knee pads • Certain types of personal protection equipment (PPE) have an expiration date, as materials degrade over time the equipment can lose its protective capabilities

	• Specific types of personal protection equipment (PPE) are required to be issue by a qualified person, such as respiratory equipment or face masks
K5 Industry standards and regulations relevant to the role including fire safety and Building Safety Act and how they interact. *	**Industry standards and regulations** • Fire Safety Act - requires fire risk assessments to cover building structures, external walls and doors, making fire safety systems, such as alarms, emergency lighting and smoke control, which are critical for work. • Fire Safety Order - requires fire risk assessments and measures to reduce risk of fire in workplaces and buildings. • Building Safety Act **-** strengthens safety standards for buildings, with specific focus on fire and structural safety. • Construction (Design and Management) Regulations (CDM) - governs health, safety and welfare in construction projects, including roles and responsibilities. • Provision and Use of Work Equipment Regulations (PUWER) **-** ensures work equipment is suitable, safe to use and maintained • British Standards (BS EN) - provides technical guidance and benchmarks for installation, maintenance and testing of systems and equipment. • Building Regulations (Approved Documents) - sets minimum standards for design and construction, including ventilation, drainage, energy efficiency and fire safety. Examples are: o sanitation, hot water safety and water efficiency: Approved Document G o access to and use of buildings: Approved Document M o electrical safety: Approved Document P

	○ drainage and waste disposal: Approved Document H • Industry Codes of Practice - offers practical guidance on meeting legal duties, such as safe installation of electrical and mechanical systems. • Control of Asbestos Regulations - primary legislation for managing asbestos, which requires employers to completely assess risks, implement control measures and provide training.
K15 Awareness of **equity, inclusion and diversity regulations**. *	**Equity, inclusion and diversity** • Ensuring fair treatment and opportunity for all, in line with the Equality Act, which protects people from discrimination based on: ○ age ○ disability ○ gender reassignment ○ marriage and civil partnership ○ pregnancy and maternity ○ race ○ religion ○ belief ○ sexual orientation ○ sex (biologically male or female) • Embracing differences in culture and ethnicity • Ensuring no one is discriminated against • Challenging inappropriate or discriminatory behaviour • Supporting colleagues and customers with different needs **Regulations**

	• Human Rights Act - protects basic rights and freedoms, such as respect for privacy and freedom from discrimination • Part-time Workers (Prevention of Less Favourable Treatment) Regulations - ensures part-time employees are treated no less favourably than full-time workers • Fixed-term Employees (Prevention of Less Favourable Treatment) Regulations - ensures employees on fixed-term contracts are not disadvantaged compared to permanent staff • Reasonable adjustments under the Equality Act - requires employers to make changes in the workplace to support employees with disabilities

K16 Mental and physical health considerations in self and others when working in construction and the importance of **reporting issues**.	**Mental and physical health considerations**
	• Mental health considerations refer to a person's emotional and psychological wellbeing. Examples within the industry could include:
	  ○ recognising signs of stress, anxiety or fatigue in themselves and colleagues
	  ○ recognising the impact of long working hours or shift work on mental health
	  ○ encouraging open conversations about mental wellbeing and reducing stigma
	• Physical health considerations refer to the condition of the body and its ability to complete tasks. Examples within the industry could include:
	  ○ maintaining good hydration, nutrition and rest to support physical wellbeing
	  ○ being aware of musculoskeletal issues from repetitive tasks, heavy lifting or awkward postures

	○ preventing hearing damage by using ear protection in noisy environments ○ monitoring for respiratory issues from dust, fumes or poor ventilation ○ taking breaks to reduce strain from physically demanding or high-risk tasks ○ reporting concerns, such as unsafe working conditions, illness or injury **Reporting issues** • Reporting problems to supervisors, managers, mental health first-aiders or support services • Informing the relevant individual to ensure that issues are addressed, and accidents and long-term health issues are prevented
Skills	**Amplification**
S1 Comply with **employee responsibilities** under health, safety and welfare regulations. *	**Employee responsibilities** • Following health and safety policies and procedures • Using personal protective equipment (PPE) correctly and report any issues • Using tools, equipment and machinery in line with training and guidance • Protecting the welfare of themselves and others • Reporting hazards, accidents and unsafe conditions to supervisors • Following rules for working at height • Following manual handling techniques • Storing and handling hazardous substances correctly

	• Keeping work areas tidy to avoid accidents • Operating equipment and tools safely, in line with training • Co-operating with employers and attending safety training sessions • Attending regular safety training and demonstrating active participation in safety induction, task briefings and toolbox talks
S2 Use and store appropriate PPE.	**Use and store appropriate PPE** • Wearing safety helmets, boots, gloves, goggles and high-visibility clothing when required • Checking PPE for damage or defects before each use • Using PPE correctly in line with training and manufacturer's instructions • Selecting the right type of PPE for the specific task, such as respiratory protection when working in dusty areas • Keeping PPE clean and in good working order to maintain effectiveness • Storing PPE in designated clean, dry areas and away from contamination or damage • Returning damaged or defective PPE for replacement rather than continuing to use it • Ensuring shared PPE is sanitised between uses to protect health and hygiene • If PPE is required, employers must ensure their workers have sufficient information, instruction and training on the use of these • Workers or employees have a duty to use the PPE in accordance with their training and ensure it is returned to the storage area provided by their employer

S10 Dispose of waste safely and sustainably. Segregate resources for reuse and recycling.	**Dispose of waste safely and sustainably** • Placing general, recyclable and hazardous waste into the correct labelled containers • Separating metals, plastics, cardboard and timber for recycling • Returning unused or surplus materials to stores for reuse on future tasks • Disposing of hazardous substances, such as adhesives, oils or solvents, in line with site procedures and regulations • Using designated skips or collection points rather than leaving waste scattered on site to minimise the risks of slips, trips and falls • Following site environmental management plans for safe waste handling and disposal • Preventing harm to people and the environment by never pouring liquids into drains unless authorised

AO2 - General building service functions and systems	
Portfolio of Evidence	
Assessment outcome **Demonstrates knowledge and skills in the role and function of Building Service Engineering (BSE)-related systems, including roles and responsibilities, ways of working, and how to carry out simple tasks and checks.**	
Knowledge	**Amplification**
K4 Role of building service systems in making the building work for the user including air quality, heating and cooling, acoustics, fire prevention and control.	**Role of building service systems in making the building work** • Ventilation systems improving indoor air quality by supplying fresh air and removing stale or polluted air • Heating systems providing a comfortable environment for building users

	• Cooling systems maintaining safe and comfortable temperatures in warm conditions • Acoustic treatments reducing noise transfer between spaces, helping concentration and comfort • Fire detection systems warning users of smoke or heat to support safe evacuation • Fire suppression systems, such as sprinklers, reducing the spread of fire within the building • Lighting systems ensuring visibility and safety for users in different areas of the building • Water supply systems delivering clean water for drinking, washing and sanitation • Drainage systems removing wastewater and rainwater safely and preventing flooding • Control systems, such as thermostats and timers, helping users manage comfort levels and energy use efficiently
K6 Roles and responsibilities of an employee and other relevant stakeholders and personnel in the workplace.	**Roles and responsibilities of an employee and other relevant stakeholders** • Employee - following instructions efficiently, completing tasks safely, using PPE correctly, reporting hazards and working co-operatively with others • Supervisor or line manager - allocating work, monitoring performance, ensuring health and safety procedures are followed and providing feedback • Health and safety officer - carrying out risk assessments, advising on safe systems of work and investigating incidents or near misses

	• Site manager - co-ordinating site operations, ensuring compliance with regulations and liaising with contractors/clients • Client or building owner - defining project requirements, ensuring legal duties are met and approving work progress • Building control officers - checking that construction work meets building regulations and industry standards • Fire marshal or warden - supporting fire prevention measures, organising evacuations and checking escape routes are clear • Colleagues/team members - supporting one another, sharing information and maintaining safe and efficient working practices
K9 Basic functions of electrical and electronic control of BSE systems including electrical safety and when to engage a competent person.	**Basic functions of electrical and electronic control of BSE systems** • Power supply system's providing electricity to building services equipment • Circuit breakers and fuses protecting systems from overloads and faults • Switches controlling the operation of lighting, heating, ventilation and cooling systems • Timers and sensors automatically switching equipment on and off to save energy • Thermostats regulating heating and cooling to maintain comfortable temperatures • Control panels allowing users to monitor and adjust system performance • Fire alarm systems detecting smoke or heat and activating alerts • Emergency lighting systems providing illumination during power failures

	• Access control systems regulating entry to buildings or restricted areas • Communication with other building systems through integrated building management systems (BMS)
K11 Techniques to carry out simple tasks associated with BSE occupations.	**Techniques to carry out simple tasks** • Measuring and marking materials accurately before cutting or fixing • Cutting and preparing pipework or cabling using appropriate hand tools • Assembling and fixing brackets, supports or containment for services • Mixing and applying basic jointing or sealing compounds • Stripping and terminating electrical cables under supervision • Connecting simple pipe fittings, such as elbows, tees or couplings • Using drills and fixings to mount equipment safely • Insulating pipework or ductwork to improve efficiency • Checking levels and alignment during installation work • Following step-by-step instructions or method statements to complete allocated tasks
K13 Techniques to **carry out simple BSE system functioning checks**. *	**Carry out simple BSE system functioning checks** • Visually inspecting equipment, pipework and cabling for signs of damage or wear • Checking that switches, controls and isolators operate correctly • Testing lighting circuits by switching lights on and off • Confirming water flow through taps, valves or pipework is unobstructed

	• Monitoring heating and cooling systems to ensure thermostats respond correctly • Checking ventilation by confirming airflow from grilles or diffusers • Observing pressure or temperature gauges to confirm readings are within expected ranges • Verifying fire alarm call points and sounders activate during routine tests (under supervision) • Checking emergency lighting illuminates correctly during test procedures • Recording results from basic checks and reporting any faults to a supervisor or competent person
K14 The **importance of customer service** to their organisation.	**Importance of customer service** • Customer service can impact the way the public see the organisation and treat it • It includes handling complaints professionally, responding to questions and providing a positive experience • Good customer service can increase sales, trust and loyalty • Bad customer service can damage the reputation and reduce sales
Skills	**Amplification**

S3 Follow **written and verbal work instructions**. *	**Written and verbal work instructions**
	• Written work instructions refer to reading, understanding and following written instructions, such as risk assessment and method statements. Examples include:
	  ○ reading a job sheet before starting a task
	  ○ following manufacturer instructions when using tools and equipment

	○ using diagrams, drawings or schedules to complete tasks accurately • Verbal work instructions refer to listening carefully, confirming understanding and following verbal instructions. Examples include: ○ supervisor briefings or toolbox talks ○ asking for clarification if instructions are unclear or incomplete ○ adjusting work as directed by supervisors or team leaders during a job
S4 Apply techniques to **carry out simple tasks associated with BSE occupations**.	**Carry out simple tasks associated with BSE occupations** • Routine tasks that support the preparation and application of BSE tasks. Examples include: ○ preparing an area ready for work, for example, tidying the area, checking suitability of walls, property protection and understanding task instructions ○ measuring and marking materials accurately before cutting or fixing ○ cutting and preparing pipework or cabling using hand tools safely ○ assembling and securing brackets, supports or containment for services ○ stripping and terminating electrical cables under supervision ○ connecting simple fittings, such as elbows, tees or couplings in pipework ○ mixing and applying basic sealing or jointing compounds correctly ○ drilling and fixing to mount small items of equipment safely ○ insulating pipework or ductwork to improve system efficiency

	○ checking alignment and levels during basic installation work ○ following step-by-step instructions or method statements to complete allocated tasks
S6 Apply techniques to **carry out simple BSE system checks**.	**Carry out simple BSE system checks** • Visually inspecting pipework, ductwork and cabling for damage or wear • Switching lighting circuits on and off to confirm operation • Checking water flow and temperatures from taps or valves to ensure there are no blockages • Testing that thermostats respond to temperature changes • Confirming airflow from grilles or diffusers in ventilation systems • Reading pressure or temperature gauges to check system performance • Observing pumps or fans for unusual noise or vibration • Testing fire alarm call points and sounders during supervised checks • Checking emergency lighting illuminates correctly during test procedures • Recording results and reporting faults or irregularities to a supervisor

AO3 - Materials, tools and equipment	
Portfolio of Evidence	
Assessment outcome **Demonstrates knowledge and skills in the use of materials, relevant tools and equipment, and preparation and maintenance of the work area.**	
Knowledge	**Amplification**

K7 Use and characteristics of **materials and components** associated with the BSE occupations.	**Materials and components**
	• Copper pipes
	• Plastic pipes
	  ○ PVC and PEX
	• Steel conduit
	• Electrical cables
	• Ductwork
	• Insulation materials
	• Valves and fittings
	• Switches and sockets
	• Fire-resistant materials
	• Fasteners and fixings:
	  ○ screws, anchors and brackets

K8 Types, use and storage techniques of **tools and equipment associated with BSE occupations**.	**Tools and equipment associated with BSE occupations** • Tape measure used for accurate measuring of materials and needs to be stored rolled up in a toolbox or belt • Pipe cutter used to cut copper or plastic pipe cleanly, which must be cleaned and stored dry to prevent damage • Spanners and wrenches used for tightening or loosening fittings and are stored in tool rolls or racks to stay organised

	• Screwdrivers used for fixing electrical components and fasteners and are stored in tool bags or racks to avoid loss or damage • Pliers and cutters used for gripping, bending or cutting wires and are stored clean and dry to prevent rusting • Power drill used for drilling holes or fixing components, need to be PAT tested, the batteries need to be charged and the tools stored in a protective case • Multimeter used for checking electrical voltage, current and resistance and needs to be kept in a protective case to avoid damage • Ladders used for safe access to work at height, which must be appropriately labelled, the correct class of ladder be used for the task, stored in the designated areas and checked for damage before use • PPE equipment, such as safety goggles or ear defenders, are stored in clean, dry conditions ready for use • Portable lighting used for working in poorly lit areas and stored safely with cables coiled to prevent damage
K10 Work area preparation and maintenance techniques.	**Work area preparation and maintenance techniques** • Prepare the work area: ○ checking the area for any existing damage and reporting it ○ clearing the area of unnecessary materials and obstructions before starting work ○ setting up safety barriers, cones or signage to protect others in the area ○ checking that lighting, ventilation and access are suitable for safe working

	○ organising tools and equipment needed for the task ○ covering nearby surfaces, furniture or equipment to protect them from dust or damage • Maintain the work area: ○ keeping walkways and access routes clear to avoid slips, trips and falls ○ controlling dust and debris to avoid buildup ○ returning tools to their designated area when no longer needed ○ clearing waste and mess throughout
K12 Methods of **protecting materials and work** in progress from damage, weather and theft.	**Protecting materials and work** • Storing materials in secure, locked containers or designated storage areas to prevent theft • Using covers, tarpaulins or sheeting to protect materials and unfinished work from rain, dust or debris • Keeping materials raised off the ground on pallets to prevent water damage • Stacking and storing materials safely to avoid crushing or accidental damage • Labelling and organising materials clearly to reduce handling errors • Using temporary barriers or fencing to restrict unauthorised access to work areas • Applying protective coatings or sealants to materials exposed to weather during installation • Securing tools and equipment after use in locked storage facilities • Scheduling deliveries to reduce the amount of materials stored on site at any one time

	• Inspecting stored materials regularly to check for damage or deterioration
Skills	**Amplification**
S5 Protect work in progress and materials, for example, from damage, weather or theft.	**Protect work in progress and materials** • Storing materials in secure, locked areas to reduce risk of theft • Covering unfinished work with tarpaulins or sheeting to protect against rain or dust • Keeping materials off the ground on pallets to prevent damp or water damage • Using barriers or fencing to prevent unauthorised access to work areas • Organising and stacking materials safely to avoid accidental damage • Applying protective coatings or wraps to exposed pipework or equipment • Returning tools and equipment to secure storage after use • Scheduling deliveries to minimise excess materials left on site • Checking stored materials regularly for signs of deterioration or damage • Labelling and separating materials clearly to avoid misuse or incorrect handling
S7 Use **materials and components associated with BSE occupations**.	**Materials and components associated with BSE occupations** • Measuring and cutting copper pipe accurately for heating or water systems • Connecting plastic pipework for hot, cold, heating, drainage and rainwater • Installing electrical cables safely within conduit or containment

	• Fitting brackets, clips and supports to secure pipework or cabling • Assembling valves and fittings to control water flow in pipe systems • Fixing ductwork sections together for ventilation systems • Applying insulation to pipework or ducting to improve efficiency • Installing switches, sockets or light fittings as directed • Using fasteners, such as screws, anchors and bolts to secure components in place • Checking materials and components before use to ensure they are undamaged and suitable
S8 Use and store tools and equipment associated with the occupations.	**Use and store tools and equipment** • Using a tape measure for accurate marking and returning it to a toolbox after use • Cutting copper or plastic pipe with a pipe cutter and checking it for damage • Using screwdrivers for fixing components and storing them in tool rolls or racks • Operating a cordless drill safely and keeping it in its protective case when not in use • Stripping wires with pliers or cutters and storing them dry to prevent rust • Testing electrical circuits with a multimeter and placing it in a padded case for protection • Using ladders safely for access at height and storing them in designated secure areas • Handling portable lighting for poorly lit work areas and coiling cables properly after use

	• Cleaning tools after use to prevent contamination or damage • Returning defective or damaged tools to supervisors instead of storing them for reuse
S9 Prepare and maintain the work area.	**Prepare and maintain the work area** • Prepare the work area: ○ checking the area for any existing damage and reporting it ○ clearing the area of unnecessary materials and obstructions before starting work ○ setting up safety barriers, cones or signage to protect others in the area ○ checking that lighting, ventilation and access are suitable for safe working ○ organising tools and equipment needed for the task ○ covering nearby surfaces, furniture or equipment to protect them from dust or damage • Maintain the work area: ○ keeping walkways and access routes clear to avoid slips, trips and falls ○ controlling dust and debris to avoid buildup ○ returning tools to their designated area when no longer needed ○ clearing waste and mess throughout

Employability skills and behaviours
Behaviours
EB1 Communicate and share information using verbal, non-verbal, written and digital methods.
EB2 Act in a professional manner including good time keeping and conduct.
EB3 Apply new learning and feedback to everyday practice.
EB4 Complete own work tasks and ask for help when needed.
EB5 Work with colleagues to contribute to team outcomes.
EB6 Seek ways to manage own financial, health and wellbeing needs using available resources.
EB7 Overcome challenges and adapt to changes at work.
EB8 Work in line with health, safety and environmental requirements.
Behaviours must be confirmed by the employer and confirmed on the gateway to completion section in the Highfield Assessment Hub. EB6 does not need to be confirmed by the employer but should form a key element of the apprentice's off-the-job training package.

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Assessing AO1 - knowledge test and question and answer

Knowledge test

The test consists of **20 questions** including multiple-choice questions and will last **60 minutes**. The **pass** mark is 12 out of 20.

The multiple-choice test may be delivered online or paper-based and should be taken in controlled conditions in line with Highfield's invigilation policy. The test is closed-book which means that the apprentice cannot refer to reference books or materials. The test must be marked by Highfield.

The knowledge test will cover knowledge statements within AO1 as stipulated in this specification.

In each paper, questions will cover each of the knowledge statements, however, not every aspect of every area will be covered in every test.

Question and answer

There will be a minimum of **three questions** asked by an assessor in **30 minutes**.

The question and answer will assess the skill statements within AO1 as stipulated in this specification.

The question and answer may be delivered online or in person and should be taken in controlled conditions in line with Highfield's invigilation policy.

The questions can be asked by the provider and the answers recorded and submitted to Highfield. Alternatively, the questions can be asked by a Highfield Assessor. In both cases the responses will be marked by Highfield. Further guidance can be found in the Highfield Support Pack.

Before the assessment

Employers/providers should:

- brief the apprentice on the areas that will be assessed by the knowledge test and question and answer.
- in readiness for the assessment, set the apprentice a mock knowledge test and question and answer. A mock knowledge test and questions are available to download from the Highfield Assessment website. The mock tests are available as paper-based tests and also on the mock e-assessment system.

Grading the knowledge test and question and answer assessment

Apprentices will be marked against statements included in the tables on the following pages.

- To achieve a **pass**, apprentices must achieve all of the knowledge and skills statements
- **Unsuccessful** apprentices will have not achieved all of the knowledge and skills statements

Knowledge test criteria
K1 Employee responsibilities under health, safety and welfare regulations relevant to the role. *
K2 Sustainability principles and practices relevant to the role, including waste disposal and the impact of BSE occupations on the environment. *
K3 Types, use and storage of personal protective equipment (PPE).
K5 Industry standards and regulations relevant to the role including fire safety and Building Safety Act and how they interact. *
K15 Awareness of equity, inclusion and diversity regulations. *
K16 Mental and physical health considerations in self and others when working in construction and the importance of reporting issues.

Question and answer criteria
S1 Comply with employee responsibilities under health, safety and welfare regulations. *
S2 Use and store appropriate PPE.
S10 Dispose of waste safely and sustainably. Segregate resources for reuse and recycling.

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Assessing AO2 and AO3 - portfolio of evidence

Portfolio of evidence

The apprentice must compile a portfolio of evidence that is mapped against the knowledge and skills (KSs) assessed by a portfolio of evidence.

Evidence may be used to demonstrate more than one knowledge and skill as a qualitative approach is suggested as opposed to a quantitative approach.

Evidence sources for the portfolio may include:

- work-based observation
- expert witness testimonies
- annotated photographs
- video clips
- evidence of ongoing professional development
- reflective accounts, countersigned by a manager

This is not a definitive list and other evidence sources are possible.

The portfolio can include reflective accounts and employer contributions should focus on direct observation of performance (for example, witness statements) rather than opinions.

Expert witness testimonies can be completed where observations cannot be conducted due to:

- logistical and operational barriers
- confidentiality and privacy restrictions
- health and safety concerns

Expert witness testimonies must be completed by an individual with:

- direct knowledge of the subject area
- clear understanding of the assessment criteria

The portfolio must be compiled alongside a Portfolio Matrix. This can be downloaded from our website. The Portfolio Matrix must be fully completed including a declaration by the apprentice to confirm that the portfolio is valid and attributable to the apprentice.

Before the assessment

Employers/providers should:

- ensure the apprentice knows which areas will be assessed (outlined on the following pages)
- ensure the apprentice is aware of evidence permitted to form part of the portfolio of evidence

Grading the portfolio of evidence

Apprentices will be marked against the statements included in the tables on the following pages. The portfolio of evidence can be marked by Highfield or the provider.

- To achieve a **pass**, apprentices must achieve all of the knowledge and skills statements
- **Unsuccessful** apprentices will not have achieved all of the knowledge and skills statements

Portfolio of evidence
To pass, the following must be evidenced.
K4 Role of building service systems in making the building work for the user including air quality, heating and cooling, acoustics, fire prevention and control.
K6 Roles and responsibilities of an employee and other relevant stakeholders and personnel in the workplace.
K7 Use and characteristics of materials and components associated with the BSE occupations.
K8 Types, use and storage techniques of tools and equipment associated with BSE occupations.
K9 Basic functions of electrical and electronic control of BSE systems including electrical safety and when to engage a competent person.
K10 Work area preparation and maintenance techniques.
K11 Techniques to carry out simple tasks associated with BSE occupations.
K12 Methods of protecting materials and work in progress from damage, weather and theft.
K13 Techniques to carry out simple BSE system functioning checks. *
K14 The importance of customer service to their organisation.
S3 Follow written and verbal work instructions. *
S4 Apply techniques to carry out simple tasks associated with BSE occupations.
S5 Protect work in progress and materials, for example, from damage, weather or theft.
S6 Apply techniques to carry out simple BSE system checks.
S7 Use materials and components associated with BSE occupations.
S8 Use and store tools and equipment associated with the occupations.
S9 Prepare and maintain the work area.

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Grading

The apprenticeship is graded pass or fail.

To achieve a pass, the apprentice is required to pass each of the assessment methods.

The overall grade for the apprentice is determined using the matrix below.

Knowledge test	Question and answer	Portfolio of evidence	Overall grade awarded
Fail any of the assessment methods			**Fail**
Pass	Pass	Pass	**Pass**

Reattempt information

If a reattempt is required for Highfield marked methods, please call the Highfield scheduling team to arrange the reattempt.

If you have any questions, please contact the Highfield customer engagement team or refer to the Highfield Support Pack.

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