apprenticeship
FRAMEWORK

Heating and Ventilating (England)

IMPORTANT NOTIFICATION FOR ALL APPRENTICESHIP STARTS FROM 22 AUGUST 2017

Modifications to SASE came into effect on 22 August 2017. Accordingly, SASE publication DFE-00167-2017 applies **both** to new Apprenticeship starts from 22 August 2017 **and** all Apprenticeships commenced before and not completed by 22 August 2017.

For more details of the changes please read the following preface page to the framework document.

Latest framework version?

Please use this link to see if this is the latest issued version of this framework:

afo.sscalliance.org/frameworkslibrary/index.cfm?id=FR04009

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SummitSkills

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Apprenticeships

CHANGES TO THE ENGLISH AND MATHS REGULAR MINIMUM REQUIREMENTS FOR APPRENTICESHIP STARTS FROM 22 AUGUST 2017 AND APPRENTICESHIPS REMAINING INCOMPLETE ON 22 AUGUST 2017.

Modifications to SASE came into effect on 22 August 2017. Accordingly, SASE publication DFE-00167-2017 applies both to new Apprenticeship starts from 22 August 2017 and all Apprenticeships commenced before and not completed by 22 August 2017.

The modifications allow for an exemption to the English and Maths regular minimum requirements for people with Special Educational Needs, Learning Difficulties or Disabilities. This means that adjusting the minimum requirements to Entry Level 3 in English and Maths can be considered by the provider, on an individual and case-by-case basis, where **all of the conditions** of the updated SASE section 18 (Intermediate level) or section 37 (Advanced level) for have been satisfied and can be evidenced.

Full details relating to the exceptions eligibility criteria are contained in:

Sections 15-23 of SASE for Intermediate Level Apprenticeships
Sections 34-42 of SASE for Advanced Level Apprenticeships

When applying this exemption, providers must **STILL** consider how to enable the Apprentice to access further literacy and numeracy development – including Level 1 and Level 2 courses – as part of their overall training provision.

The modifications to SASE have also extended the list of qualifications that meet the minimum English requirements to allow for a British Sign Language (BSL) qualification, at the appropriate level, to be accepted as an alternative to a qualification in English, where **BSL is the primary language of the Apprentice**.

Full details relating to BSL acceptance are contained in:

Section 5(f) of SASE for Intermediate Level Apprenticeships
Section 28(f) of SASE for Advanced Level Apprenticeships

Furthermore, the SASE modifications have further extended the list of qualifications that meet the minimum English and Maths requirements to allow for the acceptance of a range of UK-wide qualifications, as an alternative to qualifications gained in England.

Full details relating to the list of acceptable qualifications are contained in:

Sections 5(g-j) and 6(f-i) of SASE for Intermediate Level Apprenticeships
Sections 28(g-j) and 29(f-i) of SASE for Advanced Level Apprenticeships

The modifications include reference to the new numerical grades in the reformed GCSE system and the **minimum** grade requirements. A grade 4 (new grading) will be considered equivalent to a grade C (old grading). A grade 2 (new grading) will be considered equivalent to a Grade E (old grading).

Full details relating to the numerically graded GCSEs are contained in:

Sections 5 and 6 of SASE for Intermediate Level Apprenticeships
Sections 28 and 29 of SASE for Advanced Level Apprenticeships

Please note that some frameworks may have English and Maths grade/level requirements that are **above** the SASE **regular** minimum requirements. The exceptions relating to the use of British Sign Language or Entry Level 3 qualifications, detailed above, **do not apply** to **industry-specific** minimum entry requirements. Please check specific framework documents to ascertain where this is the case and/or check directly with the Issuing Authority responsible for the framework.

The updated version of SASE, and guidance documents, can be accessed here:
https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/630068/Specification_of_Apprenticeship_Standards_for_England_.pdf

Heating and Ventilating (England)

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Framework summary

Heating and Ventilating

Intermediate Level Apprenticeships in Heating and Ventilating (H&V) Systems

This framework includes information on Personal Learning and Thinking Skills

Pathways for this framework at level 2 include:

Pathway 1: Installing Industrial and Commercial H&V - Ductwork Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation

This pathway also contains information on:

- Employee rights and responsibilities
- Functional skills

Pathway 2: Installing Industrial and Commercial H&V Pipework Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation

This pathway also contains information on:

- Employee rights and responsibilities
- Functional skills

Pathway 3: Servicing and Maintaining H&V Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment

This pathway also contains information on:

- Employee rights and responsibilities
- Functional skills

Heating and Ventilating

Advanced Level Apprenticeships in Heating and Ventilating (H&V) Systems

This framework includes information on Personal Learning and Thinking Skills

Pathways for this framework at level 3 include:

Pathway 1: Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 3 NVQ Diploma in Heating and Ventilating - Ductwork Installation

This pathway also contains information on:

- Employee rights and responsibilities
- Functional skills

Pathway 2: Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 3 NVQ Diploma in Heating and Ventilating - Industrial and Commercial

This pathway also contains information on:

- Employee rights and responsibilities
- Functional skills

Pathway 3: Servicing and Maintaining H&V Systems

Competence qualifications available to this pathway:

N/A

Knowledge qualifications available to this pathway:

N/A

Combined qualifications available to this pathway:

B1 - Level 3 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Systems

This pathway also contains information on:

- Employee rights and responsibilities
- Functional skills

Framework information

Information on the Issuing Authority for this framework:

SummitSkills

The Apprenticeship sector for occupations in electrical and electronic servicing, plumbing, heating and building services (summarised as electrotechnical; plumbing, heating and ventilating; refrigeration and air conditioning).

Issue number: 4	**This framework includes:**
Framework ID: FR04009	Level 2 Level 3
Date this framework is to be reviewed by: 01/04/2020	This framework is for use in: **England**

Short description

Apprenticeships for occupations in the Heating and Ventilating (H&V) Industry are designed to meet the competence requirements of the industry.

This Apprenticeship Framework document contains six occupation framework pathways at two different levels:

Intermediate Level -

- Installing Industrial and Commercial H&V Ductwork Systems
- Installing Industrial and Commercial H&V Pipework Systems
- Servicing and Maintaining H&V Systems

Whichever occupation framework pathway is chosen at Intermediate Level, it provides an opportunity for individuals to gain the skills and knowledge necessary for a career in an established industry and for employers and apprentices to benefit from the associated structured learning and assessment programme.

Successful completion of the Intermediate Level frameworks reflect the ability to select and

use relevant knowledge, ideas, skills and procedures to complete well defined tasks and address straightforward problems. They include taking responsibility for completing tasks and procedures, and exercising autonomy and judgement subject to overall direction or guidance. The apprentice also has the competencies to progress to an associated Advanced Level Framework.

In order to demonstrate the industry recognised level of competence reflected by these Intermediate frameworks it is expected the minimum duration for their completion will be no less than 24 months.

Job roles roles covered are:

- Heating and Ventilating Ductwork Installation Operative
- Heating and Ventilating Pipework Installation Operative
- Heating and Ventilating Service and Maintenance Operative

Advanced Level -

- Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems
- Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems
- Servicing and Maintaining H&V Systems

Whichever occupation framework pathway is chosen at Advanced Level, it will provide an opportunity to further develop the skills, knowledge and competence to the level required by job roles such as:

- Heating and Ventilating Ductwork Installer
- Heating and Ventilating Engineer/ Heating and Ventilating Welder
- Heating and Ventilating Service and Maintenance Engineer

Progression into this framework is considered by employers to normally be for those who have already completed the relevant Intermediate Level Apprenticeship or for individuals with comparable experience and knowledge. The structured learning and assessment programme of this framework will enhance the skills and knowledge of the entrant to the benefit of employers and apprentices alike.

Successful completion of an Advanced Level framework reflects the ability to identify and use relevant understanding, methods and skills to complete tasks and address problems that, while well defined, have a measure of complexity. They include taking responsibility for initiating and completing tasks and procedures as well as exercising autonomy and judgement within parameters. They also reflect awareness of different perspectives or approaches within an area of study or work.

In order to demonstrate the industry recognised level of competence reflected by these Advanced frameworks it is expected the minimum duration for their completion will be no less

than 24 months.

Contact information

Proposer of this framework

N/A

Developer of this framework

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Revising a framework

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Why this framework is being revised

EAL have withdrawn 3 of their qualifications due to lack of take up after direction by Ofqual

Summary of changes made to this framework

3 qualifications as detailed below have been withdrawn by the Awarding Organisation

Qualifications removed

EAL Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation 501/1622/8

EAL Level 3 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation 600/1163/4

EAL Level 3 NVQ Diploma in Heating and Ventilating Ductwork Installation 600/1024/1

Qualifications added

N/A

Qualifications that have been extended

N/A

Purpose of this framework

Summary of the purpose of the framework

The occupation frameworks are designed to provide individuals and those seeking progression in their career with the opportunity to develop the competencies needed to carry out job roles and responsibilities associated with the installation, maintenance and commissioning of heating and ventilating (H&V) systems, including relevant:

- Environmental technologies
- Technological requirements and changes
- Statutory and non-statutory regulations and requirements

The following job roles will be covered in the Intermediate Level occupation pathways:

- H&V Ductwork Installation Operative
- H&V Pipework Installation Operative
- H&V Service and Maintenance Operative

The following job roles will be covered in the Advanced Level occupation pathways:

- H&V Ductwork Installer
- H&V Engineer/ H&V Welder
- H&V Service and Maintenance Engineer

Aims and objectives of this framework (England)

The aim of the occupation frameworks is to ensure that the Intermediate and Advanced Level Apprenticeship programmes deliver:

- The skills and knowledge required by the industry to achieve competence
- Job-related skills that will be used in the working environment
- Transferable skills
- Career progression

Employers have endorsed this programme as it delivers qualified competent employees and improves productivity and retention.

Further information can be found at www.summitskills.org.uk

Entry conditions for this framework

Although there are generally no nationally laid-down minimum entry or previous experience requirements to undertake the Intermediate and Advanced Level Apprenticeships in the Heating and Ventilating Industry, the following selection criteria may be used as guidance.

The programme is likely to be suitable for individuals who:

- Have an aptitude for technical subjects and/or are practically minded
- Have an interest in technology
- Can demonstrate an ability to solve practical problems

A career in the Heating and Ventilating Industry will not only reward an apprentice's potential, but also offer opportunities to enhance their technical capability. The industry always needs individuals of appropriate ability, and in return offers a varied and rewarding career in a challenging working environment.

Other selection criteria may include:

- Motivation to succeed
- Willingness to learn and apply that learning in the workplace/job role
- Enthusiasm and attitude to work
- Ability to demonstrate that they have the potential to achieve the qualifications which are part of the Intermediate and/or Advanced Level Apprenticeship programme
- Ability to communicate effectively with a range of people
- Being numerate and literate
- Good colour vision to recognise colour coded wires and components
- Ability to work at heights or in confined spaces
- Willingness to work outside
- Willingness to work unsociable hours
- Willingness to undergo a Criminal Records Bureau (CRB) check when required

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete either the Intermediate or Advanced Level Apprenticeships can be found in the individual occupation pathways.

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer.

Level 2

Title for this framework at level 2

Intermediate Level Apprenticeships in Heating and Ventilating (H&V) Systems

Pathways for this framework at level 2

Pathway 1:	Installing Industrial and Commercial H&V - Ductwork Systems
Pathway 2:	Installing Industrial and Commercial H&V Pipework Systems
Pathway 3:	Servicing and Maintaining H&V Systems

Level 2, Pathway 1: Installing Industrial and Commercial H&V - Ductwork Systems

Description of this pathway

Installing Industrial and Commercial Heating and Ventilating (H&V) Ductwork Systems in various properties - 79 credits in total

Entry requirements for this pathway in addition to the framework entry requirements

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete the Intermediate Level Apprenticeship in Installing Industrial and Commercial Heating and Ventilating (H&V) Ductwork Systems are:

- GCSE grade A-D in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 1 GNVQs in relevant vocational/technical subjects
- 14-19 Diploma in either Construction and the Built Environment, or Engineering
- A Level 1 'Access to Building Services Engineering' qualification

Job title(s)	Job role(s)
H&V Ductwork Installation Operative	Works under minimal supervision to complete the installation, assembly, fitting, testing and de-commissioning of ductwork systems

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B1a	501/1696/4	EAL	64	490	N/A
B1b	600/0144/6	City & Guilds	64	490	N/A

Relationship between competence and knowledge qualifications

This framework requires the completion of either of the combined qualification B1a or B1b identified in the combined qualifications section B1 above.

Qualification Title - Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation which has:

Knowledge Units

- Understand how to communicate with others within building services engineering J/602/2482 ***Unit Credit Value 3***
- Understand how to apply environmental protection measures within BSE D/602/2486 ***Unit Credit Value 4***
- Understand industrial and commercial rectangular ductwork installation techniques J/602/2711 ***Unit Credit Value 9***
- Understand industrial and commercial circular and flat oval ductwork installation techniques L/602/2712 ***Unit Credit Value 9***
- Understand industrial and commercial air handling unit installation techniques R/602/2713 ***Unit Credit Value 4***
- Understand industrial and commercial plastic ductwork installation techniques D/602/2715 ***Unit Credit Value 4***
- Understand industrial and commercial fire-rated ductwork installation techniques H/602/2716 ***Unit Credit Value 4***
- Understand industrial and commercial local exhaust ventilation system installation techniques M/602/2718 ***Unit Credit Value 4***
- Understand how to apply scientific principles within MES J/602/2496 ***Unit Credit Value 7***

Knowledge Element = 48 credits

- Understand and carry out safe working practices in building services engineering J/602/2479 ***Unit Credit Value 10***
- Apply safe working practices in building services engineering working environment T/602/2493 ***Unit Credit Value 2***
- Install industrial and commercial H&V ductwork M/602/2721 ***Unit Credit Value 4***

Competence Element = 16 credits

Total Qualification = 64 credits

For further qualification details refer to: register.ofqual.gov.uk/Qualificati on and search by relevant qualification or unit number.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

Apprentices must complete or have completed one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT

Apprentices must complete or have completed one of the ICT transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have one of these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	1	5
GCSE qualification in ICT (with enhanced functional content)	D	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	1	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	E	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

N/A

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Work or work experience

- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-D in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Key Skills or Functional Skills
- Level 1 GNVQs in relevant vocational/technical subjects
- A 14-19 Diploma in either Construction and the Built Environment or Engineering
- A Level 1 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of this Intermediate Level Apprenticeship in Installing Industrial and Commerical H&V Ductwork Systems, an apprentice will have the skills, knowledge and qualifications to:

- Register on an appropriate Certification Scheme
- Progress to learning and assessment programmes that lead to relevant Level 3 qualifications and/or Advanced Level Apprenticeship in Installing and Commissioning Industrial and Commercial H&V Ductwork Systems
- Progress in their career into job roles such as Technician, Designer Estimator, Project Manager, Site/Workshop Supervisor/Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further career guidance can be found at: www.summitskills.org.uk/careers

Employee rights and responsibilities

The Employee Rights and Responsibilities (ERR) elements identified below will be achieved through an induction programme, in combination with the Level 2 Diploma in Heating and Ventilating (Ductwork Installation) qualification (501/1696/4 EAL or 600/0144/6 City & Guilds) into which they are integrated and signposted. The ERR elements will be evidenced by the issuing of a qualification achievement certificate plus a checklist signed by the assessor and apprentice confirming all nine ERR elements have been achieved.

This checklist must accompany the claim for an Apprenticeship Completion Certificate and can be downloaded from
www.summitskills.org.uk/Apprenticeships/Certification-and-Registration/219

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health and Safety, together with the responsibilities and duties of employers;
2. knows and understands the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme;
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities;
7. knows where and how to get information and advice on their industry, occupation, training and career;
8. can describe and work within their organisation's principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

Level 2, Pathway 2: Installing Industrial and Commercial H&V Pipework Systems

Description of this pathway

Installing Industrial and Commercial H&V Pipework Systems - 96 credits in total

Entry requirements for this pathway in addition to the framework entry requirements

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete the Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Pipework Systems are:

- GCSE grade A-D in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 1 GNVQs in relevant vocational/technical subjects
- 14-19 Diploma in either Construction and the Built Environment, or Engineering
- A Level 1 'Access to Building Services Engineering' qualification

Job title(s)	Job role(s)
Heating and Ventilating Installer	Works under minimal supervision to complete the installation, testing and de-commissioning of industrial and commercial heating and ventilating pipework systems, including hot water, cold water, fire protection, heating (including gas pipework carcassing) and compressed air systems

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	600/1806/9	City & Guilds	81	696	N/A

Relationship between competence and knowledge qualifications

This framework pathway requires the completion of either of the combined qualification B1a or B1b identified in the combined qualifications section B1 above.

Qualification Title - Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation which has:

Knowledge Units

- Understand how to communicate with others within building services engineering J/602/2482 ***Unit Credit Value 3***
- Understand how to apply environmental protection measures within BSE D/602/2486 ***Unit Credit Value 4***
- Understand industrial and commercial cold water system installation techniques Y/602/2728 ***Unit Credit Value 3***
- Understand industrial and commercial hot water system installation techniques H/602/2733 ***Unit Credit Value 3***
- Understand industrial and commercial heating system installation techniques M/602/2735 ***Unit Credit Value 3***
- Understand industrial and commercial chilled water system installation techniques F/602/2738 ***Unit Credit Value 3***
- Understand how to apply scientific principles within MES J/602/2496 ***Unit Credit Value 7***

Knowledge Element = 26 credits

Competence Units

- Understand and carry out safe working practices in building services engineering J/602/2479 ***Unit Credit Value 10***
- Apply safe working practices in building services engineering working environments

T/602/2493 ***Unit Credit Value 2***

- Install industrial and commercial H&V systems Y/602/2776 ***Unit Credit Value 3***
- Understand and carry out site preparation and pipework fabrication techniques for industrial and commercial systems A/602/2768 ***Unit Credit Value 40***

Competence Element = 55 credits

Total Qualification = 81 credits

For further qualification details refer to: register.ofqual.gov.uk/Qualification and search by the relevant qualification or unit number.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

Apprentices must complete or have completed one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT

Apprentices must complete or have completed one of the ICT transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have one of these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	1	5
GCSE qualification in ICT (with enhanced functional content)	D	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	1	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	E	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

N/A

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Work or work experience

- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-D in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Key Skills or Functional Skills
- Level 1 GNVQs in relevant vocational/technical subjects
- A 14-19 Diploma in either Construction and the Built Environment or Engineering
- A Level 1 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of the Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Pipework Systems, an apprentice will have the skills, knowledge and qualifications to:

- Register on an appropriate Certification Scheme
- Progress to learning and assessment programmes that lead to relevant Level 3 qualifications and/or Advanced Level Apprenticeship in Installing and Commissioning Industrial and Commercial H&V Pipework Systems
- Progress in their career with further training into job roles such as Technician, Designer Estimator, Project Manager, Site/Workshop Supervisor/Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further career guidance can be found at: www.summitskills.org.uk/careers/

Employee rights and responsibilities

The Employee Rights and Responsibilities (ERR) elements identified below will be achieved through an induction programme, in combination with the Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation qualification (either EAL (501/1622/8) or (City & Guilds 600/1806/9) into which they are integrated and signposted. The ERR elements will be evidenced by the issuing of a qualification achievement certificate plus a completed checklist which must be signed by the assessor and apprentice, confirming all nine ERR elements have been achieved.

This checklist must accompany the claim for an Apprenticeship Completion Certificate and can be downloaded from
www.summitskills.org.uk/Apprenticeships/Certification-and-Registration/219

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health and Safety, together with the responsibilities and duties of employers.
2. knows and understands the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities.
7. knows where and how to get information and advice on their industry, occupation, training and career;
8. can describe and work within their organisations principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

Level 2, Pathway 3: Servicing and Maintaining H&V Systems

Description of this pathway

Servicing and Maintaining H&V Systems - 101 credits in total

Entry requirements for this pathway in addition to the framework entry requirements

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete the Intermediate Level Apprenticeship in Servicing and Maintaining H&V Systems are:

- GCSE grade A-D in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 1 GNVQs in relevant vocational/technical subjects
- A 14-19 Diploma in either Construction and the Built Environment, or Engineering
- A Level 1 'Access to Building Services Engineering' qualification

Job title(s)	Job role(s)
H&V Service and Maintenance Operative	Completes, under minimal supervision, the planned service and maintenance of heating and ventilating components, pipework and applicances

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment

No.	Ref no.	Awarding organisation	Credit value	Guided learning hours	UCAS points value
B1a	600/0143/4	City & Guilds	86	733	N/A
B1b	600/1759/4	EAL	86	733	N/A

Relationship between competence and knowledge qualifications

This framework requires the completion of either of the combined qualification B1a or B1b identified in the combined qualifications section B1 above.

Qualification Title - Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment which has the following:

Knowledge Units

- Understand how to communicate with others within building services engineering J/602/2482 ***Unit Credit Value 3***
- Understand how to apply environmental protection measures within BSE D/602/2486 ***Unit Credit Value 4***
- Understand how to apply scientific principles within MES J/602/2496 ***Unit Credit Value 7***
- Understand industrial and commercial air system maintenance techniques R/602/4929 ***Unit Credit Value 5***
- Understand industrial and commercial hot and cold water system maintenance techniques J/602/4927 ***Unit Credit Value 6***
- Understand industrial and commercial hot water heating system maintenance techniques L/602/4928 ***Unit Credit Value 5***

Knowledge Element = 30 credits

Competence Units

- Apply safe working practices in building services engineering working environment T/602/2493 ***Unit Credit Value 2***
- Service and maintain industrial and commercial H&V systems J/602/4930 ***Unit Credit***

Value 4

- Understand and carry out safe working practices in building services engineering J/602/2479 ***Unit Credit Value 10***
- Understand and carry out site preparation and pipework fabrication techniques for industrial and commercial systems A/602/2768 ***Unit Credit Value 40***

Competence Element = 56 credits

Total Qualification = 86 credits

For further qualification details refer to: register.ofqual.gov.uk/Qualification and search by the relevant qualification or unit number.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

Apprentices must complete or have completed one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

ICT

Apprentices must complete or have completed one of the ICT transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have one of these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

ICT	Minimum level or grade	Credit value
Functional Skills qualification in Information and Communications Technology (ICT)	1	5
GCSE qualification in ICT (with enhanced functional content)	D	5
Key Skills qualification in ICT achieved either before September 2013 as part of the Apprenticeship, or...*	1	5
GCSE qualification in ICT*	C	N/A
A' Level or AS Level qualification in ICT*	E	N/A
GCSE or O'Level qualification in ICT**	A	N/A
A' Level or AS Level qualification in ICT**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

N/A

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Work or work experience

- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-D in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Key Skills or Functional Skills
- Level 1 GNVQs in relevant vocational/technical subjects
- A 14-19 Diploma in either Construction and the Built Environment or Engineering
- A Level 1 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of the Intermediate Level Apprenticeship in Servicing and Maintaining H&V Systems, an apprentice will have the skills, knowledge and qualifications to:

- Register on an appropriate Certification Scheme
- Progress to learning and assessment programmes that lead to relevant Level 3 qualifications and/or Advanced Level Apprenticeship in Servicing and Maintaining H&V Systems
- Progress in their career into job roles such as Technician, Designer Estimator, Project Manager, Site/Workshop Supervisor/Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further guidance can be found at: www.summitskills.org.uk/careers/

Employee rights and responsibilities

The Employee Rights and Responsibilities (ERR) elements identified below will be achieved through an induction programme, in combination with the Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment qualification (either EAL 600/1759/4 or City & Guilds 600/0143/4) into which they are integrated and signposted. The ERR elements will be evidenced by the issuing of a qualification achievement certificate plus a completed checklist which must be signed by the assesor and apprentice confirming all nine ERR elements have been achieved.

This checklist must accompany the claim for an Apprenticeship Completion Certificate and can be downloaded from
www.summitskills.org.uk/Apprenticeships/Certification-and-Registration/219

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health & Safety, together with the responsibilities and duties of employers.
2. knows and understandand the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities
7. knows where and how to get information and advice on their industry, occupation, training and career;
8. can describe and work within their organisations principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

Level 3

Title for this framework at level 3

Advanced Level Apprenticeships in Heating and Ventilating (H&V) Systems

Pathways for this framework at level 3

Pathway 1:	Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems
Pathway 2:	Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems
Pathway 3:	Servicing and Maintaining H&V Systems

Level 3, Pathway 1: Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems

Description of this pathway

Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems - 54 credits in total

Entry requirements for this pathway in addition to the framework entry requirements

The Heating and Ventilating Industry would normally expect entry into this framework to be for those who have already completed an Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Ductwork Systems, or for individuals with experience and knowledge that is comparable with the requirements of the framework.

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete the Advanced Level Apprenticeship in Installing and Commissioning Industrial and Commercial H&V Ductwork Systems are:

- Successful completion of the Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Ductwork Systems
- GCSE grade A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 2 GNVQs in relevant vocational/technical subjects
- A 14-19 Higher Diploma in either Construction and the Built Environment, or Engineering
- A Level 2 'Access to Building Services Engineering' qualification

Job title(s)	Job role(s)
Heating and Ventilating Ductwork Installer	Completes and oversees the installation, assembly, fitting, testing, pre-commissioning and de-commissioning of ductwork systems

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 3 NVQ Diploma in Heating and Ventilating - Ductwork Installation					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B1a	600/1005/8	City & Guilds	39	272	N/A

Relationship between competence and knowledge qualifications

This framework requires the completion of either of the combined qualifications B1a or B1b identified in the combined qualifications section B1 above.

Qualification Title - Level 3 NVQ Diploma in Heating and Ventilating - Ductwork Installation which has:

Knowledge Units

- Understand how to organise resources within BSE R/602/2498 ***Unit Credit Value 3***
- Understand and apply industrial and commercial circular and flat oval ductwork installation and pre-commissioning techniques A/602/4911 ***Unit Credit Value 8***
- Understand and apply industrial and commercial air handling unit installation and pre-commissioning techniques D/602/4920 ***Unit Credit Value 4***
- Understand and apply industrial and commercial plastic ductwork installation and pre-commissioning techniques K/502/8202 ***Unit Credit Value 4***
- Understand and apply industrial and commercial fire-rated ductwork installation and pre-commissioning techniques M/502/8203 ***Unit Credit Value 4***
- Understand and apply industrial and commercial local exhaust ventilation system installation and pre-commissioning techniques R/502/8226 ***Unit Credit Value 4***

Knowledge Element = 27 credits

- Install and pre-commission industrial and commercial ductwork systems H/502/8229 ***Unit Credit Value 4***
- Understand and apply industrial and commercial rectangular ductwork installation and pre-commissioning techniques F/602/4909 ***Unit Credit Value 8***

Competence Element = 12 credits

Total Qualification = 39 credits

For further qualification details refer to: register.ofqual.gov.uk/Qualification and search by the relevant qualification or unit number.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

Apprentices must complete or have completed one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

This framework has no requirement for Level 2 ICT as the industry has determined it is not relevant for effective performance in this occupation. Applicants will be required to have completed the relevant Intermediate Level Apprenticeship which includes Level 1 ICT or have knowledge and experience at a comparable level.

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Successful completion of an Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Ductwork Systems
- Work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Key Skills or Functional Skills
- Level 2 GNVQs in relevant vocational/technical subjects
- A 14-19 Higher Diploma in either Construction and the Built Environment or Engineering
- A Level 2 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of the Advanced Level Apprenticeship in Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems, an apprentice will have the skills, knowledge and qualifications to:

- Register on a relevant industry Certification Scheme
- Progress to relevant Level 4/5 qualifications e.g. Building Services Engineering Technology & Project Management or Foundation Degree in Engineering
- Progress in their career with further training into job roles such as Technician, Designer Estimator, Project Manager, Site/Workshop Supervisor/ Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further career guidance can be found at: www.summitskills.org.uk/careers

UCAS points for this pathway: N/A

Employee rights and responsibilities

The normal entry is through the previous completion of the Intermediate Level Apprenticeship in Heating and Ventilating Ductwork Installation programme. The ERR elements are integrated and signposted, and will be automatically evidenced by issuing a qualification achievement certificate. Recognition of Prior Learning (RPL) may therefore be applied if ERR is gained in this way or from another programme.

Alternatively the ERR elements identified below must be achieved through an induction programme, in combination with the Level 3 NVQ Diploma in Heating and Ventilating - Ductwork Installation qualification (EAL 600/1024/1 or City & Guilds 600/1005/8) into which they are integrated and signposted. The ERR elements will be evidenced by the issuing of a framework achievement certificate plus a completed checklist which must be signed by the assessor and apprentice confirming all nine ERR elements have been achieved.

This checklist must accompany the claim for an Apprenticeship Completion Certificate and can be downloaded from
www.summitskills.org.uk/Apprenticeships/Certification-and-Registration/219

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health and Safety, together with the responsibilities and duties of employers.
2. knows and understands the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities
7. knows where and how to get information and advice on their industry, occupation, training and career;
8. can describe and work within their organisations principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

Level 3, Pathway 2: Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems

Description of this pathway

Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems - 72 credits in total

Entry requirements for this pathway in addition to the framework entry requirements

The Heating and Ventilating Industry would normally expect entry into this framework to be for those who have already completed an Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Pipework Systems, or for individuals with comparable experience and knowledge.

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete the Advanced Level Apprenticeship in Installing and Commissioning Industrial and Commercial H&V Pipework Systems are:

- Successful completion of the Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Pipework Systems
- GCSE grade A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 2 GNVQs in relevant vocational/technical subjects
- A 14-19 Higher Diploma in either Construction and the Built Environment, or Engineering
- A Level 2 'Access to Building Services Engineering' qualification

Job title(s)	Job role(s)
Heating and Ventilating Engineer	Completes and oversees the installation, testing, pre-commissioning and maintenance of industrial and commercial H&V systems including hot water, cold water, heating, fire protection and compressed air systems
Heating and Ventilating Welder	Completes and oversees the installation, fabrication, welding and specialist jointing of industrial and commercial H&V pipework systems

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 3 NVQ Diploma in Heating and Ventilating - Industrial and Commercial					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B1a	600/1009/5	City & Guilds	57	454	N/A

Relationship between competence and knowledge qualifications

This framework requires the completion of either of the combined qualifications B1a or B1b identified in the combined qualifications section B1 above.

Qualification Title - Level 3 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation.

This qualification has a variety of unit combinations to permit achievement. The learner must achieve 50 credits from eight units in the mandatory group plus an additional 7 credits from a group contained in one of the optional pathways P1, P2 or P3.

Mandatory Knowledge Units

- Understand how to organise resources within BSE R/602/2498 ***Unit Credit Value 3***
- Understand industrial and commercial cold water system installation and pre-commissioning techniques R/602/4851 ***Unit Credit Value 5***
- Understand industrial and commercial hot water system installation and pre-commissioning techniques Y/602/4852 ***Unit Credit Value 5***
- Understand industrial and commercial heating system installation and pre-commissioning techniques K/602/4855 ***Unit Credit Value 5***
- Understand industrial and commercial chilled water system installation and pre-commissioning techniques A/602/4858 ***Unit Credit Value 5***
- Understand the principles and requirements of industrial and commercial fuel systems F/602/4862 ***Unit Credit Value 12***

Knowlege Element of Mandatory Units = 35 credits

Mandatory Competence Units

- Understand and carry out electrical work on industrial and commercial heating and ventilating systems and components R/502/9151 ***Unit Credit Value 12***

- Install H&V industrial and commercial systems Y/602/4897 ***Unit Credit Value 3***

Competence Element of Mandatory Units = 15 credits

Optional pathway P1

Knowledge unit from P1

- Understand industrial and commercial H&V maintenance techniques H/602/4871 ***Unit Credit Value 5***

Competence unit from P1

- Maintain industrial and commercial H&V systems Y/502/8194 ***Unit Credit Value 2***

Optional pathway P2

Knowledge unit from P2

- Understand industrial and commercial oxy-acetylene pipe jointing techniques D/602/4884 ***Unit Credit Value 5***

Competence unit from P2

- Perform industrial and commercial oxy-acetylene pipe jointing techniques K/602/4905 ***Unit Credit Value 2***

Optional pathway P3

Knowledge unit from P3

- Understand industrial and commercial manual metal arc pipe jointing techniques K/602/4886 ***Unit Credit Value 5***

Competence unit from P3

- Perform industrial and commercial manual metal arc pipe jointing techniques T/602/4907 ***Unit Credit Value 2***

Total Knowledge Element = 40 credits

Total Competence Element = 17 credits

Total Qualification = 57 credits

For further qualification details refer to: register.ofqual.gov.uk/Qualificati on and search by the relevant qualification or unit number.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

Apprentices must complete or have completed one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

This framework has no requirement for Level 2 ICT as the industry has determined it is not relevant for effective performance in this occupation. Applicants will be required to have completed the relevant Intermediate Level Apprenticeship which includes Level 1 ICT or have knowledge and experience at a comparable level.

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Successful completion of an Intermediate Level Apprenticeship in Installing Industrial and Commercial H&V Pipework Systems
- Work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Key Skills or Functional Skills
- Level 2 GNVQs in relevant vocational/technical subjects
- A 14-19 Higher Diploma in either Construction and the Built Environment or Engineering
- A Level 2 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of the Advanced Level Apprenticeship in Installing and Commissioning Industrial and Commercial H&V Pipework Systems, an apprentice will have the skills, knowledge and qualifications to:

- Register on a relevant industry Certification Scheme
- Progress to relevant Level 4/5 qualifications e.g. Building Services Engineering Technology & Project Management or Foundation Degree in Engineering
- Progress in their career with further training into job roles such as Technician, Designer Estimator,
  Project Manager, Site/Workshop Supervisor/Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further career guidance can be found at: www.summitskills.org.uk/careers

UCAS points for this pathway: N/A

Employee rights and responsibilities

The normal entry is through the previous completion of the Intermediate Level Apprenticeship in Installing and Commissioning Industrial and Commercial H&V Pipework Systems. The ERR elements are integrated and signposted, and will be evidenced by the issuing of a qualification achievement certificate. Recognition of Prior Learning (RPL) may therefore be applied if ERR is gained in this way or from another programme.

Alternatively the ERR elements must be achieved through an induction programme in combination with the Level 3 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation qualification (EAL 600/1163/4 or City & Guilds 600/1009/5) into which they are integrated and signposted. The ERR elements will be evidenced by the issuing of a framework achievement certificate plus a completed checklist which must be signed by the assessor and apprentice confirming all nine ERR elements have been achieved.

This checklist must accompany the claim for an Apprenticeship Completion Certificate and can be downloaded from
www.summitskills.org.uk/Apprenticeships/Certification-and-Registration/219

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health and Safety, together with the responsibilities and duties of employers.
2. knows and understands the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities
7. knows where and how to get information and advice on their industry, occupation, training and career;
8. can describe and work within their organisations principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

Level 3, Pathway 3: Servicing and Maintaining H&V Systems

Description of this pathway

Servicing and Maintaining H&V Systems (Servicing and maintaining H&V systems, components, pipework and appliances) - 77 credits in total.

Entry requirements for this pathway in addition to the framework entry requirements

The Heating and Ventilating Industry would normally expect entry into this framework to be for those who have already completed an Intermediate Level Apprenticeship in Heating and Ventilating - Service and Maintenance, or for individuals with the experience and knowledge comparable with the requirements of that framework.

Examples of formal qualifications that can be used as an indication that an applicant has the potential to progress into and complete the Advanced Level Apprenticeship in Servicing and Maintaining H&V Systems are:

- Successful completion of the Intermediate Level Apprenticeship in Servicing and Maintaining H&V Systems
- GCSE grade A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Level 2 GNVQs in relevant vocational/ technical subjects
- A 14-19 Diploma in either Construction and the Built Environment, or Engineering
- A Level 2 'Access to Building Services Engineering' qualification

Job title(s)	Job role(s)
Heating and Ventilating Service and Maintenance Engineer	Completes and oversees the servicing and maintenance, fault-finding, repairs, rectification and modification of complex H&V systems, components, pipework and appliances

Qualifications

Competence qualifications available to this pathway

N/A

Knowledge qualifications available to this pathway

N/A

Combined qualifications available to this pathway

B1 - Level 3 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Systems					
No.	**Ref no.**	**Awarding organisation**	**Credit value**	**Guided learning hours**	**UCAS points value**
B1a	600/1008/3	City & Guilds	62	504	N/A
B1b	600/1188/9	EAL	62	504	N/A

Relationship between competence and knowledge qualifications

This framework requires the completion of either of the combined qualifications B1a or B1b identified in the combined qualifications section B1 above.

Qualification Title - Level 3 NVQ Diploma in Planned and Reactive Maintenance on H&V Systems which has:

Knowledge Units

- Understand how to organise resources within BSE R/602/2498 ***Unit Credit Value 3***
- Understand the principles and requirements of industrial and commercial fuel systems F/602/4862 ***Unit Credit Value 12***
- Understand industrial and commercial hot and cold water system maintenance and fault diagnosis techniques D/502/8231 ***Unit Credit Value 8***
- Understand industrial and commercial hot water heating system maintenance and fault diagnosis techniques F/502/8190 ***Unit Credit Value 8***
- Understand industrial and commercial ventilation system maintenance and fault diagnosis techniques J/502/8191 ***Unit Credit Value 7***
- Understand industrial and commercial air conditioning system maintenance and fault diagnosis techniques L/502/8192 **Unit Credit Value 7**

Knowledge Element = 45 credits

Competence Units

- Understand and carry out electrical work on industrial and commercial heating and ventilating systems and components R/502/9151 ***Unit Credit Value 12***
- Maintain and diagnose faults on H&V industrial and commercial systems R/502/8193 ***Unit***

Credit Value 5

Competence Element = 17 credits

Total Qualification = 62 credits

For further qualification details refer to: register.ofqual.gov.uk/Qualificati on and search by the relevant qualification or unit number.

Transferable skills (England)

Functional Skills / GCSE (with enhanced functional content) and Key Skills (England)

Apprentices must complete or have completed one of the English transferable skills qualifications and one of the Mathematical transferable skills qualifications listed below in order to successfully complete their Apprenticeship and this will carry the QCF five credit values. If they do not have these qualifications as part of their evidence an Apprenticeship certificate cannot be awarded.

English	Minimum level or grade	Credit value
Functional Skills qualification in English	2	5
GCSE qualification in English (with enhanced functional content)	C	5
Key Skills qualification in Communication achieved either before September 2013 as part of the Apprenticeship, or...*	2	5
GCSE Qualification in English*	C	N/A
A' Level or AS Level qualification in English Language*	E	N/A
A' Level or AS Level qualification in English Literature*	E	N/A
A' Level or AS Level qualification in English Language and Literature*	E	N/A
GCSE or O' Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Language**	A	N/A
A' Level or AS Level qualification in English Literature**	A	N/A
A' Level or AS Level qualification in English Language and Literature**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Mathematics	Minimum level or grade	Credit value
Functional Skills qualification in Mathematics	2	5
GCSE qualification (with enhanced functional content) in Mathematics	C	5
Key Skills qualification in Application of Number achieved either before September 2013 as part of the Apprenticeship, or... *	2	5
GCSE qualification in Mathematics*	C	N/A
A' level or AS Level qualification in Mathematics*	E	N/A
A' Level or AS Level qualification in Pure Mathematics*	E	N/A
A'Level or AS Level qualification in Further Mathematics*	E	N/A
GCSE or O'Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Mathematics**	A	N/A
A' Level or AS Level qualification in Pure Mathematics**	A	N/A
A' Level or AS Level qualification in Further Mathematics**	A	N/A

* *achieved before September 2012 and within the 5 years immediately prior to starting an Apprenticeship.*

** *achieved before September 2012, otherwise at any time prior to starting the Apprenticeship.*

Inclusion of Information and Communications Technology (ICT)

This framework has no requirement for Level 2 ICT as the industry has determined it is not relevant for effective performance in this occupation. Applicants will be required to have completed the relevant Intermediate Level Apprenticeship which includes Level 1 ICT or have knowledge and experience at a comparable level.

Progression routes into and from this pathway

Progression routes into this pathway:

Applicants may come from a range of routes including:

- Successful completion of an Intermediate Level Apprenticeship in Servicing and Maintaining H&V Systems
- Work or work experience
- Training and/or experience which could include a portfolio showing what they have done
- Academic qualification(s) such as three GCSEs grades A-C in each of the following:- a communication subject, maths and either a science or technical-based subject
- Achievement of Key Skills or Functional Skills
- Level 2 GNVQs in relevant vocational/technical subjects
- A 14-19 Higher Diploma in either Construction and the Built Environment or Engineering
- A Level 2 'Access to Building Services Engineering' qualification

No individual should be refused access to an initial assessment on the basis of educational qualifications alone. The ultimate responsibility for selection will rest with the individual employer

Progression routes out of this pathway:

On successful completion of the Advanced Level Apprenticeship in Servicing and Maintaining H&V Systems, an apprentice will have the skills, knowledge and qualifications to:

- Register on a relevant industry Certification Scheme
- Progress to relevant Level 4/5 qualifications e.g. Building Services Engineering Technology & Project Management or Foundation Degree in Engineering
- Progress in their career with further training into such job roles as Technician, Designer Estimator, Project Manager, Site/Workshop Supervisor/Manager, Chartered Engineer, Sales Engineer or Commercial Manager

Further career guidance can be found at: www.summitskills.org.uk/careers

UCAS points for this pathway: N/A

Employee rights and responsibilities

The normal entry into this framework would be through the previous completion of the Intermediate Level Apprenticeship in Heating and Ventilating - Service and Maintenance into which the Employee, Rights and Responsibilities (ERR) elements are integrated and signposted. The ERR elements will be evidenced by the issuing of a qualification achievement certificate. Recognition of Prior Learning (RPL) may therefore be applied if ERR is gained in this way or from another programme.

Alternatively the ERR elements identified below must be achieved through an enhanced induction programme in combination with the Level 3 NVQ Diploma in Planned and Reactive Maintenance on H&V Systems qualification (EAL 600/1188/9 or City & Guilds 600/1008/3) into which they are integrated and signposted. The ERR elements will be evidenced by the issuing of a qualifications achievement certificate plus a completed checklist which must be signed by the assessor and apprentice confirming all nine ERR elements have been achieved.

This checklist must accompany the claim for an Apprenticeship completion certificate and can be downloaded from
www.summitskills.org.uk/Apprenticeships/Certification-and-Registration/219

The delivery and assessment of ERR must be designed so that the apprentice:

1. knows and understands the range of employer and employee statutory rights and responsibilities under Employment Law and that employment rights can be affected by other legislation as well. This should cover the apprentice's rights and responsibilities under the Disability Discrimination Act, other relevant equalities legislation and Health and Safety, together with the responsibilities and duties of employers.
2. knows and understands the procedures and documentation in their organisation which recognise and protect their relationship with their employer. Health and Safety and Equality and Diversity training must be an integral part of the apprentice's learning programme;
3. knows and understands the range of sources of information and advice available to them on their employment rights and responsibilities. Details of Access to Work and Additional Learning Support must be included in the programme
4. understands the role played by their occupation within their organisation and industry;
5. has an informed view of the types of career pathways that are open to them;
6. knows the types of representative bodies and understands their relevance to their industry and organisation, and their main roles and responsibilities
7. knows where and how to get information and advice on their industry, occupation, training and career;
8. can describe and work within their organisations principles and codes of practice;
9. recognises and can form a view on issues of public concern that affect their organisation and industry

The remaining sections apply to all levels and pathways within this framework.

How equality and diversity will be met

The nature of the work means that the Heating and Ventilating Industry is not a traditional career choice for women, but women do qualify and work successfully in the industry and this is encouraged. We are continuing to work with the UK Resource Centre for Women in Science, Engineering and Technology and Platform 51 (formerly the YWCA) to promote the opportunities for women working within the building services engineering sector.

SummitSkills will have overall responsibility for the development and review of the framework and for monitoring equality of opportunity, primarily by the analysis of the National Apprenticeship Service data.

There should be open recruitment of apprentices who meet the selection criteria, which is available to all individuals, regardless of gender, ethnic origin, religion/belief, sexual orientation or disability.

All partners involved in the delivery of the apprenticeship and employers must be committed to a policy of equal opportunities and must have a formal equal opportunities policy and procedure in place. Employers/providers must be able to demonstrate that there are no overt or covert discriminatory practices in selection and employment. All promotional, selection and training activities must comply with relevant legislation, such as the Equality Act 2010.

Providers will monitor equality of opportunity practice and procedures within their own organisation and take positive action when necessary. It is also recommended that employers/providers conduct an exit interview if the apprentice leaves the programme before completion.

On and off the job guided learning (England)

Total GLH for each pathway

Intermediate Level Apprenticeships

Overview of Installing Industrial and Commercial H&V Ductwork Systems

Qualification Total - 490 hrs (Knowledge elements 394hrs + Competence elements 96hrs)

Functional Skills (FS) - 135 hrs (notional value of 45hrs per FS x 3, which can be offset if previously completed)

Mentoring - 92 hrs (based on 46 wks x 2hrs)

Total minimum GLH for this pathway 717

Overview of Installing Industrial and Commercial H&V Pipework Systems

Qualification Total - 696 hrs (Knowledge elements 244hrs + Competence elements 452hrs)

Functional Skills (FS) - 135 hrs (notional value of 45hrs per FS x 3, which can be offset if previously completed)

Mentoring - 92 hrs (based on 46 wks x 2hrs)

Total minimum GLH for this pathway = 923

Overview of Servicing and Maintaining H&V Systems

Qualification Total - 733 hrs (Knowledge elements 279hrs + Competence elements 454hrs)

Functional Skills - 135 hrs (notional value of 45hrs per FS x 3, which can be offset if previously completed)

Mentoring - 92 hrs (based on 46 wks x 2hrs)

Total minimum GLH for this pathway - 960 hrs

Advanced Level Apprenticeships

Overview of Installing and Pre-commissioning Industrial & Commercial H&V Ductwork Systems

Qualification Total - 272 hrs (Knowledge elements 203hrs + Competence elements 69hrs)

Functional Skills (FS)- 90 hrs (notional value of 45hrs per FS x 2, which can be offset if previously completed)

Mentoring - 184 hrs (based on 92 wks x 2hrs)

Total minimum GLH for this pathway - 546 hrs

Overview of Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems

Qualification Total - 454 hrs (Knowledge elements 344hrs + Competence elements 110hrs)

Functional Skills (FS) - 90 hrs (notional value of 45hrs per FS x 3, which can be offset if previously completed)

Mentoring - 184 hrs (based on 92 wks x 2hrs)

Total minimum GLH for this pathway is 728 hrs

Overview of Servicing and Maintaining H&V Systems

Qualification Total - 504 hrs (Knowledge elements 390hrs + Competence elements 114hrs)

Functional Skills (FS) - 90 hrs (notional value of 45hrs per FS x 3, which can be offset if previously completed)

Mentoring - 184 hrs (based on 92 wks x 2hrs)

Total minimum GLH for this framework - 778 hrs

Minimum off-the-job guided learning hours

Intermediate Level Apprenticeships

Installing Industrial and Commercial H&V Ductwork Systems - Minimum total off-the-job GLH is 533 hrs over 24 months

- Year 1 - 267 hrs
- Year 2 - 266 hrs

Installing Industrial and Commercial H&V Pipework Systems - Minimum total off-the-job GLH is 739 hrs over 24 months

- Yr 1 - 370 hrs GLH
- Yr 2 - 369 hrs GLH

Servicing and Maintaining H&V Systems - Minimum total off-the-job GLH is 776 hrs over 24

months

- Yr 1 - 388 hrs GLH
- Yr 2 - 388 hrs GLH

Advanced Level Apprenticeships

Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems - Minimum total off-the-job GLH is 362 hrs over 24 months

- Yr 1 - 181 hrs GLH
- Yr 2 - 181 hrs GLH

Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems - Minimum total off-the-job GLH is 589 hrs over 24 months

- Yr 1 - 295 hrs GLH
- Yr 2 - 294 hrs GLH

Servicing and Maintaining H&V Systems - Minimum total off-the-job GLH is 594 hrs over 24 months

- Yr 1 - 297 hrs GLH
- Yr 2 - 297 hrs GLH

How this requirement will be met

Guided Learning Hours (GLH) will be achieved through clear and specific outcomes, which contribute directly to the successful achievement of the framework, and these may include accredited and non-accredited elements of the framework.

GLH will be delivered through one or more of the following methods: individual and group teaching; e-learning; distance learning; feedback and assessment; guided study.

All GLH delivery must be completed while undertaking apprenticeship training and will take place during contracted working hours.

This will be evidenced by training provider attendance statistics and assessment reports.

Minimum on-the-job guided learning hours

Intermediate Level Apprenticeships

Installing Industrial and Commercial H&V Ductwork Systems - Minimum total on-the-job GLH is

184 hrs over 24 months

- Yr 1 - 92 hrs GLH
- Yr 2 - 92 hrs GLH

Installing Industrial and Commercial H&V Pipework Systems - Minimum total on-the-job GLH is 184 hrs over 24 months

- Yr 1 - 92 hrs GLH
- Yr 2 - 92 hrs GLH

Servicing and Maintaining H&V Systems - Minimum total on-the-job GLH is 184 hrs over 24 months

- Yr 1 - 92 hrs GLH
- Yr 2 - 92 hrs GLH

Advanced Level Apprenticeships

Installing and Pre-commissioning Industrial and Commercial H&V Ductwork Systems - Minimum total on-the-job GLH is 184 hrs over 24 months

- Yr 1 - 92 hrs GLH
- Yr 2 - 92 hrs GLH

Installing and Pre-commissioning Industrial and Commercial H&V Pipework Systems - Minimum total on-the-job GLH is 184 hrs over 24 months

- Yr 1 - 92 hrs GLH
- Yr 2 - 92 hrs GLH

Servicing and Maintaining H&V Systems - Minimum total on-the-job GLH is 184 hrs over 24 months

- Yr 1 - 92 hrs GLH
- Yr 2 - 92 hrs GLH

These are the minimum number of Guided Learning Hours that should be allocated for the apprentice to gather evidence in accordance with the requirements of the integrated qualification and mentoring.

How this requirement will be met

Guided Learning Hours (GLH) will be achieved through clear and specific outcomes which contribute directly to the successful achievement of the framework and these may include

accredited and non-accredited elements of the framework.

GLH will be delivered through one or more of the following methods: coaching; mentoring; feedback and assessment; collaborative/ networked learning with peers.

All GLH delivery must be completed while undertaking *apprenticeship training* and will take place during contracted working hours.

This will be evidenced by the apprentices portfolio, employer dialogue, qualification assessment records and reports.

Personal learning and thinking skills assessment and recognition (England)

Summary of Personal Learning and Thinking Skills

The six Personal, Learning and Thinking Skills will be achieved and demonstrated as detailed in the following statements while completing one of the following three qualifications:

- Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation
- Level 2 NVQ Diploma in Heating and Ventilating - Industrial and Commercial Installation
- Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating & Ventilating Equipment

The normal entry route into the Advanced Level Apprenticeships is through progression from the Intermediate Level Apprenticeship. However, those entering the Advanced Level Apprenticeship directly need to produce auditible evidence to demonstrate their previous knowledge and experience is compatible with the relevant Level 2 qualification. This can be achieved through a process of Recognition of Prior Learning (RPL).

Formal recognition of PLTS achievement will be provided in the form of a certificate upon framework completion.

Creative thinking

Creative thinking will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering - (J/602/2479)
- Understand how to apply scientific principles with MES - (J/602/2496)
- Understand industrial and commercial fire rated ductwork installation techniques - (H/602/2716)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Creative thinking will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to apply scientific principles within MES (J/602/2496)
- Understand and carry out site preparation and pipework fabrication techniques for IC systems (A/602/2768)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Creative thinking will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand and carry out site preparation and pipework fabrication techniques for IC systems (A/602/2768)
- Service and maintain industrial and commercial H&V systems (J/602/4930)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Independent enquiry

Independent enquiry will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation** as referenced below:

- Understand industrial and commercial rectangular ductwork installation techniques (J/602/2711)
- Understand industrial and commercial circular and flat ductwork installation techniques (L/602/2712)
- Understand industrial and commercial local exhaust ventilation installation techniques - (M/602/2718)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Independent enquiry will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation** as referenced below:

- Understand how to apply environmental protection measures within BSE (D/602/2486)
- Understand industrial and commercial heating system installation techniques (M/602/2735)

- Apply safe working practices in building services engineering working environment (T/602/2493)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Independent enquiry will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment** as referenced below:

- Understand how to apply scientific principles in MES (J/602/2496)
- Apply safe working practices in building services engineering working environment T/602/2493)
- Service and maintain industrial and commercial H&V systems (J/602/4930)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Reflective learning

Reflective learning will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to apply environmental protection measures in BSE - (D/602/2486)
- Apply safe working practices in building services engineering working environments - (T/602/2493)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Reflective learning will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to communicate with others in BSE (J/602/2482)
- Understand and carry out site preparation and pipework fabrication techniques for IC systems (A/602/2768)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Reflective learning will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment** as referenced below:

- Understand how to communicate with others in BSE (J/602/2482)
- Understand industrial and commercial hot and cold water system maintenance techniques (J/602/4927)
- Understand industrial and commercial air system maintenance techniques (R/602/4929)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Team working

Team Working will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to communicate with others in BSE - (J/602/2482)
- Install H&V industrial and commercial ductwork - (Y/602/2776)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Team Working will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation** as referenced below:

- Understand how to communicate with others in BSE (J/602/2482)
- Apply safe working practices in building services engineering working environment (T/602/2493)
- Install Industrial and Commercial H&V systems (Y/602/2776)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Team Working will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment** as referenced below:

- Understand how to communicate with others in BSE (J/602/2482)
- Understand how to apply environmental protection measures in BSE (D/602/2486)

- Apply safe working practices in building services engineering working environment (T/602/2493)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Self management

Self management will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to apply environmental protection measures in BSE - (D/602/2486)
- Understand how to apply scientific principles with MES - (J/602/2496)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Self management will be demonstrated and delivered at a minimum level in the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation** as referenced below:

- Understand and carry out site preparation and pipework fabrication techniques for IC systems (A/602/2768)
- Apply safe working practices in building services engineering working environment (T/602/2493)
- Install industrial and commercial H&V systems (Y/602/2776)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Self management will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment** as referenced below:

- Understand how to apply scientific principles in MES (J/602/2496)
- Understand how to apply environmental protection measures in BSE D/602/2486)
- Understand and carry out site preparation and pipework fabrication techniques for IC systems (A/602/2768)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Effective participation

Effective participation will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating - Ductwork Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to apply environmental protection measures in BSE - (D/602/2486)
- Apply safe working practices in building services engineering working environments - (T/602/2493)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Effective participation will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Heating and Ventilating Industrial and Commercial Installation** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to apply environmental protection measures in BSE (D/602/2486)
- Apply safe working practices in building services engineering working environment (T/602/2493)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Effective participation will be demonstrated and delivered at a minimum level within the units of the competence-based qualification **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment** as referenced below:

- Understand and carry out safe working practices in building services engineering (J/602/2479)
- Understand how to communicate with others in BSE (J/602/2482)
- Service and maintain industrial and commercial H&V systems (J/602/4930)

Assessment and recognition will take place during the delivery and be evidenced at certification by the achievement of the qualification.

Additional employer requirements

Although not a requirement for issuing an Apprenticeship Completion Certificate, employers in the building services engineering sector ***encourage*** organisations delivering a learning and assessment programme for the Advanced Level Apprenticeship Frameworks to integrate the ***Level 3 Award in Understanding the Fundamental Principles and Requirements of Environmental Technology Systems*** (City & Guilds 600/0701/1 or EAL 600/0665/1; credit value 2; GLH 15) into their delivery models.

It should be noted that the delivery of this qualification will ***not*** attract funding.

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