



ENERGY &  
UTILITY SKILLS

Skills for a greener world

EUIAS Level 3 End-point Assessment for Plumbing and  
Domestic Heating Technician  
(Fossil Fuel – Natural Gas; Oil; Solid Fuel;  
Environmental Technologies)

## Supporting Documents

QAN 610/3505/1



# Supporting Documents for

## EUIAS Level 3 End-point Assessment for Plumbing and Domestic Heating Technician

### (Fossil Fuel – Natural Gas; Oil; Solid Fuel and Environmental Technologies)

**QAN 610/3505/1**

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## Updates to the supporting documents

Since the first publication of the EUIAS Supporting Documents (PDHT) Fossil Fuel - Natural Gas; Oil; Solid Fuel and Environmental Technologies, the following updates have been made.

Version	Date first published	Section updated	Page(s)
V1.0	March 2024	First published	All

## Appendix A: Glossary

**Amplification** – provides more detail on how individual knowledge, skills or behaviours statements should be interpreted. Where the KSB statements, themselves are deemed self-explanatory, no amplification is provided. Assessment may include questions on anything identified in the amplification

**Behaviours (as part of KSBs)** – specific mindsets, attitudes or approaches identified as part of the apprenticeship standard that must be evidenced during end-point assessment

**Elements** – are the knowledge, skills and behaviours and what is needed to competently undertake the duties required for an occupational standard

**Gateway** - the stage of the apprenticeship where the apprentice, employer and training provider determine whether the apprentice is ready to undertake end-point assessment

**Guidance** – is only provided where it is required to support interpretation of the KSB statements

**Knowledge (as part of KSBs)** – specific information, technical detail, and 'know-how' identified as part of the apprenticeship standard that must be evidenced during end-point assessment

**Pathways** – a specialist route within an apprenticeship standard that builds on the occupational competence for a new entrant to the occupation

**Skills (as part of KSBs)** – the practical application of knowledge identified as part of the apprenticeship standard that must be evidenced during end-point assessment

**Standard** – An occupational standard is a description of an occupation. It contains occupational profile, and describes KSBs needed for someone to be competent in the occupation's duties. Occupational standards are developed by employers for occupations that meet the Institute for Apprenticeships and Technical Education current occupation criteria

**Topic** - is a collection of elements grouped into a theme e.g. Health and Safety



## Appendix B: Gateway Eligibility Form

(Standard Version: ST0303 version 1.0; Assessment Plan Version: ST0303/AP01)

Apprentice's name:	Apprentice's job title:
Name of Employer:	Name of Training provider:
Employer representatives present:	Training provider representatives present:
Apprenticeship start date:	Apprenticeship on-programme end date:
Gateway meeting date:	
Has the apprentice taken any part of the end-point assessment for this apprenticeship standard with any other End Point Assessment Organisation?	Y / N
If "Yes" please give details:	



## Apprentice's details

Eligibility requirements:

The apprentice must confirm their achievement of the following:

Eligibility requirement	Achieved by the apprentice? Y/N	Evidence (Scans of certificates MUST be included)
Achieved Level 2 English or higher		
Achieved Level 2 Maths or higher		
Achieved Level 3 Plumbing and Domestic Heating Qualification		
Compiled and submitted a workplace logbook of evidence that meets the specification requirements, on which the professional discussion will be based		

## Gateway Eligibility Declaration

1. The apprentice, the employer and the training provider must sign this form to confirm that they understand and agree to the following:
2. The apprentice has completed the required on-programme elements of the apprenticeship and is ready for end-point assessment with EUIAS.
3. EUIAS has been informed about any reasonable adjustment and/or special considerations requests.
4. The apprentice will only submit their own work as part of end-point assessment.
5. All parties agree that end-point assessment evidence may be recorded and stored by EUIAS for quality assurance purposes.
6. The apprentice has been on-programme for a minimum duration of 365 days.
7. The apprentice has achieved English and maths Level 2 or higher as detailed in this document.
8. The apprentice has achieved the Level 3 Plumbing and Domestic Heating Qualification
9. The apprentice satisfactorily completed a formal training plan agreed by the employer.
10. The apprentice has compiled and submitted a competent workplace logbook of evidence, on which the professional discussion will be based.
11. The apprentice, if successful, gives permission for EUIAS to request the apprenticeship certificate from the ESFA who issue the certificate on behalf of the Secretary of State.
12. The apprentice has been directed to the EUIAS Appeals Policy and Complaints Policy.
13. The employer/training provider has given the EUIAS at least three months' notice of requesting this EPA for this apprentice.
14. If the Gateway Eligibility Report is not completed in full, meeting all requirements, and submitted to EUIAS, the end-point assessment cannot take place.



Signed on behalf of the employer (print name):	Signature:	Date:
Signed on behalf of the training provider (print name):	Signature:	Date:
Apprentice's name (print):	Signature:	Date:
EUIAS use only:		
EUIAS Sign off:		
Comments/actions:		



## Appendix C: Practice Multiple-choice Test



## Level: 3

### Plumbing and Domestic Heating Technician

#### Supporting Document: Practice Paper

This practice paper reflects the type of questions in the live multiple-choice test, which can be taken as an online test or paper-based test.

This examination consists of 50 multiple-choice questions.

The Pass mark is 25 correct answers.

The Merit mark is 38 correct answers.

A mark of 45 or more is a Distinction.

The duration of this examination is 90 minutes.

You must use a **pencil** to complete the answer sheet - pens must NOT be used.

When completed, please leave the examination answer sheet and question paper on the desk.

For this paper:

- the use of a scientific calculator (non-programmable) is permitted
- access to the internet or intranet is NOT allowed

For each question, fill in ONE answer ONLY.

If you make a mistake, ensure you erase it thoroughly.

You must mark your choice of answer by shading in ONE answer circle only. Please mark each choice like this:

#### MARKING INSTRUCTIONS

A  B  C  D **ANSWER COMPLETED CORRECTLY**

Examples of how NOT to mark your examination sheet. **These will not be recorded**

A  B  C  D **DO NOT** partially shade the answer circle.

A  B  C  D **DO NOT** use ticks or crosses.

A  B  C  D **DO NOT** use circles.

A  B  C  D **DO NOT** shade over more than one circle.

**This paper must be returned to EUIAS with the apprentice answer sheets.**



You may use this page for rough work. This page must not be removed.



**Question 1**

The requirements of the Health and Safety at Work Act 1974 include:

**Possible answers**

a)	Employers have duties towards employees and their families
b)	Employers have duties towards employees and members of the public
c)	Employers have duties to report all incidents and accidents to the Health and Safety Executive
d)	Employers have duties that are required to meet productivity standards specified by their employer

**Question 2**

Which ONE of the following is **NOT** a type of asbestos commonly found in the workplace?

**Possible answers**

a)	Chrysotile
b)	Crocidolite
c)	Amosite
d)	Calcite

**Question 3**

In the event of an accident at work a responsible person at work must submit a 'Reporting of Injuries, Diseases and Dangerous Occurrences Regulations' (RIDDOR) report to the Health and Safety executive within:

**Possible answers**

a)	1 day
b)	3 days
c)	5 days
d)	10 days

**Question 4**

The primary shielding gas used to weld mild steel is:

**Possible answers**

a)	75% argon and 25% carbon dioxide
b)	75% acetylene and 25% oxygen
c)	21.9% oxygen and 78% nitrogen
d)	10% hydrogen and 90 helium



**Question 5**

When would the use of leaning ladders be considered a suitable option to conduct work at height?

**Possible answers**

a)	Where it is the most cost-effective solution
b)	Where the work activity is low risk and short duration
c)	Where work will take less than one hour to complete
d)	Where the work area cannot be reached from a fixed scaffold

**Question 6**

A confined space with a flammable component is considered hazardous when the Lower Explosive Limit (LEL) is:

**Possible answers**

a)	present above 10%
b)	present above 20%
c)	present above 50%
d)	present above 70%



**Question 7**

How often should a technician inspect power tools for wear and damage?

**Possible answers**

a)	When serviced
b)	Before every use
c)	After every use
d)	Before the battery is charged

**Question 8**

What are the typical sizes for cold water pipes in a domestic dwelling?

**Possible answers**

a)	8 mm and 35 mm
b)	15 mm and 22 mm
c)	10 mm and 28 mm
d)	20 mm and 40 mm



**Question 9**

For horizontal pipework, what is the recommended maximum spacing between supports for steel pipes with a diameter of 100 mm?

**Possible answers**

a)	2 meters
b)	2.5 meters
c)	3 meters
d)	3.5 meters

**Question 10**

The SI unit for pressure is:

**Possible answers**

a)	Pascal
b)	Newton
c)	Joule
d)	Watt



**Question 11**

Which property of gases explains their ability to fill any container regardless of its form?

**Possible answers**

a)	Rigidity
b)	Compressibility
c)	Definite volume
d)	Indefinite Shape

**Question 12**

Which ONE of the following is used to convert a temperature from Celsius(C) to Kelvin(K)?

**Possible answers**

a)	$K = C + 273$
b)	$K = C - 273$
c)	$K = C \times 273$
d)	$K = C \div 273$



**Question 13**

How can a technician convert British thermal units (BTU) to (kilowatts) kW for a heating system?

**Possible answers**

a)	Divide by 3412
b)	Multiple by 3412
c)	Add the heat loss to the Kw total
d)	Multiply the heat loss by 1,500 for heating

**Question 14**

If a force of 100 N (Newton) is applied to an area of 20 m<sup>2</sup>, what pressure is exerted?

**Possible answers**

a)	5 pa (Pascals)
b)	1000 pa (Pascals)
c)	2000 pa (Pascals)
d)	5000 pa (Pascals)

**Question 15**

A fluid exerts a pressure of 3000 Pa (Pascals) on a surface with an area of 2 m<sup>2</sup>. What is the force acting on the surface?

**Possible answers**

a)	1500 N (Newton)
b)	2000 N (Newton)
c)	3000 N (Newton)
d)	6000 N (Newton)



**Question 16**

The technician is using a screwdriver to insert a screw. The screwdriver is being used as a:

**Possible answers**

a)	pulley
b)	lever
c)	wedge
d)	extractor

**Question 17**

Using the formula  $V=IR$  where  $V$  is voltage,  $I$  is current, and  $R$  is resistance.

What is the voltage across a resistor of 10 ohms when a current of 2 amps flows through it?

**Possible answers**

a)	5 volts
b)	12 volts
c)	20 volts
d)	50 volts



**Question 18**

What is the main responsibility of the construction site manager?

**Possible answers**

a)	To provide first aid in the event of an accident
b)	To monitor the budget and schedule of the project
c)	To design the project and obtain planning permission
d)	To consult with the client and report on the progress of the project

**Question 19**

What is an example of non-verbal communication?

**Possible answers**

a)	Drafting an email or a letter
b)	Speaking slowly and clearly
c)	Listening actively and attentively
d)	Using gestures during a conversation

**Question 20**

Which ONE of the following client is typically cost-sensitive and may prefer to handle plumbing repairs themselves?

**Possible answers**

a)	Estate Agents
b)	Home owners
c)	Entrepreneurs
d)	Local Council



**Question 21**

Which ONE of the following are types of projects within the building industry?

**Possible answers**

a)	Institutional business facilities
b)	Commercial public building structures
c)	Large construction domestic dwellings
d)	Residential construction and remodelling

**Question 22**

What is the first step in creating a safe system of work (SSOW) for a plumbing job?

**Possible answers**

a)	Communicating with the client
b)	Conducting a risk assessment
c)	Writing a health and safety policy
d)	Providing health and safety training

**Question 23**

What is the easiest way to stop the flow of water to a property without searching for stopcocks and check valves?

**Possible answers**

a)	Turning off the water at the main kitchen inside the property
b)	Shutting off the water supply at the individual taps in the property
c)	Locating the main water meter outside the property and turning the handle a ¼ turn
d)	Using a flat head screwdriver to lift the lid of the water meter.



**Question 24**

What is the name of the organisation that provides consumers with essential basic information on a range of plumbing and heating matters in the UK?

**Possible answers**

a)	British Plumbing Employers Council (BPEC)
b)	Plumbing and Heating Contractors' Alliance (PHCA)
c)	Association of Plumbing and Heating Contractors Ltd. (APHC)
d)	Chartered institute of Plumbing and Heating Engineering (CIPHE)

**Question 25**

Name two types of backflow prevention devices.

**Possible answers**

a)	Air gap and check valve
b)	Vacuum breaker and double check valve
c)	Pressure reducing valve and expansion vessel
d)	Thermostatic mixing valve and non-return valve

**Question 26**

The purpose of soundness testing a cold water system is to:

**Possible answers**

a)	check the water quality and purity
b)	check the water pressure and flow rate
c)	check the water tightness and integrity
d)	check the water temperature an expansion



**Question 27**

The optimal temperature range for legionella growth in water systems is:

**Possible answers**

a)	0 - 20°C
b)	20 - 45°C
c)	45 - 60°C
d)	60 - 80°C

**Question 28**

An increase in volume of water as it is heated in a closed system is known as:

**Possible answers**

a)	thermal stress
b)	thermal shock
c)	thermal expansion
d)	thermal contraction



**Question 29**

The name of the British standard that provides guidance on the installation and commissioning of hot water systems in the UK.

**Possible answers**

a)	BS EN 12828: Heating systems in buildings. Design for water-based heating systems
b)	BS EN 806: Specifications for installations inside buildings conveying water for human consumption
c)	BS 6700: Design, installation, testing and maintenance of services supplying water for domestic use within buildings and their curtilages
d)	BS 8558: Design, installation, testing and maintenance of services supplying water for domestic use within building and their curtilages

**Question 30**

What is the recommended test pressure for a hot water system?

**Possible answers**

a)	1.5 times the maximum working pressure
b)	2 times the maximum working pressure
c)	2.5 times the maximum working pressure
d)	3 times the maximum working pressure

**Question 31**

The main reason for positioning the pump as close as possible to the water source is to:

**Possible answers**

a)	optimise the flow rate and prevent surging
b)	reduce the suction head and prevent cavitation
c)	increase the discharge head and improve efficiency
d)	minimise the friction losses and reduce power consumption

**Question 32**

After checking for leaks, how would a technician fill a sealed heating system?

**Possible answers**

a)	Fill all the system whilst bleeding taps and radiators at once
b)	First fill the system to achieve pressure with the heating on and then open the taps
c)	First fill the system to achieve pressure, tap pressure then close the radiator and bleed valves
d)	First fill the system to achieve pressure with all outlets closed then fill venting radiators and open taps



**Question 33**

What are the two main methods of soundness testing a hot water system?

**Possible answers**

a)	Air test and water test
b)	Visual inspection and leak detection
c)	Hydrostatic test and pneumatic test
d)	Pressure test and temperature test

**Question 34**

What role does a filter play in rainwater recycling systems?

**Possible answers**

a)	To increase water pressure
b)	To regulate water temperature
c)	To make rainwater safe to drink
d)	To remove leaves and dirt from the water



**Question 35**

The purpose of a downspout in a rainwater system is:

**Possible answers**

a)	To enhance the aesthetic appeal
b)	To collect rainwater from the roof
c)	To prevent the gutter from clogging
d)	To direct water away from the foundation

**Question 36**

The most likely cause of sagging gutters is:

**Possible answers**

a)	support brackets are spaced too far apart
b)	support brackets are spaced too close
c)	guttering seals are perished
d)	downpipe is cracked

**Question 37**

The device that controls the flow of water within a toilet is known as:

**Possible answers**

a)	valve
b)	spout
c)	cistern
d)	nozzle



**Question 38**

The test that is used to check the water tightness of a pipe system is known as:

**Possible answers**

a)	flow test
b)	leak test
c)	sound test
d)	pressure test

**Question 39**

The document that provides detailed information on the installation, operation, maintenance of a sanitary appliance or a pipework system is known as:

**Possible answers**

a)	NHBC warranty
b)	technical specification
c)	job maintenance schedule
d)	manufacturers instructions

**Question 40**

The technology that collects and stores rainwater for later use is known as:

**Possible answers**

a)	rainwater recycling
b)	rainwater diversion
c)	rainwater treatment
d)	rainwater harvesting



**Question 41**

Which ONE of the following UK government schemes pays households and businesses for generating their own electricity from renewable sources such as solar panels or wind turbines?

**Possible answers**

a)	Feed-in Tariff (FIT)
b)	Smart Export Guarantee (SEG)
c)	Renewable Heat Incentive (RHI)
d)	Renewable Obligation Certificate (ROC)

**Question 42**

Which ONE of the following fuels obtained from food waste or animal manure can be used to power boilers, cookers or generators?

**Possible answers**

a)	Biogas
b)	Biomass
c)	Biodiesel
d)	Bioethers



**Question 43**

Which ONE of the following is used to store large quantities of crude oil or refined petroleum products such as gasoline or diesel in a liquid state?

**Possible answers**

a)	Bin
b)	Silo
c)	Tank
d)	Cabinet

**Question 44**

Which ONE of the following combustions produce an orange smoky flame due to small particles of pure carbon glowing red hot?

**Possible answers**

a)	complete combustion
b)	hypergolic combustion
c)	incomplete combustion
d)	spontaneous combustion

**Question 45**

What is visible when incomplete combustion has taken place?

**Possible answers**

a)	Soot and poor flame picture
b)	Smoke and blue bright flame
c)	Soot and blue low temperature flame
d)	Smoke and orange high temperature flame



**Question 46**

What is the function of a flue within a domestic dwelling?

**Possible answers**

a)	To allow the back boiler to have sufficient air as cold air falls
b)	To carry the products of combustion safely away as hot air rises
c)	To carry the products of air around the house to dilute combustion
d)	To carry the products of combustion through the ventilation system

**Question 47**

The primary purpose of testing flues and chimney systems serving solid fuel appliances is to:

**Possible answers**

a)	check for bird nests
b)	ensure safety and efficiency
c)	assess the colour of the flue
d)	measure the temperature of the flue

**Question 48**

A technician has doubts about electrical work that should be started.  
What must the technician do?

**Possible answers**

a)	Proceed with the work
b)	Consult the building regulations
c)	Seek advice from a gas engineer
d)	Refer to a competent electro-technical officer



**Question 49**

Identify the first step that must be taken to conduct safe isolation procedure.

**Possible answers**

a)	Prove dead
b)	Apply safety earths
c)	Secure the point of isolation
d)	Identify suitable point(s) for isolation

**Question 50**

When testing a thermistor what setting would the multimeter device be set to?

**Possible answers**

a)	Current
b)	Voltage
c)	Amperage
d)	Resistance

End of Questions.



## Practice Multiple-choice Test

### Answer scheme

Question	Answer	Question	Answer	Question	Answer
1	A	21	D	41	A
2	D	22	B	42	A
3	D	23	C	43	C
4	A	24	C	44	D
5	B	25	A	45	A
6	A	26	C	46	B
7	B	27	B	47	B
8	B	28	C	48	D
9	C	29	D	49	D
10	A	30	C	50	D
11	D	31	B		
12	A	32	D		
13	A	33	C		
14	C	34	D		
15	D	35	D		
16	B	36	A		
17	C	37	C		
18	D	38	D		
19	D	39	D		
20	B	40	D		

## Appendix D: Practice Design Project Template

Employers/training providers are recommended to arrange for apprentices to carry out a practice design project prior to end-point assessment. The form below is for the use of the employer/training provider setting up the design project. A practice test is available for EUIAS registered customers, please contact the Service Delivery Team via [enquiries@euias.co.uk](mailto:enquiries@euias.co.uk)

### Design Project

Building plans are provided to the apprentice with a job specification, manufacturer's information and data, British Standards and regulations. The apprentice must complete a heating, hot water and cold water design capable of meeting the job specification. The apprentice must carry out tasks involving manual handling, which can be incorporated into any of the tasks mentioned below where it fits in. The apprentice will produce the following in 7 hours, which may be split over two days in an assessment centre under examination conditions:

- Design criteria
- Completed fabric heat loss
- Heating pipework sizing
- Hot and cold water sizing
- Final layout plans
- Materials list
- Merchant order

Area	Task Description and Knowledge	The apprentice must be able to:
Core plumbing systems – Cold water systems	Design a cold water system (K2)	Select correct appliances
		Select correct components, system design and fittings
		Describe water supplies
		Identify types and typical pipe sizes
		Know the advantages and disadvantages of domestic systems
		Select sufficient materials selected for the project's completion
		Recognition of components and correct placement
Core plumbing systems – Hot water Systems	Design a hot water system (K2)	Recognise unvented system components
		Understand what documentation is required for installing unvented systems
		Understand what contributing factors need to be followed in order to correctly sizing on unvented system for a dwelling
		Reference information on selecting suitable components for unvented system, including design temperatures, and other important factors
		Understand predetermined data and calculations on how components affect hot water systems
		Recognise key factors with unvented hot water systems when quoting for work

Area	Task Description and Knowledge	The apprentice must be able to:
Core plumbing systems – Central heating systems	Design a central heating system (K2)	Follow manufacturers instructions
		Contribute factors on selecting central heating systems
		Reference documentation on correctly, sizing heating systems and their components
		Understand the principles of heat loss, and how to factor these affects into heating requirements
		Select appropriate components in accordance with predetermined data
		Select key factors with central heating systems when quoting for work
Core plumbing systems – Rainwater systems	Design a rainwater system (K2)	Select factors that affect choosing rainwater systems
		Select appropriate documentation for the selection of rainwater, gutter systems and components
		Work out rainwater and gutter system requirements for domestic dwelling
		Identify key factors with rainwater systems when quoting for work
Core plumbing systems – Sanitation systems	Design a sanitation system (K2)	Identify factors that affect choosing sanitation systems
		Select appropriate documentation for the selection of sanitation systems and components
		Work out sanitation system requirements for domestic dwelling
		Identify key factors with sanitation systems when quoting for work
		Understand safe, working practices on site and in domestic dwellings

Area	Task Description and Knowledge	The apprentice must be able to:
Customer Service and Communication	Produce a work programme (K7 and K8)	Understand the importance of following company procedures and policies
		Produce relevant documentation and schedules for completing works with other trades

## Appendix E - Plumbing and Domestic Heating Practical Installation and Application Test Planning Form

### Instructions

This form has two purposes:

1. To help you plan practice Practical Installation and Application Tests for your apprentices
2. To inform EUIAS of the live assessment

### Practical Installation Test

1 - 2 apprentices may be assessed at one time depending on number of EPA bays at the independent assessment centre. Bays will need to be independent, and the apprentice must not have had any exposure to the bay whilst on-programme.

The apprentice is assessed:

- in 6 hours, which may be split over two days
- completing the fabrication of a pipework frame, utilising different material and pipework components with various jointing techniques. The assessment marking criteria will include overall performance and soundness, quality of manufacturer and tolerance of  $\pm 2\text{mm}$

Equipment and resources needed for the assessment must be in good and safe working condition.

### Practical Application Test

1 apprentice may be assessed at one time in a secure bay. The secure bays must be independent, and the apprentice must not have had any exposure to the bay whilst on-programme.

The apprentice is assessed:

- inspecting a pre-installed unvented cylinder, functioning with electrical components and controls. The independent assessor will make alterations to the system to create faults on various components within the system
- in a total of 3 hours. The first 2 hours the apprentice must identify the faults and repair then re-commission the system. Finally, the apprentice will

complete a service on the unvented system, according to manufacturer's instructions, this will be undertaken within 1 hour

Equipment and resources needed for the assessment must be in good and safe working condition.

The activities will be designed to assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship. However, as a minimum the practical installation and practical application test will cover the activities and KSBs listed in the Planning Forms below.

Complete the 'Practical Installation and Application Tests Planning Forms' and submit them to the Service Delivery team via [enquiries@euias.co.uk](mailto:enquiries@euias.co.uk), for **review 1 month before the start** of the end-point assessment.

## Practical Installation Test Planning Form

Employer name and site address	
Training provider (if applicable)	
Standard	Plumbing and Domestic Heating
Pathway	
Level	3
Independent Assessment Centre address for the practical installation test	
Contact Details: Employer/training provider representative, email address and contact number overseeing the setup of the practical installation test (documents and site).	

Please describe in the boxes below how the practical installation test will achieve the following requirements:

Please confirm the location of the independent assessment centre and provide the name and full address:

Please confirm by checking the box that your independent assessment centre is approved to deliver the plumbing and domestic heating assessments

Please provide details of who approved the above independent assessment centre:



**Please confirm the independent assessment centre will be set up for the end-point assessment to run the practical installation test (PIT) and will include the following by checking each box and providing details where necessary:**

**Please provide information below about the secure bays, equipment, materials and tools that will be set up and made available for the apprentice to complete the fabrication of a pipework frame, utilising different materials and pipework components with various jointing techniques and allow the apprentice to carry out tasks 1 – 6 including manual handling. See PDHT Specification Section 2 Component 3 Practical Installation Test for details.**

A fully functioning unvented water cylinder will be provided on the day of the EPA assessment

Additional details:

A pipe board size of 900mm x 750mm made from 18mm plywood is recommended, please confirm this will be available on the day of the EPA assessment

Additional details:

The apprentice will have access to a bench and vice

Additional details:

### **Secure Bays for each task:**

#### **Task 1. Install cold water systems and decommission chilly water systems**

Secure bay(s): The wall area used for mounting and fabrication will be prepared, filled and painted so no existing marks are on the wall

**Please Note:** The above is required as EUIAS will mark the apprentice on all elements of the task, including preparation and fabrication.

Please confirm the bay is independent

Please include any other details:

Photographs of each secure bay submitted with this document



**Please confirm the independent assessment centre will be set up for the end-point assessment to run the practical installation test (PIT) and will include the following by checking each box and providing details where necessary:**

### **Task 2. Install hot water systems**

Secure bay(s): The wall area used for mounting and fabrication will be prepared, filled and painted so no existing marks are on the wall

**Please Note:** The above is required as EUIAS will mark the apprentice on all elements of the task, including preparation and fabrication.

Please confirm the bay is independent

Please include any other details:

Photographs of each secure bay submitted with this document

### **Task 3. Install central heating systems**

Secure bay(s): The wall area used for mounting and fabrication will be prepared, filled and painted so no existing marks are on the wall

**Please Note:** The above is required as EUIAS will mark the apprentice on all elements of the task, including preparation and fabrication.

Please confirm the bay is independent

Please include any other details:

Photographs of each secure bay will be submitted with this document

### **Task 4. Install rainwater and gutter system installation to layout requirements**

Secure bay(s): The wall area used for mounting and fabrication will be prepared, filled and painted so no existing marks are on the wall

**Please Note:** The above is required as EUIAS will mark the apprentice on all elements of the task, including preparation and fabrication.

Please confirm the bay is independent

Please include any other details:

Photographs of each secure bay will be submitted with this document

**Please confirm the independent assessment centre will be set up for the end-point assessment to run the practical installation test (PIT) and will include the following by checking each box and providing details where necessary:**

**Please confirm.**

The independent assessment centre will be open to ensure the apprentices and the independent assessor have access before (time to set up), during (6 hours) and after (time to pack up) the practical installation test:

Opening time: \_\_\_\_\_

Closing time: \_\_\_\_\_

**Please confirm.**

**The independent centre has been set up to carry out the PAT** and designed to meet the knowledge, skills and behaviours (KSBs) requirements: K1; K2; K4; K8; S1; S2; S3; S4; B2; B4; B6; B7. Details for the individual KSBs, **See PDHT Specification Section 2 Component 3 Practical Installation Test for details** (please check the box below):

All KSBs will be covered:

Additional details:

**Special requirements** (for example: access arrangements/PPE):

**Duration of the PIT must be 6 hours.**

**Please confirm the apprentice(s) will have 6 hours to complete the tasks:**

\_\_\_\_\_

**Remember:**

- The specific detail of the tasks must be **kept confidential from the apprentices.**



**PIT Area:** Include relevant photographs to illustrate Equipment, materials and tools that will allow the apprentice to complete the fabrication of a pipework frame, utilising different materials and pipework components with various jointing techniques

EUIAS Office use only

Date received	
Date signed off	

## Practical Application Test Planning Form

Employer name and site address	
Training provider (if applicable)	
Standard	Plumbing and Domestic Heating
Pathway	
Level	3
Independent Assessment Centre address for the practical installation test	
Contact Details: Employer/training provider representative, email address and contact number overseeing the setup of the practical installation test (documents and site).	

Please describe in the boxes below how the Practical Application Test (PAT) will achieve the following requirements:

**Please confirm by checking the box below and provide details:**

Provide the name and address of the independent assessment centre:

Confirm by checking the box that your independent assessment centre is approved to deliver the plumbing and domestic heating assessments

Provide details of who approved the above independent assessment centre:

Confirm the assessments will be conducted in an independent assessment centre within a secure bay

**Please confirm the independent assessment centre will be set up for the end-point assessment to run the PAT (please check the box in each section below to confirm and provide additional details where required):**

Include a cylinder:

Suggested size for cylinder cupboard 900mm x 900mm (suggestion only and spacing can be used to suit the centre requirements). Please confirm cylinder details and size below:

The installation will allow easy access to all pipework and components including D1 and D2 pipework for IEPA to take place with faults on these cylinders

Please provide details:

Access should also be given to the D2 termination point.

Please provide details:

Apprentices are also required to complete electrical safe isolation as part of this assessment. Please confirm the apprentice will have access to an electrical safe isolation kit which will include:

- Lock off notices
- Suitable lock of devices for a fused spur connection unit
- Electrical screw drivers
- GS 38 approved voltage indicating device (Multi meters not suitable)
- Proving unit (if device is not self proving)
- A selection of various sized cartridge fuses
- HSE guidance, TB118 Or GS38 guidance documentation is also allowed

Additional details:



**Please confirm the independent assessment centre will be set up for the end-point assessment to run the PAT (please check the box in each section below to confirm and provide additional details where required):**

Allow the apprentice to inspect a pre-installed unvented cylinder, functioning with electrical components and controls

Additional details:

Allow the assessor to make alterations to the system to create faults on various components within the system

Additional details:

Allow the apprentice 2 hours to identify the faults and repair then re-commission the system:

Additional details:

Allow the apprentice to complete a service on the unvented system, according to manufacturer's instructions within 1 hour:

Additional details:

**Please confirm.**

The independent assessment centre and secure bay will be open to ensure the apprentices and the independent assessor have access before (time to set up), during (2 hours) and after (time to pack up) the practical application test:

Opening Times: \_\_\_\_\_

Closing Times: \_\_\_\_\_

Additional details:



**Please confirm the independent assessment centre will be set up for the end-point assessment to run the PAT (please check the box in each section below to confirm and provide additional details where required):**

**Please confirm.**

The Practical Application Test area will be designed to meet the knowledge, skills and behaviours (KSBs) requirements: K1; K2; K3; K4; K7; K8; S1; S2; S3 and S4. Details for the individual KSBs can be found in the specification in Section 2: End-point assessment component 3:

Additional details:

**Special requirements** (for example: access arrangements/PPE):

**Duration of the practical installation test must be 3 hours.**

**Please confirm the apprentice(s) will have 3 hours to complete the tasks:**

**Remember:**

- The specific detail of the tasks will be **kept confidential from the apprentices**

**PAT Area:** Include relevant photographs to illustrate Equipment, materials and tools that will allow the apprentice to inspect a pre-installed unvented cylinder, functioning with electrical components and controls. For the assessor to make alterations to the system to create faults on various components within the system.



EUIAS Office use only

Date received	
Date signed off	

## Appendix F: Practice PIT Template

Employers/training providers are recommended to arrange for apprentices to carry out a practice Practical Installation Test prior to end-point assessment. The form below is for use by the person playing the part of the independent assessor.

### Instructions

This should be read in conjunction with the PDHT Specification.

This template has been designed to help the suitable person playing part of the independent assessor and has three purposes:

1. To prepare for a practice assessment
2. Designed to holistically assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship by the apprentice
3. To provide feedback to the apprentice in preparation for the live assessment

The assessor should:

- complete the form below which has two parts to assess the apprentice's PIT.

**Quick Tip** – How to complete the form below:

Full Name of Apprentice		<div data-bbox="992 1214 1366 1375" style="border: 1px solid black; padding: 5px;"> <p>It is important to ensure that the page illustrated is completed by the assessor.</p> </div>			
Independent Assessment Centre Address for the Practical Installation Test					
Standard	Plumbing and Domestic Heating				
Pathway					
Level	3				
Name of Independent Assessor					
Date of Practical Installation Test					
Start Time					
End Time					
Independent Assessor: Additional Comments			<div data-bbox="992 1675 1366 1836" style="border: 1px solid black; padding: 5px;"> <p>The assessor should write additional comments to support the preliminary grade decision.</p> </div>		
<table border="1" style="width: 100%;"> <tr> <td style="width: 80%;">Please indicate the apprentice's practical installation preliminary grade (P; M or D)</td> <td style="width: 20%; text-align: center;"><b>Grade</b></td> </tr> <tr> <td style="height: 20px;"></td> <td></td> </tr> </table>		Please indicate the apprentice's practical installation preliminary grade (P; M or D)		<b>Grade</b>	
Please indicate the apprentice's practical installation preliminary grade (P; M or D)	<b>Grade</b>				



Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Health and Safety K1; K8; S1; S2; S4; B2; B4 and B7	Explain the purpose of personal protective equipment (PPE)	<input type="checkbox"/>
	Use personal protective equipment (PPE)	<input type="checkbox"/>
	Define procedures for manual handling	<input type="checkbox"/>
	Carry out correct manual handling	<input type="checkbox"/>
	Use mechanical lifting aids	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		<input type="checkbox"/>
<b>All outcomes achieved:</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Provide feedback for the apprentice to show where they could improve their skills.

Summarise the response that the apprentice gave.

Develop some open ended questions in relation to the KSBs.

Include KSB evidence seen that meets the descriptors for the outcomes achieved.

Check the box for each descriptor the apprentice achieves.

Include the number of descriptors not met.

Check the box if all descriptors are met.

**Component 3: PIT – At the end of this form complete the preliminary grade**

Pass: The apprentice has achieved all of the following:	Pass
<b>Only have up to and including 5 errors</b> in the selection of materials, development of the pipework frame to include: operating safely, measuring, marking, (planning) bending, cutting, jointing, bracketing (installing) and water tightness (testing) across the pipework and cabling materials.	<input type="checkbox"/>
<b>Taking responsibility</b> for the work environment and the health and safety of others	<input type="checkbox"/>
<b>B2</b> Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence	<input type="checkbox"/>
<b>B4</b> Quality focused in work and in personal standards	<input type="checkbox"/>
<b>B6</b> Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public	<input type="checkbox"/>
<b>B7</b> Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors	<input type="checkbox"/>
<b>Preliminary Grade: Pass</b>	<input type="checkbox"/>
<b>Assessor comments to justify preliminary grade achieved:</b>	

Check the box if the apprentice only had up to an including 5 errors.

Check the box if the apprentice achieved the descriptors and you are awarding a pass as a preliminary grade.

Include reasons to highlight why you have awarded the preliminary grade.



Full Name of Apprentice	
Independent Assessment Centre Address for the Practical Installation Test	
Standard	Plumbing and Domestic Heating
Pathway	
Level	3
Name of Independent Assessor	
Date of Practical Installation Test	
Start Time	
End Time	
Independent Assessor: Additional Comments	

Please indicate the apprentice's practical installation preliminary grade (P; M or D)	Grade

To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.

### Component 3: Practical Installation Test (PIT)

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Health and Safety K1; K8; S1; S2; S4; B2; B4 and B7	Explain the purpose of personal protective equipment (PPE)	<input type="checkbox"/>
	Use personal protective equipment (PPE)	<input type="checkbox"/>
	Define procedures for manual handling	<input type="checkbox"/>
	Carry out correct manual handling	<input type="checkbox"/>
	Use mechanical lifting aids	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved:</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Common processes, and technique – Plumbing science and processes K2; K4 S1 and B7	Select correct tools, pipework, fittings and jointing materials	<input type="checkbox"/>
	Correctly measure, mark and cut materials for installation within given tolerances	<input type="checkbox"/>
	Mechanically bend pipework to clear up, schools and step over installed pipework to tolerance	<input type="checkbox"/>
	Fix pipework and materials to surfaces correctly using appropriate fixings within tolerance	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Core plumbing systems – Sanitation systems  K2; S1; S2; S4; B2; B4 and B7	Use correct pipe size to carry out practical installation	<input type="checkbox"/>
	Use appropriate clips to secure pipework following building regulations	<input type="checkbox"/>
	Refer to correct documentation for the installation of disability appliances	<input type="checkbox"/>
	Use the correct jointing methods to complete sanitation pipework	<input type="checkbox"/>
	Conduct a satisfactory performance test on sanitation pipework	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Core plumbing systems – cold water services  K2; K8; S1; S2; S4; B2; B4; B7	Measure, mark and cut cold water pipework to tolerances, and install to predetermined schematic	<input type="checkbox"/>
	Install hot water appliances to manufacturers specifications	<input type="checkbox"/>
	Carry out a successful soundness test to building regulations	<input type="checkbox"/>
	Safely drain down appliances	<input type="checkbox"/>
	Decommission cold water pipework and sort recyclable products	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Core plumbing systems – hot water services  K2; K8; S1; S2; S4; B2; B4; B7	Measure, mark and cut cold water pipework to tolerances, and install to predetermined schematic	<input type="checkbox"/>
	Install hot water appliances to manufacturers specifications	<input type="checkbox"/>
	Carry out a successful soundness test to building regulations	<input type="checkbox"/>
	Safely drain down appliances	<input type="checkbox"/>
	Decommission hot water pipework and sort recyclable products	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Core plumbing systems – central heating systems  K2; K8; S1; S2; S4; B2; B4; B7	Measure, mark and cut cold water pipework to tolerances, and install to predetermined schematic	<input type="checkbox"/>
	Install hot water appliances to manufacturers specifications	<input type="checkbox"/>
	Carry out a successful soundness test to building regulations	<input type="checkbox"/>
	Safely drain down appliances	<input type="checkbox"/>
	Decommission central heating pipework and sort recyclable products	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Core plumbing systems – rainwater systems	Understand the differences between various types of guttering and rainwater systems	<input type="checkbox"/>
	Replace predetermined section of guttering, following manufacturers instructions	<input type="checkbox"/>
K2; S1; S2; S4; B2; B4; B7	Install predetermined section of rainwater system successfully	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Customer Service - Supervisory Skills S4	Apply the use of sufficient PPE	<input type="checkbox"/>
	Produce suitable risk assessment ensuring the safety of all stakeholders	<input type="checkbox"/>
	Confirm the status of the electrical supplies and installation	<input type="checkbox"/>
	Conduct work in a safe and competent manner, including safe isolation	<input type="checkbox"/>
	Taking responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Number of errors</b>		
<b>All outcomes achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Behaviours	KSB	To achieve a Pass, Merit or Distinction will be based on total errors across all elements of the practical installation assessment.	Check the box if achieved
Dependable and responsible	B2	Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence.	<input type="checkbox"/>
Quality focus	B4	Be quality focussed on work and in personal standards.	<input type="checkbox"/>
Working with others	B6	Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public.	<input type="checkbox"/>
Sustainable working	B7	Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors.	<input type="checkbox"/>
<b>Number of errors</b>			
<b>All outcomes achieved</b>			<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>			
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PIT.			
<b>Summary of response to question(s)</b>			
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>			

Pass: The apprentice has achieved all of the following:	Pass
<b>Only have up to and including 5 errors</b> in the selection of materials, development of the pipework frame to include: operating safely, measuring, marking, (planning) bending, cutting, jointing, bracketing (installing) and water tightness (testing) across the pipework and cabling materials.	<input type="checkbox"/>
<b>Taking responsibility</b> for the work environment and the health and safety of others	<input type="checkbox"/>
<b>B2</b> Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence	<input type="checkbox"/>
<b>B4</b> Quality focused on work and in personal standards	<input type="checkbox"/>
<b>B6</b> Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public	<input type="checkbox"/>
<b>B7</b> Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors	<input type="checkbox"/>
<b>Preliminary Grade: Pass</b>	<input type="checkbox"/>
<b>Assessor comments to justify preliminary grade achieved:</b>	

Merit: The apprentice has achieved all of the following:	Merit
<b>Only have up to and including 3 errors</b> in the selection of pipework materials, development of the pipework frame to include operating safely, measuring, marking, (planning) bending, cutting, jointing, bracketing (installing) and water tightness (testing) across the pipework and cabling materials.	<input type="checkbox"/>
<b>Taking responsibility</b> for the work environment and the health and safety of others	<input type="checkbox"/>
<b>B2</b> Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence	<input type="checkbox"/>
<b>B4</b> Quality focused on work and in personal standards	<input type="checkbox"/>
<b>B6</b> Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public	<input type="checkbox"/>
<b>B7</b> Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors	<input type="checkbox"/>
<b>Preliminary Grade: Merit</b>	<input type="checkbox"/>
<b>Assessor comments to justify preliminary grade achieved:</b>	

Distinction: The apprentice has achieved all of the following:	Distinction
<b>Have no more than one error</b> in the selection of materials, development of the pipework frame to include operating safely, measuring, marking, (planning) bending, cutting, jointing, bracketing (installing) and water tightness (testing) across the pipework and cabling materials	<input type="checkbox"/>
<b>Taking responsibility</b> for the work environment and the health and safety of others	<input type="checkbox"/>
<b>B2</b> Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence	<input type="checkbox"/>
<b>B4</b> Quality focused on work and in personal standards	<input type="checkbox"/>
<b>B6</b> Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public	<input type="checkbox"/>
<b>B7</b> Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors	<input type="checkbox"/>
<b>Preliminary Grade: Distinction</b>	<input type="checkbox"/>
<b>Assessor comments to justify preliminary grade achieved:</b>	

## Appendix G: Practice PAT Template

Employers/training providers are recommended to arrange for apprentices to carry out a practice Practical Application Test prior to end-point assessment. The form below is for use by the person playing the part of the independent assessor.

### Instructions

This should be read in conjunction with the PDHT Specification.

This template has been designed to help the suitable person playing part of the independent assessor and has three purposes:

1. To prepare for a practice assessment
2. Designed to holistically assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship by the apprentice
3. To provide feedback to the apprentice in preparation for the live assessment

The assessor should:

- complete the form below which has two parts to assess the apprentice's PAT.

**Quick Tip** – How to complete the form below:

Full Name of Apprentice	
Independent Assessment Centre (with a secure bay) Address for the Practical Application Test	
Standard	Plumbing and Domestic Heating
Pathway	
Level	3
Name of Independent Assessor	
Date of Practical Application Test	
Start Time	
End Time	
Independent Assessor: Additional Comments	
Please indicate the apprentice's practical application test preliminary grade (F/P)	Grade

It is important to ensure that the page illustrated is completed by the assessor.

The assessor should write additional comments to support the preliminary grade decision.



Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Health and Safety K1; K3 and S1	Identify common electrical dangers encountered on construction sites and in private dwellings	<input type="checkbox"/>
	State methods of safe supply for electrical tools and equipment on site	<input type="checkbox"/>
	State the procedure that should be applied for tools and equipment that fail safety checks	<input type="checkbox"/>
	Identify safe isolation procedure when replacing attachments to power tools	<input type="checkbox"/>
	Conduct a visual inspection of a power tool for safe condition before use	<input type="checkbox"/>
	Use temporary continuity bonding when working on pipework components	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Check the box for each descriptor the apprentice achieves.

Check the box if all descriptors are met.

Provide feedback for the apprentice to show where they could improve their skills.

Summarise the response that the apprentice gave.

Develop some open ended questions in relation to the KSBs.

Include KSB evidence seen that meets the descriptors for the outcomes achieved.

**Component 4: PAT – At the end of this form complete the preliminary grade**

To achieve a Pass the apprentice must demonstrate core KSBs in an integrated way.

Pass: The apprentice has achieved all of the following:	Pass
Identify and repair faults correctly	<input type="checkbox"/>
Carry out service to manufacturer's instructions	<input type="checkbox"/>
Demonstrate safe working practices	<input type="checkbox"/>
Take responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Preliminary Grade: Pass</b>	<input type="checkbox"/>
<b>Preliminary Grade: Fail</b>	<input type="checkbox"/>
<b>Assessor comments to justify preliminary grade:</b>	

The assessor should write additional comments to support the preliminary grade decision.

Check the preliminary fail or pass box to confirm the grade for PAT.



Full Name of Apprentice	
Independent Assessment Centre (with a secure bay) Address for the Practical Application Test	
Standard	Plumbing and Domestic Heating
Pathway	
Level	3
Name of Independent Assessor	
Date of Practical Application Test	
Start Time	
End Time	
Independent Assessor: Additional Comments	

Please indicate the apprentice's practical application test preliminary grade (F/P)	Grade

Component 4 – PAT: The apprentice must demonstrate core KSBS in an integrated way.

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Health and Safety K1; K3 and S1	Identify common electrical dangers encountered on construction sites and in private dwellings	<input type="checkbox"/>
	State methods of safe supply for electrical tools and equipment on site	<input type="checkbox"/>
	State the procedure that should be applied for tools and equipment that fail safety checks	<input type="checkbox"/>
	Identify safe isolation procedure when replacing attachments to power tools	<input type="checkbox"/>
	Conduct a visual inspection of a power tool for safe condition before use	<input type="checkbox"/>
	Use temporary continuity bonding when working on pipework components	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Core plumbing systems – Cold water systems K2; S1; S2 and S4	Carry out a soundness test	<input type="checkbox"/>
	Describe operational checks required during commissioning	<input type="checkbox"/>
	Identify the range of information that would be detailed on commissioning documentation	<input type="checkbox"/>
	Identify actions that must be taken when commissioning reveals defects	<input type="checkbox"/>
	Describe the procedure for handing over to the end user	<input type="checkbox"/>
	Carry out commissioning procedures	<input type="checkbox"/>
	Describe methods of obtaining information on system faults	<input type="checkbox"/>
	Carry out diagnostic checks for faults	<input type="checkbox"/>
	Carry out repair and rectification procedures to deal with a range of faults	<input type="checkbox"/>
	Carry out routine checks of Cold Water System (CWS)	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Core plumbing systems – Hot water systems  K2; S1; S2 and S4	Explain procedures for decommissioning systems	<input type="checkbox"/>
	Carry out decommissioning procedures	<input type="checkbox"/>
	Carry out a soundness test	<input type="checkbox"/>
	Describe operational checks required during commissioning	<input type="checkbox"/>
	Identify the range of information that would be detailed on commissioning documentation	<input type="checkbox"/>
	Identify actions that must be taken when commissioning reveals defects	<input type="checkbox"/>
	Describe the procedure for handing over to the end user	<input type="checkbox"/>
	Carry out commissioning procedures	<input type="checkbox"/>
	Describe methods of obtaining information on system faults	<input type="checkbox"/>
	Carry out diagnostic checks for faults	<input type="checkbox"/>
	Carry out repair and rectification procedures to deal with a range of faults	<input type="checkbox"/>
Carry out service and maintenance of systems	<input type="checkbox"/>	
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		

**Questions asked:** Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT

**Summary of response to question(s)**

**Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.**

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Core plumbing systems – Central Heating systems  K2; S1; S2 and S4	Carry out a soundness test	<input type="checkbox"/>
	Describe operational checks required during commissioning	<input type="checkbox"/>
	Identify the range of information that would be detailed on commissioning documentation	<input type="checkbox"/>
	Identify actions that must be taken when commissioning reveals defects	<input type="checkbox"/>
	Describe the procedure for handing over to the end user	<input type="checkbox"/>
	Carry out commissioning procedures	<input type="checkbox"/>
	Describe methods of obtaining information on system faults	<input type="checkbox"/>
	Carry out diagnostic checks for faults	<input type="checkbox"/>
	Carry out repair and rectification procedures to deal with a range of faults	<input type="checkbox"/>
	Carry out service and maintenance of systems and controls	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		

**Questions asked:** Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.

**Summary of response to question(s)**

**Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.**

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Core plumbing systems – Rainwater water systems K2; S1; S2 and S4	Explain procedures for decommissioning systems	<input type="checkbox"/>
	Carry out decommissioning procedures	<input type="checkbox"/>
	Identify actions that must be taken when commissioning reveals defects	<input type="checkbox"/>
	Describe the procedure for handing over to the end user	<input type="checkbox"/>
	Carry out soundness testing and commissioning procedures	<input type="checkbox"/>
	Describe methods of obtaining information on system faults	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Core plumbing systems – Sanitation systems K2; S1; S2 and S4	Explain procedures for decommissioning systems	<input type="checkbox"/>
	Carry out decommissioning procedures	<input type="checkbox"/>
	Describe the procedure for handing over to the end user	<input type="checkbox"/>
	Carry out soundness testing and commissioning procedures	<input type="checkbox"/>
	Describe methods of obtaining information on system faults	<input type="checkbox"/>
	Carry out diagnostic checks for a range of faults	<input type="checkbox"/>
	Carry out repair and rectification procedures to deal with a range of faults	<input type="checkbox"/>
	Carry out routine checks of sanitary appliances and pipework systems	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Electrical components and control systems K1; K2, K3; K7, K8; S1 and S3	Produce a risk assessment and method statement for the work to be carried out, in accordance with: <ul style="list-style-type: none"> <li>a) the plumbing and domestic heating system's design <input type="checkbox"/></li> <li>b) the conditions of the working environment <input type="checkbox"/></li> <li>c) organisational procedures <input type="checkbox"/></li> </ul>	<input type="checkbox"/>
	Apply and use personal protective equipment (PPE)	<input type="checkbox"/>
	Confirm the status of the electrical supply	<input type="checkbox"/>
	Confirm, as necessary, that the electrical supply is suitable for the plumbing and domestic heating systems	<input type="checkbox"/>
	Select, as required, electrical equipment, cables/wiring and components and confirm that they are: <ul style="list-style-type: none"> <li>a) of the right type and size <input type="checkbox"/></li> <li>b) fit for purpose in accordance with the plumbing and domestic heating systems design <input type="checkbox"/></li> </ul>	<input type="checkbox"/>
	Carry out work on electrical equipment, cables/wiring and components associated with the electrical supply and control of the plumbing and domestic heating system in accordance with the requirements of: <ul style="list-style-type: none"> <li>a) industry recognised methods and procedures <input type="checkbox"/></li> <li>b) Manufacturers instructions <input type="checkbox"/></li> </ul>	<input type="checkbox"/>

	Identify that the electrical equipment, cables/wiring and components are in accordance with the requirements of the plumbing.	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Plumbing science and processes	State work methods for preparing and protecting the building for installation work	<input type="checkbox"/>
	Identify the pre-existing damage checks to the building fabric or customer property before the work commences	<input type="checkbox"/>
K4 and S4	Describe the methods of safe storing of tools, equipment	<input type="checkbox"/>
	Identify sources of information for carrying out preparatory work	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and outcomes achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

Area and KSBs	Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Customer service and Communication K7 and K8	Identify different hazards	<input type="checkbox"/>
	Identify levels of risk	<input type="checkbox"/>
	Produce a risk assessment for a task	<input type="checkbox"/>
	Produce a method statement for a task	<input type="checkbox"/>
<b>All Pass descriptors achieved</b>		<input type="checkbox"/>
<b>Assessor comments to justify the evidence seen and KSBs achieved:</b>		
<b>Questions asked:</b> Develop open ended questions to help evidence the descriptors above. Ask questions to assess the KSBs that did not occur naturally during the PAT.		
<b>Summary of response to question(s)</b>		
<b>Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.</b>		

### Component 4 – Practical Application Test

To achieve a Pass the apprentice must demonstrate core KSBs in an integrated way.

Pass: The apprentice has achieved all of the following:	Pass
Identify and repair faults correctly	<input type="checkbox"/>
Carry out service to manufacturer's instructions	<input type="checkbox"/>
Demonstrate safe working practices	<input type="checkbox"/>
Take responsibility for the work environment and the health and safety of others	<input type="checkbox"/>
<b>Preliminary Grade: Pass</b>	<input type="checkbox"/>
<b>Preliminary Grade: Fail</b>	<input type="checkbox"/>
<b>Assessor comments to justify preliminary grade:</b>	

## Appendix H: Practice Professional Discussion Template

Employers/training providers are recommended to arrange for apprentices to carry out a practice Professional Discussion prior to end-point assessment.

### Instructions

This should be read in conjunction with the PDHT Specification.

This template has been designed to help the suitable person playing part of the independent assessor and has three purposes:

1. To prepare for a practice assessment
2. Designed to holistically assess a broad range of the skills, knowledge and behaviours developed over the period of the apprenticeship by the apprentice
3. To provide feedback to the apprentice in preparation for the live assessment

The assessor should:

- complete the form below which has two parts to assess the apprentice's Professional Discussion.
- review the apprentice's portfolio of evidence before the practice assessment

**Quick Tip** – How to complete the form below:

Full Name of Apprentice	
Location of Practice Professional Discussion	
Name of Independent Assessor	
Date of Professional Discussion	
Start Time	
End Time	
Independent Assessor: Additional Comments	
<div style="border: 1px solid black; height: 100px;"></div>	
Please indicate the apprentice's professional discussion preliminary grade (F/P)	Grade

It is important to ensure that the page illustrated is completed by the assessor.

The assessor should write additional comments to support the preliminary grade decision.

Please Note:

To achieve a Pass, the Apprentice must achieve all of the pass descriptors.

Fail: The apprentice does not demonstrate the pass descriptors.



Component 5 – Professional Discussion

**Knowledge K5** Understand the principles of fuel combustion, ventilation and fluing arrangements within a domestic environment

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved
K5 Understands the principles of fuel combustion		<input type="checkbox"/>
K5 Ventilation arrangements within a domestic environment		<input type="checkbox"/>
K5 Fluing arrangements within a domestic environment		<input type="checkbox"/>
<b>Questions</b> <i>Develop some open ended questions</i>		
Timeline reference:		Workplace logbook reference:
Write down the follow up questions asked:		
<b>Comments:</b>		
<b>Fail</b>	<input type="checkbox"/>	<b>Pass</b> <input type="checkbox"/>

Check the pass box if the apprentice achieved the descriptors.

Include the page number(s) of where in the workplace logbook the evidence has been seen that meets the descriptor above.

Record the time the question is asked.

Develop some open ended questions in relation to the KSBs.

If follow up questions are asked include them here.

Check the fail or pass box to confirm the grade for this group.



Full Name of Apprentice	
Location of Practice Professional Discussion	
Name of Independent Assessor	
Date of Professional Discussion	
Start Time	
End Time	
Independent Assessor: Additional Comments	

Please indicate the apprentice's professional discussion preliminary grade (F/P)

Grade

**Please Note:**

To achieve a Pass, the Apprentice must achieve all of the pass descriptors.

Fail: The apprentice does not demonstrate the pass descriptors.

### Component 5 – Professional Discussion

**Knowledge K5** Understand the principles of fuel combustion, ventilation and fluing arrangements within a domestic environment

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved	
K5 Understands the principles of fuel combustion		<input type="checkbox"/>	
K5 Ventilation arrangements within a domestic environment		<input type="checkbox"/>	
K5 Fluing arrangements within a domestic environment		<input type="checkbox"/>	
<b>Questions</b>			
<i>Develop some open ended questions</i>			
Timeline reference:		Workplace logbook reference:	
Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>	<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will understand.....

**Option 1 – Fossil Fuel – Natural Gas**

**Knowledge Gas - KG1** - Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances

**Skill Gas - SG1** - Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved
KG1 Understand the principles of selection installation on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KG1 Understand the principles of installation on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KG1 Understand the principles of selection testing on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KG1 Understand the principles of commissioning on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KG1 Understand the principles of service and maintenance techniques on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
SG1 Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
<b>Questions</b> <i>Develop some open ended questions</i>		
Timeline reference:		Workplace logbook reference:

Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>		<b>Pass</b> <input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will understand.....

**Option 2 – Fossil Fuel – Oil**

**Knowledge Oil - KO1** - Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances

**Skill Oil - SO1** - Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved
KO1 Understand the principles of selection installation on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KO1 Understand the principles of installation on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KO1 Understand the principles of selection testing on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KO1 Understand the principles of commissioning on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
KO1 Understand the principles of service and maintenance techniques on domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
SO1 Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances		<input type="checkbox"/>
<b>Questions</b> <i>Develop some open ended questions</i>		
Timeline reference:		Workplace logbook reference:

Write down the follow up questions asked:				
<b>Comments:</b>				
<b>Fail</b>	<input type="checkbox"/>		<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will understand.....

**Option 3 – Fossil Fuel – Solid Fuel**

**Knowledge Solid - KS1** - Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic solid mineral fuel, wood burning and biomass appliances

**Skill Solid - SS1** - Select, install, test, commission, service and maintain domestic solid mineral fuel, wood burning and biomass appliances

To achieve a pass the apprentice must achieve ALL the pass descriptors.	Pass - Check the box if achieved
KS1 Understand the principles of selection installation on domestic downstream natural gas pipework systems and appliances	<input type="checkbox"/>
KS1 Understand the principles of installation on domestic downstream natural gas pipework systems and appliances	<input type="checkbox"/>
KS1 Understand the principles of selection testing on domestic downstream natural gas pipework systems and appliances	<input type="checkbox"/>
KS1 Understand the principles of commissioning on domestic downstream natural gas pipework systems and appliances	<input type="checkbox"/>
KS1 Understand the principles of service and maintenance techniques on domestic downstream natural gas pipework systems and appliances	<input type="checkbox"/>
SS1 Select, install, test, commission, service and maintain domestic solid mineral fuel appliances	<input type="checkbox"/>
SS1 Select, install, test, commission, service and maintain domestic wood burning appliances	<input type="checkbox"/>
SS1 Select, install, test, commission, service and maintain domestic biomass appliances	<input type="checkbox"/>
<b>Questions</b> <i>Develop some open ended questions</i>	

Timeline reference:		Workplace logbook reference:	
Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>		<b>Pass</b> <input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will understand.....

**Option 4 – Environmental Technologies**

**Knowledge Environmental - KE1** - Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on solar thermal, heat pumps and water recycling systems

**Skill Environmental - SE1** - Select, install, test, commission, service and maintain solar thermal, heat pumps and water recycling systems

To achieve a pass the apprentice must achieve ALL the pass descriptors.	Pass - Check the box if achieved
KE1 Understand the principles of selection techniques on solar thermal, heat pumps and water recycling systems	<input type="checkbox"/>
KE1 Understand the principles of installation techniques on solar thermal, heat pumps and water recycling systems	<input type="checkbox"/>
KE1 Understand the principles of testing techniques on solar thermal, heat pumps and water recycling systems	<input type="checkbox"/>
KE1 Understand the principles of commissioning techniques on solar thermal, heat pumps and water recycling systems	<input type="checkbox"/>
KE1 Understand the principles of service and maintenance techniques on solar thermal, heat pumps and water recycling systems	<input type="checkbox"/>
SE1 Select, install, test, commission, service and maintain solar thermal	<input type="checkbox"/>
SE1 Select, install, test, commission, service and maintain heat pumps	
SE1 Select, install, test, commission, service and maintain water recycling systems	
<b>Questions</b> <i>Develop some open ended questions</i>	

Timeline reference:		Workplace logbook reference:	
Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>		<b>Pass</b> <input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will demonstrate.....

**Behaviours – Honesty and Integrity**

**B1** Develop trust with customers and colleagues by undertaking responsibilities in an ethical and empathetic manner

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved
<b>B1</b> Develop trust with customers by undertaking responsibilities in an ethical and empathetic manner		<input type="checkbox"/>
<b>B1</b> Develop trust with colleagues by undertaking responsibilities in an ethical and empathetic manner		<input type="checkbox"/>
<b>Questions</b> <i>Develop some open ended questions</i>		
Timeline reference:		Workplace logbook reference:
Write down the follow up questions asked:		
<b>Comments:</b>		
<b>Fail</b>	<input type="checkbox"/>	<b>Pass</b>

Component 5: Professional Discussion– The apprentice will demonstrate.....

**Behaviours – Dependable and responsible**

**B2** Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence

To achieve a pass the apprentice must achieve ALL the pass descriptors.				Pass - Check the box if achieved	
<b>B2</b> Show conscientiousness through being punctual, reliable and professional				<input type="checkbox"/>	
<b>B2</b> Take responsibility for own judgements and actions				<input type="checkbox"/>	
<b>B2</b> Aware of the limits of their own competence					
<b>Questions</b> <i>Develop some open ended questions</i>					
Timeline reference:				Workplace logbook reference:	
Write down the follow up questions asked:					
<b>Comments:</b>					
<b>Fail</b>	<input type="checkbox"/>			<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will demonstrate.....

**Behaviours – Enthusiasm and positive attitude**

**B3 Demonstrate drive and energy in fulfilling requirements of role**

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved	
B3 Demonstrate drive and energy in fulfilling requirements of role		<input type="checkbox"/>	
<b>Questions</b> <i>Develop some open ended questions</i>			
Timeline reference:		Workplace logbook reference:	
Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>	<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will demonstrate.....

**Behaviours –Quality Focus**

**B4** Be quality focussed in work and in personal standards

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved	
<b>B4</b> Be quality focussed in work and in personal standards		<input type="checkbox"/>	
<b>Questions</b> <i>Develop some open ended questions</i>			
Timeline reference:		Workplace logbook reference:	
Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>	<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will demonstrate.....

**Behaviours – Willingness to learn**

**B5** Identify own development needs and take action to meet those needs. Keep up-to-date with best practice. Maintain and enhance competence

To achieve a pass the apprentice must achieve ALL the pass descriptors.				Pass - Check the box if achieved	
<b>B5</b> Identify own development needs and take action to meet those needs				<input type="checkbox"/>	
<b>B5</b> Keep up-to-date with best practice					
<b>B5</b> Maintain and enhance competence					
<b>Questions</b> <i>Develop some open ended questions</i>					
Timeline reference:		Workplace logbook reference:			
Write down the follow up questions asked:					
<b>Comments:</b>					
<b>Fail</b>	<input type="checkbox"/>			<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will demonstrate.....

**Behaviours – Working with others**

**B6** Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public

To achieve a pass the apprentice must achieve ALL the pass descriptors.		Pass - Check the box if achieved	
<b>B6</b> Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public		<input type="checkbox"/>	
<b>Questions</b> <i>Develop some open ended questions</i>			
Timeline reference:		Workplace logbook reference:	
Write down the follow up questions asked:			
<b>Comments:</b>			
<b>Fail</b>	<input type="checkbox"/>	<b>Pass</b>	<input type="checkbox"/>

Component 5: Professional Discussion– The apprentice will demonstrate

**Behaviours – Sustainable working**

**B7** Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors

To achieve a pass the apprentice must achieve ALL the pass descriptors.				Pass - Check the box if achieved	
<b>B7</b> Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors				<input type="checkbox"/>	
<b>Questions</b> <i>Develop some open ended questions</i>					
Timeline reference:		Workplace logbook reference:			
Write down the follow up questions asked:					
<b>Comments:</b>					
<b>Fail</b>	<input type="checkbox"/>			<b>Pass</b>	<input type="checkbox"/>

## Appendix I: Guidelines on how to set up a workplace logbook

The workplace logbook template has been designed and developed by EUIAS. It aligns with the knowledge and skills of the optional pathways along with the behaviours. The KSBs will be assessed through the Professional Discussion and supported by the production of a workplace logbook which **must be completed by the apprentice during the end-point assessment period, with at least 8 weeks to complete, after the gateway.**

### Step-by-step guide on how to set up the Workplace Logbook

#### Step 1

Complete the table below and include at the front of the workplace logbook:

Full Name of Apprentice	
Apprentice signature: Declaration confirming authenticity of their workplace logbook	
Employer details	
Training provider details	
Manager/mentor/ trainer/supervisor or add job title including full name of person signing off the workplace logbook to confirm authenticity of the workplace logbook	
Standard	Plumbing and Domestic Heating
Option	
Level	3

### Step 2:

The workplace logbook will be produced by the apprentice using a selection of quality work from their chosen option (pathway):

- 1: Fossil Fuel – Natural Gas
- 2: Fossil Fuel – Oil
- 3: Fossil Fuel – Solid Fuel
- 4: Environmental Technologies

### Step 3:

The apprentice must develop their workplace logbook by including the following sections:

- create a contents page by completing the table below and including it at the front of the workplace logbook
- Sections 1- 6: Select and include one quality job with supporting evidence chosen for their option to demonstrate relevant knowledge, skills and behaviours that must be mapped in the mapping document.
- Sections 1- 6: Write the title of the quality job in the table below and include page number(s)
- Section 7: Provide quality examples to demonstrate behaviours listed below which must be mapped in the mapping document and included in this section:

### Step 4:

Prepare for the professional discussion by:

- selecting one of the following sections (1 - 6) to discuss during the professional discussion, this selected job must show the apprentice's best job to demonstrate the knowledge, skills and behaviours relevant to that section



Workplace Logbook Contents		
Option: [Add chosen option from list above on page 91]		
Section	Evidence (within the chosen option)	Page (s)
Place at the front of the Workplace Logbook	Workplace Mapping Document	
1	Selecting an appliance including key materials	
2	Installation of an appliance	
3	Testing of an appliance	
4	Commissioning of an appliance	
5	Servicing of an appliance	
6	Maintenance of an appliance	
7	Behaviours:	
	<ul style="list-style-type: none"> <li>Honesty and integrity</li> <li>Dependable and Responsible</li> </ul>	
	<ul style="list-style-type: none"> <li>Take responsibility for own judgements and actions</li> </ul>	
	<ul style="list-style-type: none"> <li>Enthusiasm and positive attitude:</li> </ul>	
	<ul style="list-style-type: none"> <li>Quality of focus</li> </ul>	
	<ul style="list-style-type: none"> <li>Willingness to learn (best practice):</li> </ul>	
	<ul style="list-style-type: none"> <li>Keep up-to-date with best practice</li> </ul>	
	<ul style="list-style-type: none"> <li>Working with others</li> <li>Sustainable working</li> </ul>	

## Appendix J: Workplace Logbook Mapping Document

### Workplace Logbook Mapping Document

This document must be placed at the front of the workplace logbook and submitted to EUIAS with the workplace logbook of evidence.

### Introduction

Use this document to map the workplace logbook of evidence to the KSBs assessed during the professional discussion.

### Apprentice's next steps

1. Complete all the details on the first page and include employer details of where relevant competencies from their experience at work was gained.
2. The apprentice can use a number of different types of evidence to demonstrate their competence as described in Section 5 of the Specification – 'What to include in the Workplace Logbook?'. For further guidance, the apprentice must seek advice from their tutor/supervisor/mentor and training provider.
3. Map evidence to the criteria in the following pages using a referencing system indicating where the evidence for the criteria is located in the workplace logbook e.g., work based evidence Job 1 (J1) page 5 paragraph 2. This will allow the independent assessor to locate the section or specific piece of evidence being discussed and referred to during the professional discussion.
4. Place the workplace logbook mapping document at the front of the workplace logbook of evidence.

The apprentice's training provider must make arrangements for EUIAS to have access to the apprentice's workplace logbook including the workplace logbook mapping document at least 2 weeks before the professional discussion. For apprentices using e-workplace logbooks such as ONEFILE, SMARTASSESSOR, the reference used must simply be the file or folder name you used when uploading the evidence to such systems.

## Workplace Logbook Mapping Document

### 1.1 Mapping Sign off on Workplace Logbook Completion:

Apprentice Full Name (Print)	Apprentice Signature	Training Provider (Company)	Training Provider Signatory	Date of Sign Off

### Core Knowledge

Ref. (KSB)	Apprenticeship Standard Criteria	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
<b>K5</b>	Understand the principles of fuel combustion, ventilation and fluing arrangements within a domestic environment			



Option 1: Fossil Fuel: Natural Gas

Ref. (KSB)	Apprenticeship Standard Criteria	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
<b>Knowledge Gas - KG1</b>	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances			
<b>Skill Gas – SG1</b>	Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances			



Option 2: – Fossil Fuel: Oil

Ref. (KSB)	Apprenticeship Standard Criteria	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
<b>Knowledge Oil – KO1</b>	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic downstream natural gas pipework systems and appliances			
<b>Skill Oil – SO1</b>	Select, install, test, commission, service and maintain domestic downstream natural gas pipework systems and appliances			



Option 3: – Fossil Fuel: Solid Fuel

Ref. (KSB)	Apprenticeship Standard Criteria	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
<b>Knowledge Solid – KS1</b>	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on domestic solid mineral fuel, wood burning and biomass appliances			
<b>Skill Solid – SS1</b>	Select, install, test, commission, service and maintain domestic solid mineral fuel, wood burning and biomass appliances			



Option 4: – Environmental Technologies

Ref. (KSB)	Apprenticeship Standard Criteria	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
<b>Knowledge Environmental – KE1</b>	Understand the principles of selection, installation, testing, commissioning and service and maintenance techniques on solar thermal, heat pumps and water recycling systems			
<b>Skill Environmental – SE1</b>	Select, install, test, commission, service and maintain solar thermal, heat pumps and water recycling systems			



Behaviours

Ref. (KSB)	Apprenticeship Standard Criteria	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
		1	2	3
<b>B1 - Behaviour – Honesty and Integrity</b>	Develop trust with customers and colleagues by undertaking responsibilities in an ethical and empathetic manner			
<b>B2 Behaviour – Dependable and responsible</b>	Show conscientiousness through being punctual, reliable and professional. Take responsibility for own judgements and actions. Aware of the limits of their own competence			
<b>B3 Behaviour – Enthusiasm and positive attitude</b>	Demonstrate drive and energy in fulfilling requirements of role			
<b>B4 Behaviour – Quality Focus</b>	Be quality focussed on work and in personal standards			
<b>B5 Behaviour – Willingness to learn</b>	Identify own development needs and take action to meet those needs. Keep up-to-date with best practice. Maintain and enhance competence			
<b>B6 Behaviour – Working with others</b>	Work effectively and collaborate with colleagues, other trades, clients, suppliers and the public			
<b>B7 Behaviour – Sustainable working</b>	Give consideration to appropriate use of resources and own actions taking into account the impact on environmental, social and economic factors			



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EUIAS Level 3 End-point Assessment for Plumbing and Domestic Heating Technician Fossil Fuel – Natural Gas; Oil; Solid Fuel and Environmental Technologies Supporting Documents v1.0

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