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
ST0303/AP01

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 Plumbing and Domestic Heating Technician 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)
V3.0	October 2024	Appendix C; D; E; F; G and H	10 - 81
V2.0	June 2024	Appendix C: Practice multiple-choice test updated	10 - 33
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.

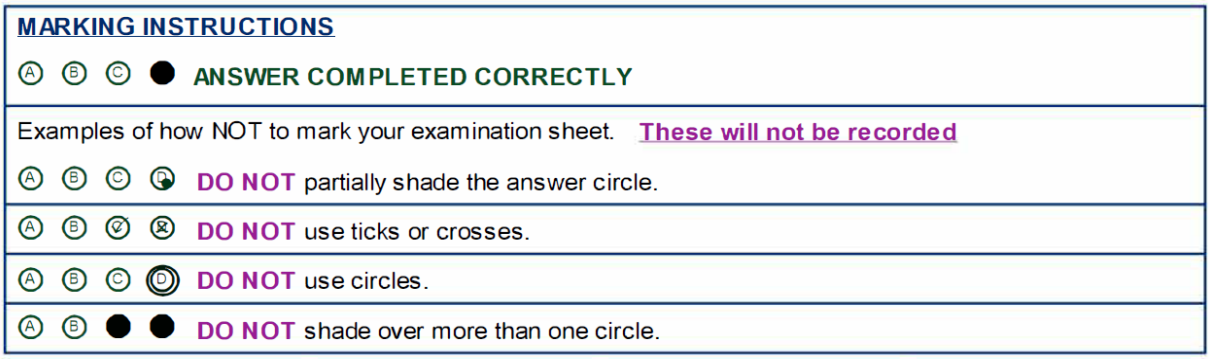
The duration of this examination is 90 minutes.
You must use a **pencil** to complete the answer sheet - pens must NOT be used.
When completed, please leave the examination answer sheet and question paper on the desk.

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:



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 × 273
d)	K = C ÷ 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^2, 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 m². 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	
A technician has a progress meeting with a client regarding the ongoing installation of 4 bathrooms in a block of flats. What document would the technician take to the meeting to discuss?	
Possible answers	
a)	Contract
b)	Method statement
c)	Work programme
d)	Risk Assessment

Question 21	
According to the Construction (Design and Management) (CDM) regulations 2015, HSE must be notified about a construction project when the:	
Possible answers	
a)	site includes two or more trades at any one time
b)	work is being carried out in a non domestic property
c)	work will last more than 30 days and have more than 20 workers onsite at the same time
d)	work will last more than 20 days and have more than 30 workers onsite at the same time

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	
Identify the source of information required when undertaking work on cold water systems.	
Possible answers	
a)	Manufacturers' Instructions, statutory regulations and building regulations
b)	Manufacturers' Instructions, statutory regulations and industry standards
c)	Water regulations, statutory regulations and industry standards
d)	Water regulations, water bye-laws and building regulations

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 is 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	C	41	A
2	D	22	B	42	A
3	D	23	C	43	C
4	A	24	B	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	C	40	D		

Appendix D: Practice Design Project

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

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
- Rainwater system
- 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
		Show calculations and understandings on how to install cold water services
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
		Follow manufacturers' instructions

Area	Task Description and Knowledge	The apprentice must be able to:
Core plumbing systems – Central heating systems	Design a central heating system (K2)	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
Customer Service and Communication	Produce a work programme (K7 and K8)	Understand safe, working practices on site and in domestic dwellings
		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

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.

Practical Installation Test	Practical Application Test
The apprentice is assessed in 6 hours, which may be split over two days.	The apprentice is assessed in a total of 3 hours.
1 - 4 apprentices may be assessed at one time depending on number of EPA secure bays at the independent assessment centre.	
The secure bays will need to be independent, and the apprentice must not have had any exposure to the bay whilst on-programme.	

Complete the 'Practical Installation and Application Tests Planning Forms' and submit them to the Service Delivery team via 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 the independent assessment centre is set-up for the apprentice to carry out their practical installation test (check each box for confirmation and provided additional details where necessary):

(**See PDHT Specification Section 2 Component 3 Practical Installation Test for details.)**

Each bay has a location for a radiator (valves already fitted) ☐ Additional details:
The bays are free of any fixings and markings from any previous work ☐ Additional details:
A sack barrow is supplied to assist the apprentice in moving the radiator and positioning it on a shelf, which is at least 1 metre from the ground. ☐ Additional details:
Each bay includes an existing basin fitted to Doc M standard (height above floor 720mm – 740mm ☐ Additional details:
Secure bay(s) Please confirm each bay is independent prohibiting an apprentice from seeing any other apprentice carrying out their work ☐ Please include any other details: Photographs of each secure bay submitted with this document ☐

Confirm the following materials will be available for the practical installation test for each apprentice by checking the boxes below:	
PPE – Safety googles, Nitrile gloves, hard hat etc. Apprentices should have their own safety boots and suitable work wear.	☐
Pipe cutters with guides, pipe bender Adjustable spanners, pump pliers, set of screwdrivers, tape measure/ruler, spirit level, small battery drill and a pencil. Plastic pipe cutters, hackshaws; files and chamfering tool.	☐
Silicone grease, gas torch, heat mat, lead-free solder and flux. Cleaning strips, jointing pastes/Polytetrafluoroethylene (PTFE) etc. Step ladders/platform, dust sheet, trolly jack, hydraulic test pump, draining hose and hose clips. Water pressure gauge, weir cup, flat tray and a bucket to catch water.	☐
Guttering system (min. 2m long) installed at height greater than 2.5m. Facia brackets 5 inch 45 degree and 67.5 degree push-fit elbows Gutter end-stop end and gutter end-stop with outlet 3 m of drain pipe and pipe clips.	☐
1 m of 50 mm waste pipe, 50 mm P trap, one 50 mm push fit socket, one 50 mm push-fit cap end, two x 50 mm pipe brackets. Dip stick to check the trap seal depth.	☐
2 m of 15 mm plastic pipe, 15 mm plastic socket, 15 mm plastic elbow, 15 mm push-fit to 15 mm male adapter.	☐
2 m of 10 mm plastic pipe, with sockets, elbows; push fit.	☐
2 m of 15 mm copper pipe, 15 mm copper end-feed tee, 15 mm drain off valve, 15 mm isolation valve and six 15 mm pipe clips.	☐

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

Opening time:_____

Closing time:_____

Please confirm.
The independent centre has been set up to carry out the PIT 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:

Practical Installation Test Secure Bay – Please confirm that the apprentice will not have had access to the secure bay before the Practical Installation Test ☐

Please confirm the number of apprentices you have arranged for the assessment, noting that the maximum ratio for assessor to apprentice is 1:4?

Number of apprentices for 1 assessor: _____

Please confirm:
A member of Centre staff must be available at all times during practical tasks ☐

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

Remember:

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

PIT Area: Include relevant photographs to illustrate

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 is set-up for the apprentice to carry out their practical application test (check each box for confirmation and provided additional details where necessary):

(**See PDHT Specification Section 2 Component 4 Practical Application Test for details.)**

Unvented hot water system will be connected to both water and electricity and include pipework of 15 mm and 22 mm diameter with test, drain and bleed points to allow a soundness test to be conducted ☐ Connected to an outlet such as a basin ☐

Unvented cylinder, with manufacturer's instructions will be available : ☐ Suggested size for cylinder 900mm x 900mm (suggestion only and spacing can be used to suit the centre requirements). **Please confirm cylinder size and details 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/Voltage Indicator to confirm safe isolation and also to lock off the electrical supply to the system ☐

- A selection of various sized cartridge fuses ☐
- HSE guidance, TB118 Or GS38 guidance documentation is also allowed ☐

Additional details:

Please confirm the apprentice will have access to the following equipment and materials:

- Dust sheets and cleaning materials ☐
- Manufacturer's instructions for the unvented cylinder☐
- Flow cup☐
- Thermometer☐
- Temporary continuity bond (if required)☐
- Proving Unit☐
- Voltage indicator☐
- Electrical screwdrivers☐
- Wire cutters/pliers☐
- Lock off set for safe isolation☐
- Air pump with gauge and spray for pressure testing☐

All required tools and materials, including any replacement components will be provided by the Centre ☐
Or
Apprentices will be use their own tools and we confirm they are safe, and with the approval of the Centre ☐
Or
Both of the above ☐

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 the practical application test:

Opening Times:_____

Closing Times:_____

Additional details:

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:

Please confirm:
The maximum ratio for assessor to apprentice is 1:4 so long as each apprentice has their own installation to work on and can do so without interfering or gaining advantage from another apprentice. Also each apprentice must be in sight of the assessor.☐

Please confirm: A member of Centre staff must be available at all times during practical tasks ☐

Practical Application Test Secure Bay – Please confirm that the apprentice will not have had access to the secure bay before the Practical Application Test ☐

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

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.

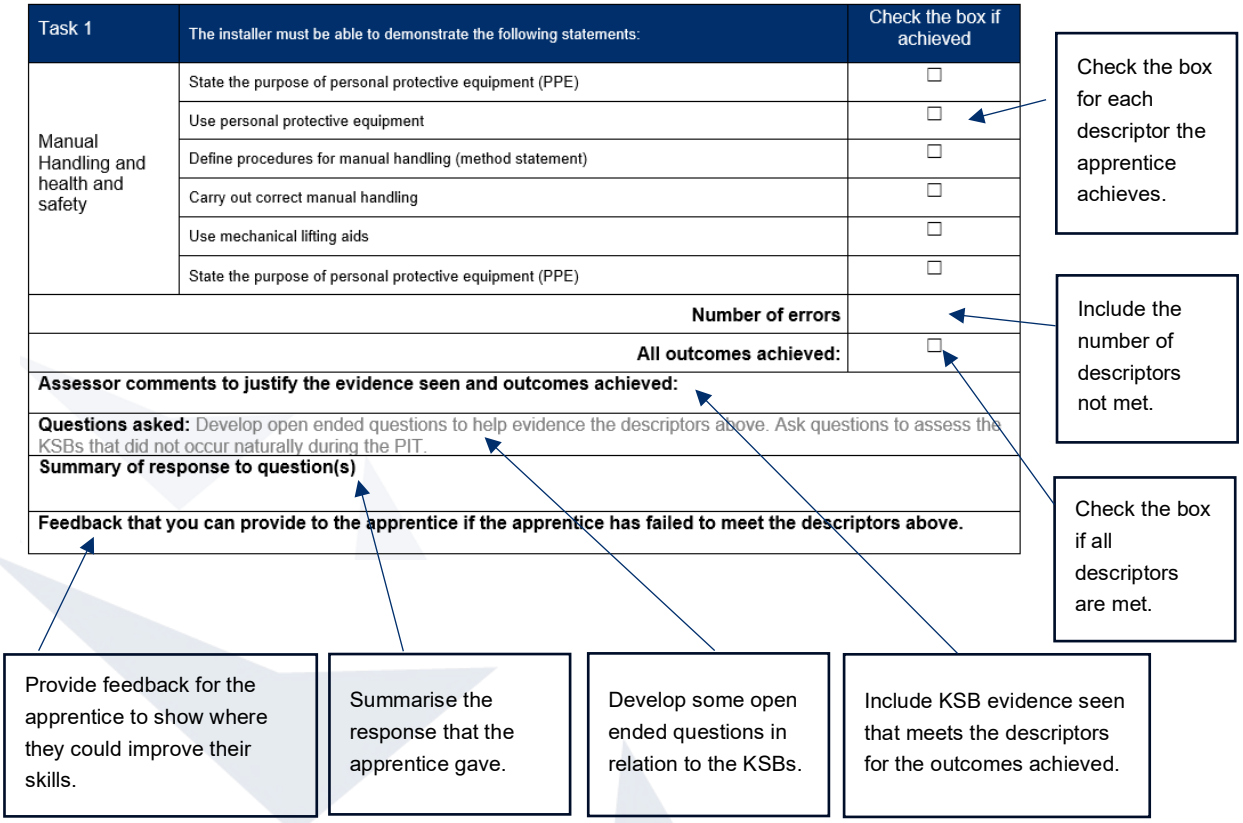
Quick Tip – How to complete the form below:

Full Name of Apprentice	
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

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.



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

L3 PDHT –Practical Installation Test Summary Report				
Total Number of Errors				
Independent Assessor Justification and Feedback:				
Provisional Grade	**(6 or more errors) Fail** ☐	**(4 or 5 errors) Pass** ☐	**(2 or 3 errors) Merit** ☐	**(0 or 1 error) Distinction** ☐

By signing below, I confirm that the information provided is correct and the provisional grade awarded for L3 PDHT PIT is a true reflection of the performance by the apprentice:

Independent Assessor Signature		**Date:**

Write down the total number of errors.

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

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

The assessor to sign and date the report.

Behaviours	The installer demonstrates:	Check the box if achieved
Dependable and responsible	The ability to take on responsibility for delivery of the assessment task, turning up at the required time, with the correct clothing and personal equipment, expected to undertake the task.	☐
Quality focus	Work carried out to the required standards, within the timescales and quality standards identified above.	☐
Working with others	The ability to work with others to maintain the progress completion of the assessment task (communicating with assessor, seeking clarification, providing explanations).	☐
Sustainable working	The ability to undertake work in the most efficient sequences, selects and uses materials and techniques which minimise environmental impact.	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

Check the box if the apprentice achieved the descriptors

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.

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:

Number of errors	PIT Grade
0 or 1	Distinction
2 or 3	Merit
4 or 5	Pass
6 or more	Fail

Component 3: Practical Installation Test (PIT)

Task 1	The installer must be able to demonstrate the following statements:	Check the box if achieved
Manual Handling and health and safety	State the purpose of personal protective equipment (PPE)	☐
	Use personal protective equipment	☐
	Define procedures for manual handling (method statement)	☐
	Carry out correct manual handling	☐
	Use mechanical lifting aids	☐
	State the purpose of personal protective equipment (PPE)	☐
	Number of errors	
	All outcomes achieved:	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

Task 2	The installer must be able to demonstrate the following statements:	Check the box if achieved
Central Heating System	Identify pipework installation requirements	☐
	Select pipework materials and fittings from instructions	☐
	Measure, mark and cut pipework materials for installation	☐
	Fabricate pipework bends to clear obstacles	☐
	Select, position and fix pipework materials to specifications	☐
	Joint pipework to specifications	☐
	Identify the positioning and fixing of pipework	☐
	Install CHS	☐
	Test the system	☐
	Number of errors	
	All outcomes achieved	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

Task 3	The installer must be able to demonstrate the following statements:	Check the box if achieved
Rainwater systems	Identify pipework installation requirements	☐
	Select pipework materials and fittings from instructions	☐
	Measure, mark and cut pipework materials for installation	☐
	Fabricate pipework bends to clear obstacles	☐
	Select, position and fix pipework materials to specifications	☐
	Joint pipework to specifications	☐
	Identify typical sizes and materials used in rainwater and gutter systems	☐
	Install rainwater and gutter systems and components	☐
	Test the system	☐
	Number of errors	
	All outcomes achieved	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

Task 4	The installer must:	Check the box if achieved
Basin – hot and cold waste system	Identify pipework installation requirements	☐
	Select pipework materials and fittings from instructions	☐
	Measure, mark and cut pipework materials for installation	☐
	Fabricate pipework bends to clear obstacles	☐
	Select, position and fix pipework materials to specifications	☐
	Joint pipework to specifications	☐
	Identify the positioning and fixings of pipework within the building fabric	☐
	Install hot and cold water systems	☐
	Test the system	☐
	Explain procedures for decommissioning systems	☐
	Carry out decommissioning procedures	☐
	Number of errors	
	All outcomes achieved	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

Task 5	The installer must:	Check the box if achieved
Basin - sanitation	Identify pipework installation requirements	☐
	Select pipework materials and fittings from instructions	☐
	Measure, mark and cut pipework materials for installation	☐
	Fabricate pipework bends to clear obstacles	☐
	Select, position and fix pipework materials to specifications	☐
	Joint pipework to specifications	☐
	Identify the positioning and fixings of pipework within the building fabric	☐
	Installation requirements in dwellings for the disabled including wet rooms	☐
	Install sanitary appliance pipework systems and components	☐
	Number of errors	
	All outcomes achieved	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

Behaviours	The installer demonstrates:	Check the box if achieved
Dependable and responsible	The ability to take on responsibility for delivery of the assessment task, turning up at the required time, with the correct clothing and personal equipment, expected to undertake the task.	☐
Quality focus	Work carried out to the required standards, within the timescales and quality standards identified above.	☐
Working with others	The ability to work with others to maintain the progress completion of the assessment task (communicating with assessor, seeking clarification, providing explanations).	☐
Sustainable working	The ability to undertake work in the most efficient sequences, selects and uses materials and techniques which minimise environmental impact.	☐
Assessor comments to justify the evidence seen and outcomes achieved:		
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 PIT.		
Summary of response to question(s)		
Feedback that you can provide to the apprentice if the apprentice has failed to meet the descriptors above.		

L3 PDHT –Practical Installation Test Summary Report				
Total Number of Errors				
Independent Assessor Justification and Feedback:				
Preliminary Grade	**(6 or more errors) Fail ☐**	**(4 or 5 errors) Pass ☐**	**(2 or 3 errors) Merit ☐**	**(0 or 1 error) Distinction ☐**

By signing below, I confirm that the information provided is correct and the preliminary grade awarded for L3 PDHT PIT is a true reflection of the performance by the apprentice:

Independent Assessor Signature		**Date:**

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	

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

Task C Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Carry out service and maintenance of systems (O)	☐
Explain procedures for decommissioning systems (Q)	☐
Write down the question asked including time:	☐
Carry out decommissioning procedures (O)	☐
Describe methods of obtaining information on system faults (O & Q)	☐
Write down the question asked including time:	☐
Carry out diagnostic checks for a range of faults (O & Q)	☐
Write down the question asked including time:	☐
Carry out repair and rectification procedures to deal with a range of faults (O)	☐
Select, as required, electrical equipment, cables/wiring and components and confirm that they are: a) of the right type and size (O)☐ b) fit for purpose in accordance with the plumbing and domestic heating system's design (O)☐	☐
All Pass descriptors achieved	☐
Assessor comments to justify the evidence seen and KSBs achieved:	
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.	

Check the box for each descriptor the apprentice achieves.

Check the box if all pass descriptors are met.

Observe and ask a question where both 'O' and 'Q' are indicated.

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

Include KSB evidence seen that meets the descriptors for the outcomes

Observe or ask a question where 'O' or 'Q' is indicated.

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

PDHT –Practical Application Test (PAT) Summary Report

In the box below the independent assessor should:

1) Provide comments explaining their reasoning for the overall provisional Fail or Pass grade awarded for this PAT assessment. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific topics in the practical application test.
2) **Provide feedback if the apprentice has failed**, identifying the areas which were lacking and need improvement.

Independent Assessor Justification and Feedback:		
Provisional Grade	**Fail** ☐	**Pass** ☐

By signing below, I confirm that the information provided is correct and the provisional grade awarded is a true reflection of the performance by the apprentice:

Independent Assessor Signature		Date:

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.

Task A - Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Identify common electrical dangers encountered on construction sites and in private dwellings (Q)	☐
Write down the question asked and the apprentice's answer:	
State methods of safe supply for electrical tools and equipment on site (Q)	☐
Write down the question asked and the apprentice's answer:	
State the procedure that should be applied for tools and equipment that fail safety checks (Q)	☐
Write down the question asked and the apprentice's answer:	
Conduct a visual inspection of a power tool for safe condition before use (O)	☐
State work methods for preparing and protecting the building for installation work (Q)	☐
Write down the question asked and the apprentice's answer:	
Identify the pre-existing damage checks to the building fabric or customer property before the work commences (O)	☐
Use temporary continuity bonding when working on pipework components (O)	☐
Describe the methods of safe storing of tools, equipment (Q)	☐
Write down the question asked and the apprentice's answer:	

Identify sources of information for carrying out preparatory work (Q)	☐
Write down the question asked and the apprentice's answer:	
Produce a risk assessment for the task and method statement for the work to be carried, in accordance with: (O) a) the plumbing and domestic heating system's design ☐ b) the conditions of the working environment ☐ c) organisational procedures ☐	☐
Apply and use personal protective equipment (PPE) (O)	☐
All Pass descriptors achieved	☐
Assessor comments to justify the evidence seen and standards achieved:	
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.	

Task B Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Carry out safe isolation (O)	☐
Identified the fault correctly (O)	☐
Carried out repairs correctly (O)	☐
Identify safe isolation procedure when replacing attachments to power tools. (Q)	☐
Write down the question asked and the apprentice's answer:	
Confirm the status of the electrical supply. (O)	☐
Confirm, as necessary, that the electrical supply is suitable for the plumbing and domestic heating systems. (O)	☐
Select, as required, electrical equipment, cables/wiring and components and confirm that they are: (O) a) of the right type and size (O) b) fit for purpose in accordance with the plumbing and domestic heating system's design (O)	☐
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: (O) a) industry recognised methods and procedures (O) b) manufacturers' instructions (O)	☐
Identify that the electrical equipment, cables/wiring and components are in accordance with the requirements of the plumbing and domestic heating system. (Q)	☐
Write down the question asked and the apprentice's answer:	
Check that the electrical equipment, cables/wiring and components are of proper construction in	☐

accordance with the requirements of the plumbing and domestic heating system. (O)	
Undertake functional testing of the electrical equipment and components associated with the electrical supply and control of the plumbing and domestic heating system in accordance with (O): a) industry recognised methods and procedures (O) ☐ b) manufacturers' instructions (O) ☐	☐
All Pass descriptors achieved	☐
Assessor comments to justify the evidence seen and standards achieved:	
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.	

Task C Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Carry out service and maintenance of systems (O)	☐
Explain procedures for decommissioning systems (Q)	☐
Write down the question asked and the apprentice's answer:	
Carry out decommissioning procedures (O)	☐
Describe methods of obtaining information on system faults (O & Q)	☐
Write down the question asked and the apprentice's answer:	
Carry out diagnostic checks for a range of faults (O & Q)	☐
Write down the question asked and the apprentice's answer:	
Carry out repair and rectification procedures to deal with a range of faults (O)	☐
Select, as required, electrical equipment, cables/wiring and components and confirm that they are: a) of the right type and size (O)☐ b) fit for purpose in accordance with the plumbing and domestic heating system's design (O)☐	☐
All Pass descriptors achieved	☐
Assessor comments to justify the evidence seen and KSBs achieved:	
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.

Task D Pass: Apprentices must demonstrate ALL of the pass descriptors	Check the box if achieved
Carry out a soundness test (O)	☐
Describe operational checks required during commissioning (O & Q)	☐
Write down the question asked and the apprentice's answer:	
Identify the range of information that would be detailed on commissioning documentation (O)	☐
Identify actions that must be taken when commissioning reveals defects (O)	☐
Describe the procedure for handing over to the customer (O & Q)	☐
Write down the question asked and the apprentice's answer:	
Carry out commissioning procedures for hot water systems(O & Q)	☐
Write down the question asked and the apprentice's answer:	
All Pass descriptors achieved	☐
Assessor comments to justify the evidence seen and KSBs achieved:	
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.	

PDHT –Practical Application Test (PAT) Summary Report

In the box below the independent assessor should:

1) Provide comments explaining their reasoning for the overall preliminary Fail or Pass grade awarded for this PAT assessment. This may include comments on the apprentice's knowledge, skills or performance and should relate to specific topics in the practical application test.
2) **Provide feedback if the apprentice has failed**, identifying the areas which were lacking and need improvement.

Independent Assessor Justification and Feedback:		
Preliminary Grade	**Fail ☐**	**Pass ☐**

By signing below, I confirm that the information provided is correct and the preliminary grade awarded is a true reflection of the performance by the apprentice:

Independent Assessor Signature		**Date:**

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:

- review the apprentice's work log before the professional discussion
- check the jobs in the work log should align with the six sections in this document
- conduct a professional discussion with the apprentice which must be 30 minutes
- spend approximately five minutes per section in which the apprentice can tell the assessor about how they carried out the selection/planning; pipework and installation; testing and fault-finding; commissioning, service/maintenance and demonstrated the behaviours required by the standard
- base their review of the jobs on the work log:
    - use the Assessor Comment section to provide your overall assessment of the apprentice's evidence for that particular element of the work
    - write down the question that is to be asked during the professionalism discussion to give the apprentice the opportunity to showcase their achievement

For sections 1 to 5, the assessor may allocate between 0 and 3 marks using the criteria:

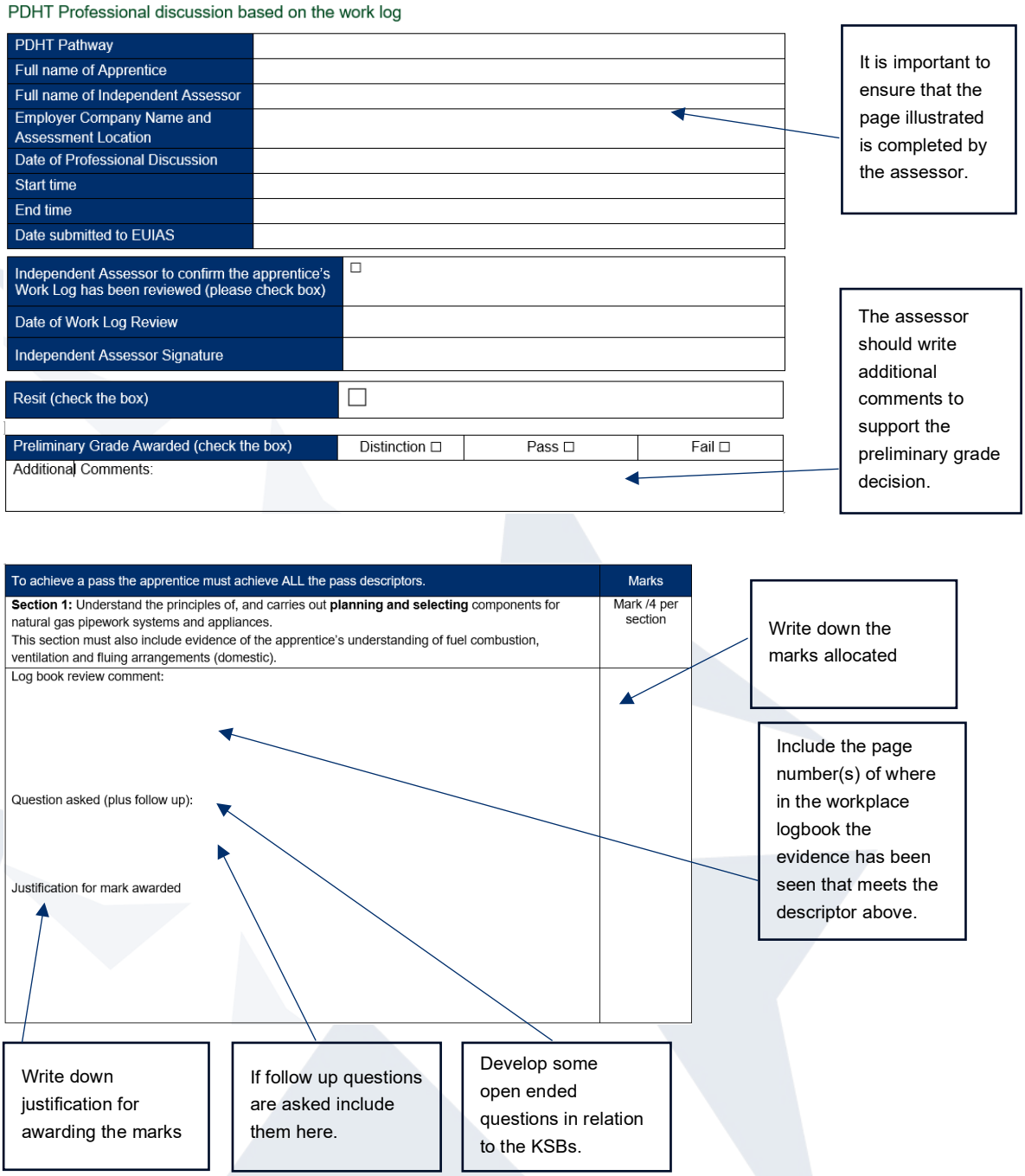
3 marks – apprentice provided complete assurance of their competence; 2 marks – apprentice provided acceptable level of assurance of competence; 1 mark –

apprentice provided limited assurance of competence; 0 marks – apprentice provided no assurance of competence

For section 5, up to 5 marks are available for coverage of the specified behaviours.

The pass mark for the Professional Discussion is 12 marks out of 20 **AND** at least one mark in each section.

Quick Tip – How to complete the form below:



Component 5: Professional Discussion – At the end of this form complete the preliminary grade awarded.

Plumbing and Domestic Heating Technician –Professional Discussion Checklist and Summary Record	Marks scored in each section
Section 1: Planning and selecting (/3)	
Section 2: Pipework and installation (/3)	
Section 3: Testing and fault finding (/3)	
Section 4: Commissioning (/3)	
Section 5: Service and maintenance (/3)	
Section 6: Behaviours (/5)	
Total: (/20)	
< 12 marks **Preliminary Grade: Fail**	☐
12 or more marks and at least one mark in each section **Preliminary Grade: Pass**	☐

The assessor must allocate marks for sections 1 -6.

The assessor must provide a total score/20.

The assessor must allocate a preliminary grade.

PDHT Professional discussion based on the work log

PDHT Pathway	
Full name of Apprentice	
Full name of Independent Assessor	
Employer Company Name and Assessment Location	
Date of Professional Discussion	
Start time	
End time	
Date submitted to EUIAS	

Independent Assessor to confirm the apprentice's Work Log has been reviewed (please check box)	☐
Date of Work Log Review	
Independent Assessor Signature	

Resit (check the box)	☐

Preliminary Grade Awarded (check the box)	Distinction ☐	Pass ☐	Fail ☐
Additional Comments:			

To achieve a pass the apprentice must achieve ALL the pass descriptors.	Marks
Section 1: Understand the principles of, and carries out **planning and selecting** components for pipework systems and appliances. This section must also include evidence of the apprentice's understanding of fuel combustion, ventilation and fluing arrangements (domestic).	Mark /3 per section
Log book review comment: Question asked (plus follow up): Justification for mark awarded	

Section 2: Understand the principles of, and carries out **pipework and installation** of pipework systems and appliances	Mark /3 per section
Log book review comment: Question asked (plus follow up): Justification for mark awarded:	

Section 3: Understand the principles of, and carries out **testing and fault finding** on pipework systems and appliances	Mark /3 per section
Log book review comment: Question asked (plus follow up): Justification for mark awarded:	

Section 4: Understand the principles of, and carries out **commissioning** of pipework systems and appliances	Mark /3 per section
Log book review comment: Question asked (plus follow up): Justification for mark awarded:	

Section 5: Understand the principles of, and carries out **service and maintenance** of pipework systems and appliances	Mark /3 per section
Log book review comment: Question asked (plus follow up): Justification for mark awarded:	

Section 6: Demonstrates the **behaviours** of honesty and integrity; dependable and responsible; enthusiasm and positive attitude; quality focus; willingness to learn; working with others, sustainable working	Mark /5 per section
Log book review comment: Question asked (plus follow up): Justification for mark awarded:	

Plumbing and Domestic Heating Technician –Professional Discussion Checklist and Summary Record	Marks scored in each section
Section 1: Planning and selecting (/3)	
Section 2: Pipework and installation (/3)	
Section 3: Testing and fault finding (/3)	
Section 4: Commissioning (/3)	
Section 5: Service and maintenance (/3)	
Section 6: Behaviours (/5)	
Total: (/20)	
< 12 marks **Preliminary Grade: Fail**	☐
12 or more marks and at least one mark in each section **Preliminary Grade: Pass**	☐

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)

Provide quality examples to demonstrate the evidence listed in the contents page 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	**Planning and selecting:** Principles of planning and selecting components for pipework systems and appliances This section must also include evidence of the apprentice's understanding of fuel combustion, ventilation and fluing arrangements (domestic).	
2	**Pipework and installation** Principles and practice of **pipework and installation** of pipework systems and appliances	
3	**Testing and fault finding** Principles of and carries out **testing and fault finding** on pipework systems and appliances	
4	**Commissioning** Principles of, and carries out **commissioning** of pipework systems and appliances	
5	**Service and maintenance** Principles of, and carries out **service and maintenance** of pipework systems and appliances	
6	**Behaviours** Demonstrates the **behaviours** of honesty and integrity; dependable and responsible; enthusiasm and positive attitude; quality focus; willingness to learn; working with others, sustainable working	

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: Place this workplace logbook mapping document at the front of the apprentice's workplace logbook of evidence.

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

Section 1: Planning and selecting	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
	1	2	3
Understand the principles of, and carries out **planning and selecting** components for pipework systems and appliances. This section must also include evidence of the apprentice's understanding of fuel combustion, ventilation and fluing arrangements (domestic).			

Section 2: Pipework and installation	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
	1	2	3
Understand the principles of, and carries out **pipework and installation** of pipework systems and appliances			

Section 3: Testing and fault finding	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
	1	2	3
Understand the principles of, and carries out **testing and fault finding** on pipework systems and appliances			

Section 4: Commissioning	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
	1	2	3
Section 4: Understand the principles of, and carries out **commissioning** of pipework systems and appliances			

Section 5: Service and maintenance	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
	1	2	3
Understand the principles of, and carries out **service and maintenance** of pipework systems and appliances			

Section 6: Behaviours	Workplace Logbook EVIDENCE REFERENCE (Apprentice Input)		
	1	2	3
Demonstrates the **behaviours** of honesty & integrity; dependable and responsible; enthusiasm and positive attitude; quality focus; willingness to learn; working with others, sustainable working			