

Level 3 Diplomas in Domestic Heating (6189-41/42/43)

Candidate logbook/workplace evidence record



www.cityandguilds.com
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Level 3 Diplomas in Domestic Heating (6189-41/42/43)

Candidate logbook/workplace evidence record

Title and level	City & Guilds number	Accreditation number
Level 3 NVQ Diploma in Domestic Heating	6189-41	600/1473/8
Level 3 NVQ Diploma in Domestic Heating (Gas Fired Warm Air Appliances)(EUSGU0021)	6189-42	600/1116/6
Level 3 NVQ Diploma in Domestic Heating (Gas Fired Water and Central Heating Appliances) (EUSGU0022)	6189-43	600/1117/8

Version and date	Change detail	Section
1.1 Jan 2012	Amend rules of combination	Overall Unit Sign-Off

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1 About your candidate logbook/ workplace evidence record

1.1 Contact details

Candidate name	
Centre name	
Centre number	
Programme start date	
City & Guilds registration number	
Date of registration with City & Guilds	

Keep a record of relevant contact details in the space provided below. You may find it helpful to make a note of phone numbers and e-mail addresses here.

Your Assessor(s)	
Your Internal Verifier/IQA	
Quality Assurance Contact	

1 About your candidate logbook/ workplace evidence record

1.2 Introduction to the logbook/ workplace evidence record

This logbook will help you complete the units in City & Guilds' **Level 3 Diplomas in Domestic Heating (6189-41/42/43)**. It contains forms you can use to record your evidence of achievement of the practical units.

The units highlighted in grey in the Overall Unit sign-off sheet are the Level 3 practical units to be completed in this document. This logbook does not include the practical Gas units which are assessed by City & Guilds' partner, Blue Flames.

The logbook will also help you to track your overall achievement of all the units for these qualifications including completed assessments and online tests.

About City & Guilds

City & Guilds is your awarding body for this qualification. City & Guilds is the UK's leading awarding body for vocational qualifications.

Information about City & Guilds and our qualifications is available on our website **www.cityandguilds.com**.

2 The assessment process

Assessment requirements

A minimum of two direct observations (DO) should be conducted in the workplace by your Assessor. For individual criteria not directly observed, evidence should be logged in supplementary evidence to cover all remaining criteria.

Types of evidence

DO = Direct Observation

Q = Oral Question (OQ) or Written Question & answer (WQ)

WT = Witness testimony

PA = Product Assessment

PR = Professional Review

The following people at your centre will explain the assessment process and help you achieve your unit(s).

The assessor/tutor

The assessor/tutor is the person you will have the most contact with as you work towards your unit(s). You may have more than one assessor/tutor depending on which unit(s) you take or you may be assessed by a person who is not your tutor.

The internal verifier /IQA

The internal verifier maintains the quality of assessment within the centre.

The external verifier /QC

The external verifier works for City & Guilds and helps to ensure that your centre meets the required standards for quality and assessment.

3 About your approved centre

Types of approved centres

Assessment for your qualification will be carried out at your centre. Your centre may be your place of work, a college, training provider or a combination of these.

City & Guilds approves centres to offer their qualifications and regularly monitors them to make sure they meet our quality standards and follow our assessment policies.

Centre responsibilities

Your centre is responsible for the administration of your qualification. Centre staff will

- register you with City & Guilds
- give you your City & Guilds enrolment number
- apply for your certificate(s) when you have completed your qualification or units.

Centres are also responsible for supporting you as you work towards your NVQ. Centres will

- carry out an initial assessment with you
- tell you about any learning or training (and resources) you will need to help you complete your qualification
- provide an induction programme to explain how the assessment process works
- produce an assessment plan for you.

Assessment roles

The following people at your centre will help you achieve your qualification.

The assessor

The assessor is the person you will have the most contact with as you work towards your qualification. Your assessor will

- help you identify any training you need
- agree an assessment plan with you
- help you plan and organise your workload and evidence
- observe you carrying out your job in the workplace over a period of time
- ask you questions about the work you do
- make decisions about your evidence
- judge when you are competent and meet the national standards
- give you feedback about your evidence and competence.

You may have more than one assessor depending on which units of the qualification you take.

The internal verifier/IQA

The internal verifier maintains the quality of assessment within the centre.

The mentor

A mentor is someone in your workplace who can help and support you as you are working towards your qualification but does not carry out assessments. They may be able to provide you with witness testimony for your qualification.

Witness

Witnesses do not judge your overall competence but may provide you with statements about your performance which can be used as evidence of your work.

4 About candidates

Candidate role and responsibilities

Your responsibilities as a City & Guilds candidate are to

- provide your centre with your personal details so you can be registered with City & Guilds
- participate in an initial assessment and induction
- agree a personal assessment plan with your assessor
- collect and organise your evidence as agreed in your assessment plan
- attend regular meetings with your assessor to discuss your progress and to amend your plan when required
- meet with other centre and City & Guilds staff to talk about your qualification and evidence
- make sure you understand and comply with Health and Safety law and regulations.

Your centre **may** ask you to agree and sign a learning contract with them to show how you will be assessed for your qualification.

Candidate registration number

Make sure you keep a note of your unique City & Guilds registration number on the front page of this logbook.

Moving to a new centre

If you change jobs or move to a new centre before you complete your qualification, you may be able to complete it at a new centre. Ask your centre to apply for any certificates of unit credit for you before you leave, and add them to your records.

A new centre will need your candidate enrolment number, your assessment records and evidence to help you complete your qualification.

5 The assessment process

5.1 Before you start your qualification

Initial assessment

Before you start work on your qualification you will meet with your assessor to discuss what you need to do to complete your qualification. This can include

- checking you are taking the right qualification level
- checking you have chosen suitable units
- identifying any training or learning you will need to help you gain your qualification
- agreeing an assessment plan
- signing a learning contract.

Skill scan

As part of this meeting, you will discuss the skills and knowledge you may already have, and decide how this can be used towards your qualification. This process is sometimes called a Skill scan. There is a skill scan form in this logbook you can use to record the skills you may already have.

6 The assessment process

5.2 Qualification assessment

The assessment process

Once you have chosen your units you will make and agree an assessment plan with your assessor. This will show

- the units the plan covers
- when you will be assessed
- where the assessment will take place
- what you will be doing
- what evidence you will produce
- who will assess you.

The plan should also indicate the methods of assessment to be used to collect your evidence.

Evidence can include

- direct observation in the workplace by a qualified assessor
- witness testimony of work carried out by you in the workplace written by an expert witness
- questioning – this could be verbal, written or computer based
- other evidence which can include photographs or personal accounts.

Your centre will explain the different types of evidence to you in more detail. There is an assessment plan form you can use in this logbook.

6 Using your logbook/workplace evidence record

Recording forms

This logbook contains all of the forms you and your assessor will need to plan, review and organise your evidence. Your assessor will be able to help you decide which forms you need to complete and help you fill them in.

Candidate job profile

You can use this form to record your personal details if you don't already have a Candidate résumé/ CV.

Skill scan/Initial assessment

This can be used to record the skills and knowledge you may already have. This may be part of your initial assessment.

Overall unit sign-off

You can use this form to log your achievement of the units for the whole qualification including completion of assignments and online assessment

Onsite Assessment Plan/Feedback

You and your assessor will use this form to plan each assessment session. Your assessor will use this form to give feedback on the task. It will also enable you and your assessor to plan what actions need to be done before the next session.

On site Observation Report

Your assessor will complete during observation. You will both sign this as a true record.

Supplementary Evidence Sheet

To be completed by you, your workplace recorder or another witness to evidence meeting assessment criteria that could not be signed off during direct observation with your assessor.

Oral Questioning Supplementary Evidence Sheet

Your assessor will use this form to log any additional questions and answers asked during observation or to mop up any missing evidence.

Photographic Supplementary Evidence

Use this form to include a photo and brief description of the task being carried out.

Workplace recorder details

To be completed by your Workplace recorders to confirm occupational competence.

Assessor Briefing and Report Continuation Sheet

Additional space for your assessor to make notes

Signature sheet

This is used to record the details of staff that will provide you with witness testimony.

Units

These record where the evidence you produce meets the requirements of the unit. You should give each piece of evidence an evidence reference number.

Please photocopy these forms as many times as required to log the evidence.

Candidate job profile



If you already have your own CV you can use that instead of this form.

Name:

Place of Work:

Assessor:.....

Outline of job role

Previous roles & responsibilities relevant to the qualification:

Previous qualification and training relevant to the qualification:

Overall Unit Sign-off

Rules of combination for **Level 3 NVQ Diploma in Domestic Heating (6189-41)**,

Learners must achieve **48** credits from the mandatory group mandatory units;

- plus a minimum of 29 credits from the **Oil Firing Fuel pathway** (16 credits from the mandatory Oil Firing pathway units plus 13 credits from the Oil Firing Pressure Jet Appliances route or 13 credits from the Oil Firing Vaporising Appliances route)
- or a minimum of 29 credits from the **Solid Fuel pathway** (16 credits from the core mandatory Solid Fuel pathway units plus 13 credits from the Solid Mineral Fuel route or 15 credits from the Biomass Fuel route) or
- or 12 credits from the **Environmental pathway** (2 credits from the core mandatory unit in the Environmental pathway plus 10 credits from the Solar Thermal route or 10 credits from the Heat Pumps route or 10 credits from the Water Recycling route)

City & Guilds unit	Unit title	Assessment Type	Unit Achieved Yes/No	Assessor Initials	Date
Core Mandatory group					
301	Understand how to organise resources within BSE	Online			
302/012	Understand and apply domestic cold water system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
303/023	Understand and apply domestic hot water system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
304/024	Understand and apply domestic central heating system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
305/025	Understand and carry out electrical work on domestic plumbing and heating systems and components	Assignment			
		Online			
306	Install, commission, service and maintain domestic heating systems	Performance			

Oil Firing Pathway

City & Guilds unit	Unit title	Assessment Type	Unit Achieved Yes/No	Assessor Initials	Date
Mandatory within pathway					
307	Understand core oil firing safety principles within domestic building services engineering	Online			
308	Apply core oil firing safety within domestic building services engineering	Performance			

Oil firing pressure jet appliances (option within pathway)					
309	Understand the principles of domestic oil firing pressure jet appliances	Assignment			
		Online			
310	Service and maintain domestic oil firing pressure jet appliances	Performance			
311	Install, test and commission domestic oil firing pressure jet appliances	Performance			
Oil firing vaporising appliances (option within pathway)					
312	Install, test and commission domestic oil firing vaporising appliances	Performance			
313	Service and maintain domestic oil firing vaporising appliances	Performance			
314	Understand the principles of domestic oil firing vaporising appliances	Online			

Solid Fuel Pathway

City & Guilds unit	Unit title	Unit Type	Unit Achieved Yes/No	Assessor Initials	Date
Mandatory within pathway					
315	Understand core solid fuel safety principles within domestic building services engineering	Online			
316	Apply core solid fuel safety within domestic building services engineering	Performance			
Solid Mineral Fuel (option within pathway)					
317	Service and maintain domestic solid mineral fuel burning appliances	Performance			
318	Understand the principles of domestic solid mineral fuel burning appliances	Online			
319	Install, test and commission domestic solid mineral fuel burning appliances	Performance			
Biomass Fuel (option within pathway)					
320	Service and maintain domestic biomass fuel burning appliances	Assignment			
321	Install, test and commission domestic biomass fuel burning appliances	Assignment			
322	Understand the installation and commissioning principles of biomass fuel burning appliances	Online			
323	Understand the service and maintenance principles of biomass fuel burning appliances	Online			

Environmental Pathway

City & Guilds unit	Unit title	Unit Type	Unit Achieved Yes/No	Assessor Initials	Date
Mandatory within pathway					
324	Understand the fundamental principles and requirements of environmental technology systems	Online			
Solar Thermal Route (option within pathway)					
325	Know the requirements to install, commission and handover solar thermal hot water systems	Online			
326	Install, commission and handover 'active' solar thermal hot water systems	Assignment			
327	Know the requirements to inspect, service and maintain 'active' solar thermal hot water systems	Online			
328	Inspect, service and maintain 'active' solar thermal hot water systems	Assignment			
Heat Pumps Route (option within pathway)					
329	Install, commission and handover heat pumps non-refrigerant circuits	Assignment			
330	Know the requirements to inspect, service and maintain heat pump system installations non-refrigerant circuits	Online			
331	Inspect, service and maintain heat pump installations non-refrigerant circuits	Assignment			
332	Know the requirements to install, commission and handover heat pump systems non-refrigerant circuits	Online			
Water Recycling Route (option within pathway)					
333	Inspect, service and maintain rainwater harvesting and greywater reuse systems	Assignment			
334	Install, commission and handover rainwater harvesting and greywater reuse systems	Assignment			
335	Know the requirements to inspect, service and maintain rainwater harvesting and greywater reuse systems	Online			
336	Know the requirements to install, commission and handover rainwater harvesting and greywater reuse systems	Online			

Rules of combination for Level 3 NVQ Diploma in Domestic Heating (Gas fired warm air appliances) (EUSGU0021) (6189-42)

Learners must achieve **127** credits from the mandatory units

Note: Completion of this Qualification Combination will enable Gas Registration in the following categories: CCN 1, DAH 1, CPA 1, CMDDA 1, Pipework up to 35mm

City & Guilds unit	Unit title	Unit Type	Unit Achieved Yes/No	Assessor Initials	Date
Mandatory units					
212	Tightness test, purge, commission and de-commission gas pipework up to 35mm 1¼ diameter in small natural gas installations	Performance (Gas)			
301	Understand how to organise resources within BSE	Online			
302/012	Understand and apply domestic cold water system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
303/023	Understand and apply domestic hot water system installation, commissioning, service and maintenance techniques	Performance			
		Online			
304/024	Understand and apply domestic central heating system installation, commissioning, service and maintenance techniques	Performance			
		Online			
305/025	Understand and carry out electrical work on domestic plumbing and heating systems and components	Performance			
		Online			
306	Install, commission, service and maintain domestic heating systems	Performance			
337	Install, commission and de-commission gas pipework up to 35mm 1¼ diameter in domestic and small commercial premises	Performance (Gas)			
338	Specific core installation and maintenance	Performance (Gas)			
339	Understand core gas safety principles for natural gas within domestic building services engineering	Assignment			
340	Maintain gas warm air central heating systems and appliances	Performance (Gas)			
341	Install domestic gas warm air central heating appliances	Performance (Gas)			

Rules of combination for Level 3 NVQ Diploma in Domestic Heating (Gas fired water and central heating appliances) (EUSGU0022) (6189-43)

Learners must achieve **138** credits from the mandatory units

Note: Completion of this Qualification Combination will enable Gas Registration in the following categories: CCN 1, CENWAT 1, CPA 1, CMDDA 1, Pipework up to 35mm

City & Guilds unit	Unit title	Unit Type	Unit Achieved Yes/No	Assessor Initials	Date
212	Tightness test, purge, commission and de-commission gas pipework up to 35mm 1¼ diameter in small natural gas installations	Performance (Gas)			
301	Understand how to organise resources within BSE	Online			
302/012	Understand and apply domestic cold water system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
303/023	Understand and apply domestic hot water system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
304/024	Understand and apply domestic central heating system installation, commissioning, service and maintenance techniques	Assignment			
		Online			
305/025	Understand and carry out electrical work on domestic plumbing and heating systems and components	Assignment			
		Online			
306	Install, commission, service and maintain domestic heating systems	Performance			
337	Install, commission and de-commission gas pipework up to 35mm 1¼ diameter in domestic and small commercial premises	Performance (Gas)			
338	Specific core installation and maintenance	Performance (Gas)			
339	Understand core gas safety principles for natural gas within domestic building services engineering	Assignment			
342	Maintain gas water heating and wet central heating appliances	Performance (Gas)			
343	Install domestic gas water heaters and wet central heating appliances	Performance (Gas)			

Declaration

I confirm that the evidence supplied for the above selected units is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of the selected units with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

On Site Assessment Plan / Feedback



Evidence Reference:	
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Qualification:
Level:

Qualification number:

Candidate name:
Assessor name:

Date:

Candidate prepared for assessment (Provide details below)	Yes / No	Candidate requires support	Yes / No
Candidate briefed on appeals procedure	Yes / No	Support required	

Assessment Location / Address and postcode:

Type of work to be carried out:

Assessor Feedback:
(Use Assessor continuation sheet if required)

Forward Planning:

Candidate Signature:		
Assessor Signature:		Date:
IV/IQA Name:	IV/IQA Signature:	Date:

Photographic Supplementary Evidence



Evidence Reference:	
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Scheme / Award:

Scheme Number:

Level:

Candidate Name:

Unit Number:

Brief description of task being carried out in the photograph (to be completed by candidate):

(Attach Photo in this Box)

Location of photograph:

Candidate Signature:		
Assessor Signature:		Date:
IV/IQA Name:	IV/IQA Signature:	Date:

Workplace Recorder Details



If a workplace recorder is to be used to confirm your competence in the workplace (system to be agreed by centre assessor) then to meet the requirements of the plumbing industry qualification assessment strategy (as agreed by the key industry bodies) he/she must be qualified or suitably experienced: He / she must have ONE of the following : a minimum of 5 years full time work experience in plumbing employment, or an NVQ Level 3 in Plumbing, or a craft certificate in plumbing issued by City & Guilds, or been graded as a trained plumber by the JIB. The designated workplace recorder should ordinarily be your immediate work supervisor. It is recognised that over the lifetime of the qualification you may be allocated more than one workplace recorder. The requirements detailed below therefore MUST be completed by each workplace recorder allocated to you.

I confirm I am suitably experienced or qualified in line with the industry requirements for workplace recorders detailed above. I acknowledge that I will only counter sign documentation requested by the candidate where to my knowledge only the candidate has completed the work and on the understanding that the work has been carried out to a commercially acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

I confirm that I am suitably experienced or qualified in line with the industry requirements for workplace recorders detailed above. I acknowledge that I will only counter sign documentation requested by the candidate where to my knowledge only the candidate has completed the work and on the understanding that the work has been carried out to a commercially acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

I confirm that I am suitably experienced or qualified in line with the industry requirements for workplace recorders detailed above. I acknowledge that I will only counter sign documentation requested by the candidate where to my knowledge only the candidate has completed the work and on the understanding that the work has been carried out to a commercially acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

**Assessor Continuation Sheet
 On Site Assessment Plan/Feedback
 On Site Observation**



Evidence Reference:	
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Candidate Signature:		
Assessor Signature:		Date:
IV/IQA Name:	IV/IQA Signature:	Date:

Unit 306

Install, commission, service and maintain domestic heating systems

Level: 3

Credit value: 3

UAN: A/502/8933

Unit aim:

This performance unit is to demonstrate the correct selection of system types and components, the installation of domestic heating and hot water systems, the commissioning, diagnostic of faults and the rectification of those faults. The correct preparation of the working area for all such work must also be demonstrated.

Outcome 1	Be able to select domestic heating and hot water systems and components for application in the workplace			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	obtain details of the customer job requirement:			
	a. by face to face site visit			
	b. by taking details from plans, drawings and specifications			
2	discuss and agree initial system and component options with the customer:			
	a. hot water systems			
	b. central heating systems			
3	calculate the size and quantities of components required for systems installation			
4	present design calculations and information to the customer			
5	obtain agreement from the customer to progress domestic heating and hot water work:			
	a. items of small jobbing (maintenance) type work			
	b. full system/component installation work			
6	apply changes to customer job requirements and obtain customer agreement to those changes			

Outcome 2	Be able to prepare work sites for the installation of domestic heating and hot water systems and components in the workplace			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use job information to plan the installation work			
2	confirm the position of pipework and components with other persons before commencing the installation work			
3	comply with health and safety requirements when carrying out the installation work			
4	prepare a safe and unobstructed access route to the work areas to carry out the installation work			
5	arrange for all tools, equipment and materials to be available to undertake the installation work			
6	use job information to identify the location of the building fabric that requires preparatory work to be carried out			
7	report any pre-existing damage to the building fabric or customer property to other persons before carrying out the installation work			
8	provide protection to the building fabric or customer property as the work progresses			
9	carry out preparatory work to the building fabric.			

Outcome 3	Be able to install domestic heating and hot water systems and components in the workplace			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	confirm that the incoming main supplies meet the requirements of the system or component being installed			
2	measure and mark out the position of the components to be installed:			
	a. system pipework			
	b. main system components			
	c. system controls			
3	make pipework and component fixings to the building fabric			
4	position and fix pipework and components to the building fabric:			
	a. copper			
	b. plastics			
5	connect pipework to system controls and main components:			
	a. hot water systems			
	b. central heating systems			
6	connect system pipework to incoming supplies			
7	carry out installation work minimising the wastage of equipment and materials			
8	take precautions to ensure that the system cannot be brought into operation before the installation work is fully completed.			

Outcome 4	Be able to commission domestic heating and hot water systems in the workplace			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a visual inspection of the system to be tested to make sure that it is ready to be filled with water			
2	charge the system to normal operating pressure and check for leakage:			
	a. hot water systems			
3	b. central heating systems			
	perform a soundness test to industry requirements on the installed system:			
4	a. hot water systems			
	b. central heating systems			
5	flush the system with cold water on completion of soundness testing			
6	rectify any leakage from the system found during the soundness test procedure			
7	re-fill the system treating the contents with additives as appropriate			
8	operate the system and take performance readings in order to compare them to the design specifications:			
	a. mechanical component readings			
9	b. electrical component readings			
	adjust system controls to establish that the system operates to its design specifications			
10	carry out remedial work to systems when commissioning reveals that the system does not work to the design specifications			
11	prepare commissioning records for completed systems			
12	instruct the customer in the efficient and effective operation of the system.			

Outcome 5	Be able to diagnose faults in domestic heating and hot water components in the workplace			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use job information to plan the fault diagnosis work			
2	comply with health and safety requirements when carrying out fault diagnosis work			
3	prepare a safe and unobstructed access route to the work areas to carry out the fault diagnosis work			
4	arrange for all required tools, equipment and materials to be available to undertake the fault diagnosis work			
5	report any pre-existing damage to the building fabric or customer property to other persons before carrying out the fault diagnosis work			
6	provide protection to the building fabric or customer property as the work progresses			
7	establish details of the fault from other persons			
8	test the component to diagnose the cause of the fault.			

Outcome 6		Be able to rectify faults in domestic heating and hot water components in the workplace		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	liaise with other persons to reach agreement on the rectification work to be carried out			
2	isolate unsafe components that are not to be rectified and leave the component in a safe condition			
3	isolate the component from the supply source:			
	a. turn off the electricity supply and fuel supply source to the component			
	b. turn off the water supply to the component			
4	drain the component contents			
5	take precautions to ensure that the component cannot be brought back into operation before the rectification work is complete			
6	carry out the rectification or replacement of the component to industry requirements			
7	reinstate the supply or service to the component			
8	test the component for effective operation			
9	advise other persons that work on the system or component has been successfully completed			
10	complete the details contained in a maintenance record for the system or component.			

Unit 306

Install, commission, service and maintain domestic heating systems

Declaration

I confirm that the evidence supplied for the above listed unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 308

Apply core oil firing safety within domestic building services engineering

Level: 3

Credit value: 4

UAN: L/502/9391

Unit aim:

This performance unit is to enable learners to demonstrate occupational competence in: tank installations, pipework systems and fittings, testing, fault diagnosis & rectification; the correct selection and ventilation requirements along with the suitability of chimneys and flues; unsafe situations procedures.

Outcome 1	Be able to identify correct and incorrect oil storage tank installations			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a risk assessment to determine the type of oil storage tank required:			
	a. existing system with incorrect single skin tank			
	b. new installation requiring secondary containment			
2	confirm that the proposed tank installation location meets standards requirements for fire protection:			
	a. external tanks			
	b. internal tanks			
	c. underground tanks			
3	confirm that the tank base construction meets standards requirements:			
	a. polyethylene tank at ground level			
	b. polyethylene tank on piers			
	c. steel tank on piers			
4	confirm that the tank filling and vent fittings have been correctly installed			
5	confirm that the contents gauge has been fitted and is operating correctly			
6	confirm that the oil and sludge connection has been correctly made:			
	a. drain valve			
	b. isolation valve			
	c. oil filter			

Outcome 2		Be able to identify oil supply pipework systems and fittings		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	confirm the type of oil supply system installed in a dwelling:			
	a. single pipe gravity system			
	b. single pipe system with oil lifter			
	c. single pipe suction system with de-aerator			
2	confirm the name/type of oil supply line components for given installations:			
	a. filters			
	b. fire valves			
	c. oil lifters			
	d. anti-syphon valves			
	e. pressure reducing valves			
	f. de-aerators			

Outcome 3		Be able to install oil supply pipework and fittings		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	cut and joint R220 soft copper pipework using Type B manipulative flared fittings			
2	carry out a visual inspection of an oil pipework system to confirm its correct installation:			
	• correct installations			
	• incorrect installations			
3	make connections from an existing oil supply line to oil supply components, citing all components correctly:			
	a. oil filter			
	b. de-aerator			
	c. fire valve			

Outcome 4		Be able to test oil pipework for soundness		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a visual inspection on an oil supply line:			
	a. confirming that it is installed to standards requirements			
	b. confirming that it is ready to be soundness			
2	carry out a soundness test on an oil supply line to confirm that it is leak free			
3	trace leaks in defective oil supply lines and make repairs			
4	fill and purge air from the oil pipework system on completion of soundness testing			

Outcome 5		Be able to carry out fault diagnosis and rectification procedures on oil supply systems		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	obtain details of the fault from the end user and from diagnostic information			
2	carry out diagnostic tests to locate faults in oil supply systems and carry out repair work:			
	a. incorrect oil type, water in the storage tanks or no oil stored in the tank			
	b. no oil or poor oil flow:			
	c. unauthorised isolation of supply line valves			
	d. air lock in supply line			
	e. blockage in oil filter			
	f. blockage/defect in de-aerator			
	g. defect in the fire valve			

Outcome 6		Be able to select and install ventilation for oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	calculate the ventilation requirements (free area of air vent) for oil fired appliances from on-site information:			
	a. single open flued appliances			
	b. single open flued appliances with draught stabilisers			
	c. multiple open flued appliances			
2	calculate the compartment ventilation requirements for oil fired appliances from on-site information:			
	a. open flued appliances			
	b. room sealed appliances			
3	determine by measurement and calculation the free area of grilles and ventilators to supply combustion air and compartment ventilation to oil fired appliances:			
	a. marked ventilators and grilles			
	b. unmarked ventilators and grilles			
4	determine the suitability of grilles and vents to provide combustion air and compartment ventilation:			
	a. grille/vent construction			
	b. flyscreen not fitted/correctly sized			
	c. projection through walls including cavity walls			
	d. fixing arrangements			
5	confirm the correct positioning of grilles and ventilators to provide combustion air to open flued oil fired appliances:			
	a. open flued positioning			
	b. open flued incorrect positioning			
	c. combustion air supply to open flued appliances from adjacent rooms			
6	confirm the correct positioning of grilles and ventilators to provide air for compartment ventilation:			
	a. open flued - correct and incorrect positioning			
	b. room sealed - correct and incorrect positioning			

Outcome 7		Be able to check the suitability of chimneys and flue systems		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	confirm the parts of a flue system from an existing installation:			
	a. appliance with open flue system			
	b. appliance with room sealed flue system			
2	confirm the type of open flue system installed:			
	a. brick masonry chimneys – with/without liners			
	b. rigid flues – metallic and non-metallic including single and double skin			
3	confirm the suitability of the chimney/flue for use with an open flued oil fired appliance:			
	a. flue chimney soundness and construction			
	b. flue materials			
	c. flue draught stabiliser (if fitted)			
	d. appliance connection to flue/chimney			
	e. flue proximity to combustible materials			
	f. flue length and routing – internal/external			
	g. flue jointing methods and materials			
	h. flue supports			
	i. flue inspection points are provided (where required)			
	j. flue connection to termination point			
	k. selection of correct flue terminal			
4	confirm that the flue outlets (terminals) of open flued appliances are correctly positioned:			
	a. correctly positioned terminals			
	b. incorrectly positioned terminals			
5	confirm the type of room sealed flue system that is installed			
6	confirm the suitability of the flue system for use with the room sealed appliance:			
	a. flue length, changes of direction and jointing methods conform to manufacturer requirements			

	b. flue connection to appliance			
	c. flue supports			
	d. flue proximity to combustible materials			
	e. flue inspection points are provided (where required)			
	f. flue connection to termination point			
	g. provision of plume kit (where required)			
7	confirm that the flue outlets (terminals) of room sealed appliances are correctly positioned:			
	a. correctly positioned terminals			
	b. incorrectly positioned terminals			
	c. provision of flue terminal guard			

Outcome 8		Be able to test oil fired appliance flue systems for effective operation		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out visual inspections of oil fired appliance flue systems to confirm their suitability prior to testing the operation of the flue system:			
	a. open flued – masonry lined and flue pipe system			
	b. room sealed			
2	carry out flue flow tests of open flue systems:			
	a. correctly operating flues			
	b. incorrectly operating flues			
3	carry out spillage tests of open flued appliances:			
	a. correctly operating appliances			
	b. incorrectly operating appliances			
4	carry out case seal integrity checks to natural draught room sealed appliances:			
	a. correctly sealed appliances			
	b. incorrectly sealed appliances			

Outcome 9	Be able to correctly respond to unsafe oil situations			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	perform safety checks on oil supplies and appliances to check for unsafe situations:			
	a. complete report forms – installation and service			
	b. complete landlords safety report form			
2	inspect and apply the unsafe situations procedure to oil supplies and appliances:			
	a. immediate risks – safety and environmental			
	b. potential risks – safety and environmental			
3	label systems, appliances and components as appropriate			
4	isolate appliances as appropriate			

Unit 308

Apply core oil firing safety within domestic building services engineering

Declaration

I confirm that the evidence supplied for the above listed unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 310

Service and maintain domestic oil firing pressure jet appliances

Level: 3

Credit value: 3

UAN: M/502/9402

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in the servicing, commissioning and decommissioning of appliances, and to be able to diagnose and rectify faults.

Outcome 1	Be able to diagnose faults and carry out rectification work on pressure jet oil fired appliances			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a visual inspection of existing pressure jet oil fired appliances to confirm that they are installed to manufacturer/standard's requirements			
2	isolate pressure jet oil fired appliances to prevent them being brought into operation before the work has been fully completed			
3	carry out periodic servicing to oil fired pressure jet appliances in accordance with manufacturer instructions			
4	use manufacturer instructions and industry standards to establish the diagnostic requirements of oil fired pressure jet appliances			
5	carry out routine checks and diagnostics on pressure jet oil fired appliances as part of a fault finding process:			
	a. cleaning system components			
	b. checking for blockages/poor flow rate -heat exchanger -fuel supply system including oil nozzle			
	c. checking the flue system for correct operation			
	d. checking for provision of adequate ventilation to the appliance			
	e. checking for correct operation of pressure jet appliance burner components			

6	carry out fault identification and repair work on oil fired pressure jet burners:			
	a. oil pump defects/incorrect settings			
	b. solenoid defects			
	c. motor/fan defects			
	d. incorrect air shutter settings			
	e. nozzle – defects/incorrect selection			
	f. blast tube assembly – defects/positioning			
	g. ignition electrodes – defects/positioning			
	h. ignition transformer - defects			
	i. photoresistor - defects			
j. control box – defects				
7	re-commission appliances following completion of service/maintenance or fault repair activities.			

Outcome 2		Be able to commission pressure jet oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use information sources to identify the range of commissioning work required on pressure jet oil fired appliances			
2	carry out a visual inspection of pressure jet oil fired appliances and their associated supplies to confirm that they are ready to be commissioned:			
	a. oil storage tank			
	b. oil supply system – checked, filled and ready for operation			
	c. air supply – combustion and ventilation			
	d. flue system including hearth, proximity of combustible materials, flue termination and provision of flue draught stabiliser			
	e. pressure jet appliance – correct positioning and assembly of components such as flue baffles			
	f. water connections to the appliance – provision of suitable heating/hot water system controls, checked filled and ready for operation			
	g. electrical connection to the appliance – electrical testing has taken place and the appliance is ready for operation			

	h. appliance burner and controls – setting, positioning etc.			
3	carry out operational tests prior to appliance light up:			
	a. flue flow test (where required)			
4	carry out operational tests on initial appliance light up:			
	a. initial function of appliance burner			
	b. correct operation of burner safety controls			
	c. oil pressure readings, set and adjust the oil pump			
	d. initial readings to determine the cleanliness of combustion and adjust accordingly – smoke reading and flue draught			
	e. Flue operational tests – flue spillage (where required, flue draught interference test (where required)			
5	carry out appliance combustion efficiency tests and adjust/fine tune burner controls accordingly			
6	carry out checks to ensure that the appliance temperature controls are operating correctly:			
	a. appliance control thermostat			
	b. appliance energy cut-out device			
7	carry out checks to ensure that connected water heating systems are functioning correctly:			
	a. hot water systems			
	b. central heating systems			
8	complete the details contained in a commissioning record for pressure jet oil fired appliances.			

Outcome 3		Be able to decommission pressure jet oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	liaise with other persons to determine the decommissioning work to be carried out			
2	arrange for temporary heating to be available (if required) for the duration of decommissioning work			
3	isolate the appliance from the supply source:			
	a. turn off the electricity and fuel supply to the appliance and make safe			
	b. turn off the water supply to the system			
4	Drain and safely dispose of the system contents a. Central heating / hot water system b. Fuel supply system			
5	take precautions to ensure that the appliance cannot be brought back into operation before the decommissioning work is complete			
6	advise other persons that the appliance has been successfully decommissioned.			

Unit 310

Service and maintain domestic oil firing pressure jet appliances

Declaration

I confirm that the evidence supplied for the above listed unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 311

Install, test and commission domestic oil firing pressure jet appliances

Level: 3

Credit value: 3

UAN: Y/502/9393

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in understanding customer requirements by pre-installation inspections, and the installation, commissioning, and decommissioning of appliances.

Outcome 1	Be able to select pressure jet oil fired appliances to meet customers needs			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	select suitable pressure jet appliances meeting installation/standard requirements:			
	a. customers' needs/preference			
	b. provision of suitable flueing arrangements			
	c. suitable room/property location			
	d. proximity of combustible materials to the appliance			
	e. building layout and features – suitable appliance space			
	f. suitability of heating system			
	g. loadings placed on the oil fired appliance			
	h. energy efficiency legislation requirements			
	i. environmental impact			
2	calculate the size of pressure jet oil fired appliances required for a boiler replacement using the whole house boiler sizing method			

Outcome 2		Be able to install pressure jet oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a pre-installation inspection to determine that pressure jet appliances can be correctly installed:			
	a. appliance location/position			
	b. hearth provision			
	c. flueing arrangements and termination			
	d. appliance ventilation provision			
	e. fuel supply arrangements			
	f. condensate disposal arrangements			
	g. heating/hot water system provision			
	h. electrical connection arrangements			
2	position, fix and connect pressure jet oil fired appliances to manufacturer requirements:			
	a. assemble and position the appliance			
	b. make connections to, or assemble, the appliance flue system/connection			
	c. make connections to the heating/hot water system			
	d. position and fix the condensate disposal pipework			
	e. make final connections to the oil supply pipework			
	f. make final electrical connections to the central heating control system			
3	take precautions to ensure that the appliance cannot be brought into operation before the installation work is fully completed.			

Outcome 3		Be able to commission pressure jet oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use information sources to identify the range of commissioning work required on pressure jet oil fired appliances			
2	carry out a visual inspection of pressure jet oil fired appliances and their associated supplies to confirm that they are ready to be commissioned:			
	a. oil storage tank			

	b. oil supply system – checked, filled and ready for operation			
	c. air supply – combustion and ventilation			
	d. flue system including hearth, proximity of combustible materials, flue termination and provision of flue draught stabiliser			
	e. pressure jet appliance – correct positioning and assembly of components such as flue baffles			
	f. water connections to the appliance – provision of suitable heating/hot water system controls, checked filled and ready for operation			
	g. electrical connection to the appliance – electrical testing has taken place and the appliance is ready for operation			
	h. appliance burner and controls – setting, positioning etc			
3	carry out operational tests prior to appliance light up:			
	a. flue flow test (where required)			
4	carry out operational tests on initial appliance light up:			
	a. initial function of appliance burner			
	b. correct operation of burner safety controls			
	c. oil pressure readings, set and adjust the oil			
	d. pump			
	e. initial readings to determine the cleanliness of combustion and adjust accordingly – smoke reading and flue draught			
	f. flue operational tests – flue spillage (where required, flue draught interference test (where required)			
5	carry out appliance combustion efficiency tests and adjust/fine tune burner controls accordingly			
6	carry out checks to ensure that the appliance temperature controls are operating correctly:			
	a. appliance control thermostat			
	b. appliance energy cut-out device			
7	carry out checks to ensure that connected water heating systems are functioning correctly:			
	a. hot water systems			

	b. central heating systems			
8	complete the details contained in a commissioning record for pressure jet oil fired appliances.			

Outcome 4		Be able to decommission pressure jet oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	Liaise with other persons to determine the decommissioning work to be carried out			
2	Arrange for temporary heating to be available (if required) for the duration of decommissioning work			
3	Isolate the appliance from the supply source			
	a. Turn off the electricity and fuel supply to the appliance and make safe			
	b. Turn off the water supply to the system			
4	Drain and safely dispose of the system contents			
	a. Central heating / hot water system			
	b. Fuel supply system			
5	Take precautions to ensure that the appliance cannot be brought back into operation before the decommissioning work is complete			
6	Advise other persons that the appliance has been successfully decommissioned			

Unit 311

Install, test and commission domestic oil firing pressure jet appliances

Declaration

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Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 312

Install, test and commission domestic oil firing vaporising appliances

Level: 3

Credit value: 3

UAN: A/502/9404

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in understanding customer requirements by pre-installation inspections, and the installation, commissioning, and decommissioning of appliances.

Outcome 1	Be able to select vaporising oil fired appliances to meet customers needs			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	select suitable vaporising appliances meeting installation/standard requirements:			
	a. customers needs/preference			
	b. provision of suitable flueing arrangements			
	c. suitable room/property location			
	d. proximity of combustible materials to the appliance			
	e. building layout and features – suitable appliance space			
	f. suitability of heating system			
	g. loadings placed on the oil fired appliance			
	h. energy efficiency legislation requirements			
	i. environmental impact			
2	calculate the size of vaporising appliances required for given situations.			

Outcome 2		Be able to install vaporising oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a pre-installation inspection to determine that vaporising appliances can be correctly installed:			
	a. appliance location/position			
	b. hearth provision			
	c. flueing arrangements and termination			
	d. appliance ventilation provision			
	e. fuel supply arrangements			
	f. heating/hot water system provision			
2	g. electrical connection arrangements			
	position, fix and connect vaporising oil fired appliances to manufacturer requirements:			
	a. assemble and position the appliance			
	b. make connections to, or assemble, the appliance flue system/connection			
	c. make connections to the heating/hot water system			
	d. make final connections to the oil supply pipework			
3	e. make final electrical connections to the central heating control system			
	take precautions to ensure that the appliance cannot be brought into operation before the installation work is fully completed			

Outcome 3		Be able to commission vaporising oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use information sources to identify the range of commissioning work required on vaporising oil fired appliances			
2	carry out a visual inspection of vaporising oil fired appliances and their associated supplies to confirm that they are ready to be commissioned:			
	a. oil storage tank			
	b. oil supply system – checked, filled and ready for operation			
	c. air supply – combustion and ventilation			

	d. flue system including hearth, proximity of combustible materials, flue termination and provision of flue draught stabiliser			
	e. vaporising appliance – correct positioning and assembly of components such as flue baffles			
	f. water connections to the appliance – provision of suitable heating/hot water system controls, checked filled and ready for operation			
	g. electrical connection to the appliance – electrical testing has taken place and the appliance is ready for operation			
	h. appliance burner and controls – setting, positioning etc.			
3	carry out operational tests prior to appliance light up:			
	a. flue flow test (where required)			
4	carry out operational tests on initial appliance light up:			
	a. determination of cold oil depth and/or oil flow rate			
	b. initial function of appliance burner			
	c. correct operation of burner safety controls			
	d. appliance flame picture (where required)			
	e. initial readings to determine the cleanliness of combustion and adjust accordingly – smoke reading and flue draught			
	f. flue operational tests – flue spillage (flue draught interference test, where required)			
5	carry out appliance combustion efficiency tests and adjust/fine tune burner controls accordingly			
6	carry out checks to ensure that the appliance oil flow rate/temperature controls are operating correctly.			
7	carry out checks to ensure that connected water heating systems are functioning correctly:			
	a. hot water systems			
	b. central heating systems			
8	complete the details contained in a commissioning record for vaporising oil fired appliances.			

Outcome 4		Be able to decommission vaporising oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	liaise with other persons to determine the decommissioning work to be carried out			
2	arrange for temporary heating to be available (if required) for the duration of decommissioning work			
3	isolate the appliance from the supply source:			
	a. turn off the electricity and fuel supply to the appliance and make safe			
	b. turn off the water supply to the system			
4	drain and safely dispose of the system contents:			
	a. central heating/hot water system			
	b. fuel supply system			
5	take precautions to ensure that the appliance cannot be brought back into operation before the decommissioning work is complete			
6	advise other persons that the appliance has been successfully decommissioned.			

Unit 312

Install, test and commission domestic oil firing vaporising appliances

Declaration

I confirm that the evidence supplied for the above listed unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 313

Service and maintain domestic oil firing vaporising appliances

Level: 3

Credit value: 3

UAN: F/502/9405

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in the servicing, commissioning and decommissioning of appliances, and to be able to diagnose and rectify faults.

Outcome 1	Be able to diagnose faults and carry out rectification work on vaporising oil fired appliances			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a visual inspection of existing vaporising oil fired appliances to confirm that they are installed to manufacturer/standards requirements			
2	isolate vaporising oil fired appliances to prevent them being brought into operation before the work has been fully completed			
3	carry out periodic servicing to oil fired vaporising appliances in accordance with manufacturer instructions			
4	use manufacturer instructions and industry standards to establish the diagnostic requirements of oil fired vaporising appliances			
5	carry out routine checks and diagnostics on vaporising oil fired appliances as part of a fault finding process:			
	a. cleaning system components			
	b. checking for blockages/poor flow rate: --heat exchanger --fuel supply system including oil controls			
	c. checking the flue system for correct operation			
	d. checking for provision of adequate ventilation to the appliance			
	e. checking for correct operation of vaporising appliance burner components.			

6	carry out fault identification and repair work on oil fired vaporising burners:			
	a. burner defects			
	b. oil level control defects			
	c. oil flow rate control defects			
	d. flue system performance			
	e. inadequate air supply.			
7	re-commission appliances following completion of service/maintenance or fault repair activities.			

Outcome 2		Be able to commission vaporising oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use information sources to identify the range of commissioning work required on vaporising oil fired appliances			
2	carry out a visual inspection of vaporising oil fired appliances and their associated supplies to confirm that they are ready to be commissioned:			
	a. oil storage tank			
	b. oil supply system – checked, filled and ready for operation			
	c. air supply – combustion and ventilation			
	d. flue system including hearth, proximity of combustible materials, flue termination and provision of flue draught stabiliser			
	e. vaporising appliance – correct positioning and assembly of components such as flue baffles			
	f. water connections to the appliance – provision of suitable heating/hot water system controls, checked filled and ready for operation			
	g. electrical connection to the appliance – electrical testing has taken place and the appliance is ready for operation			
	h. appliance burner and controls – setting, positioning etc			
3	carry out operational tests prior to appliance light up:			
	a. flue flow test (where required)			

4	carry out operational tests on initial appliance light up:			
	a. determination of cold oil depth and/or oil flow rate			
	b. initial function of appliance burner			
	c. correct operation of burner safety controls			
	d. appliance flame picture (where required)			
	e. initial readings to determine the cleanliness of combustion and adjust accordingly – smoke reading and flue draught			
	f. flue operational tests – flue spillage (where required, flue draught interference test (where required)			
5	carry out appliance combustion efficiency tests and adjust/fine tune burner controls accordingly			
6	carry out checks to ensure that the appliance oil flow rate/temperature controls are operating correctly			
7	carry out checks to ensure that connected water heating systems are functioning correctly:			
	a. hot water systems			
	b. central heating systems			
8	complete the details contained in a commissioning record for vaporising oil fired appliances.			

Outcome 3		Be able to decommission vaporising oil fired appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	liaise with other persons to determine the decommissioning work to be carried out			
2	arrange for temporary heating to be available (if required) for the duration of decommissioning work			
3	isolate the appliance from the supply source:			
	a. turn off the electricity and fuel supply to the appliance and make safe			
	b. turn off the water supply to the system			
4	drain and safely dispose of the system contents:			
	a. central heating/hot water system			
	b. fuel supply system			
5	take precautions to ensure that the appliance cannot be brought back into operation before the decommissioning work is complete			
6	advise other persons that the appliance has been successfully decommissioned.			

Unit 313

Service and maintain domestic oil firing vaporising appliances

Declaration

I confirm that the evidence supplied for the above listed unit is authentic and a true representation of my own work. The work logged is my own work carried out during my normal work duties.

The answers in the question bank are my own work and discussed with my assessor on completion. I have been observed in my workplace by my assessor on several occasions.

Candidate Name:	
Candidate Signature:	
Date:	

I confirm that this candidate has achieved all the requirements of this unit with the evidence listed. Assessment was conducted under the specified conditions and context, and is valid, authentic, reliable, current and sufficient.

Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 316

Apply core solid fuel safety within domestic building services engineering

Level: 3

Credit value: 4

UAN: L/502/9407

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in the identification of solid flues and their uses. Select and install ventilation, check suitability of flue systems and test for effective operation. Be able to diagnose and rectify faults correctly respond to unsafe situations.

Outcome 1	Be able to correctly identify solid fuels and their uses			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	confirm the type of solid mineral fuel supplied and identify the suitability of the fuel to be burnt in selected appliances:			
	a. bituminous (house) coals			
	b. bituminous coal briquettes			
	c. natural smokeless fuels			
	d. manufactured smokeless fuels			
2	confirm the type of wood supplied and identify the suitability of the fuel to be burnt in selected appliances:			
	a. wood logs			
	b. wood chips			
	c. wood briquettes			
	d. wood pellets.			

Outcome 2	Be able to correctly state the type of solid fuel appliance and determine minimum operating efficiencies			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	name the type of solid fuel appliance to be installed			
2	determine the minimum appliance efficiency for stated appliances and confirm their compliance with statutory regulation requirements.			

Outcome 3		Be able to select and install ventilation for solid fuel appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	calculate the ventilation requirements (free area of air vent) for solid fuel appliances from on-site information:			
	a. single open flued appliances			
	b. multiple open flued appliances			
2	determine by measurement and calculation the free area of grilles and ventilators to supply combustion air to solid fuel appliances:			
	a. marked ventilators and grilles			
	b. unmarked ventilators and grilles			
3	determine the suitability of grilles and vents to provide combustion air and compartment ventilation:			
	a. grille/vent construction			
	b. flyscreen not fitted/correctly sized			
	c. projection through walls including cavity walls			
4	d. fixing arrangements			
	Confirm the correct positioning of grilles and ventilators to provide combustion air to open flued solid fuel appliances			
	a. Open flued - correct positioning			
	b. Open flued - incorrect positioning			
	c. Combustion air supply to open flued appliances from adjacent rooms			

Outcome 4		Be able to check the suitability of chimneys, hearths and flue systems		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	confirm the parts of a flue system from an existing installation			
2	confirm the type of open flue system installed:			
	<ul style="list-style-type: none"> a. brick masonry chimneys – with/without liners b. rigid flues – including single and double skin 			
3	confirm the suitability of the chimney/flue for use with an open flued solid fuel appliance:			
	a. flue chimney soundness and construction			
	b. flue materials			
	c. flue draught stabiliser (if fitted)			
	d. appliance connection to flue/chimney			
	e. flue proximity to combustible materials			
	f. flue length and routing – internal/external			
	g. flue jointing methods and materials			
	h. flue supports			
	i. flue inspection points are provided (where required)			
	j. flue connection to termination point			
4	confirm that the flue outlets (terminals) of open flued appliances are correctly positioned:			
	a. correctly positioned terminals			
	b. incorrectly positioned terminals			
5	confirm the suitability of hearth provided for use with solid fuel appliances.			

Outcome 5		Be able to test solid fuel appliance flue systems for effective operation		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out visual inspections of open flued (masonry lined and rigid metallic) flue systems			
2	carry out testing procedures to open flue systems:			
	a. coring ball test			
3	b. smoke test			
	carry out flue flow tests of appliances/open flue systems:			
4	a. correctly operating flues			
	b. incorrectly operating flues			
5	carry out spillage tests of open flued appliances:			
	a. correctly operating appliances			
	b. incorrectly operating appliances			
5	carry out appliance air leakage tests to open flued appliances.			

Outcome 6		Be able to diagnose faults in open flue systems and identify rectifying actions		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	diagnose faults in solid fuel open flued systems:			
	a. flues/chimneys sited in high pressure zones			
	b. insufficient flue draught			
	c. no, or limited updraught			
2	d. downdraughting			
	present solutions to overcome faults in open flue systems.			

Outcome 7	Be able to correctly respond to unsafe solid fuel situations			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	perform safety checks on solid fuel appliances and flue systems to check for unsafe situations:			
	a. complete report forms – installation and service			
2	inspect and apply unsafe situations procedures to solid fuel appliances and flue systems			
3	label systems, appliances and components as appropriate			
4	isolate appliances as appropriate			

Unit 316

Apply core solid fuel safety within domestic building services engineering

Declaration

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Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 317

Service and maintain domestic solid mineral fuel burning appliances

Level: 3

Credit value: 3

UAN: L/502/9410

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in the servicing, commissioning and decommissioning of appliances, and to be able to diagnose and rectify faults.

Outcome 1	Be able to service and maintain solid mineral fuel appliances			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	obtain the relevant information required to enable the work to take place			
2	safely isolate solid mineral fuel appliances in order to undertake periodic service and maintenance work			
3	carry out a periodic service of a solid mineral fuel installation to include checks in relation to:			
	a. visual inspection of the installation for compliance with regulation requirements			
	b. cleaning of components			
	c. checking of system water content			
	d. functional tests on system components			
4	complete maintenance records relating to solid mineral fuel appliances.			

Outcome 2		Be able to diagnose faults in solid mineral fuel appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use information sources as part of the fault diagnosis procedure			
2	carry out fault finding procedures to identify the cause of faults with solid mineral fuel appliances:			
	a. cleaning system components -checking for blockages:			
	b. heat exchanger			
	c. checking the flue system for correct operation			
	d. checking for provision of adequate ventilation to the appliance			
	e. checking for correct operation of appliance components – thermostats, fans etc.			

Outcome 3		Be able to rectify faults in solid mineral fuel appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out fault rectification work on solid mineral fuel appliances:			
	a. cleaning system components			
	b. checking for blockages: --heat exchanger			
	c. checking the flue system for correct operation			
	d. checking for provision of adequate ventilation to the appliance			
	e. checking for correct operation of appliance components – thermostats, fans etc.			
2	re-commission appliances following completion of fault repair activities			
3	complete maintenance report forms following rectification work.			

Unit 317

Service and maintain domestic solid mineral fuel burning appliances

Declaration

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Assessor Name:	
Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Unit 319

Install, test and commission domestic solid mineral fuel burning appliances

Level: 3

Credit value: 3

UAN: Y/502/9409

Unit aim:

The aim of this unit is to enable learners to demonstrate occupational competence in customer requirements by pre-installation inspections, the installation, commissioning and decommissioning of appliances.

Outcome 1	Be able to select solid mineral fuel appliances to meet customers' needs			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	select suitable solid mineral fuel appliances meeting installation/standard requirements:			
	a. customers needs/preference			
	b. provision of suitable flueing arrangements			
	c. suitable room/property location			
	d. proximity of combustible materials to the appliance			
	e. building layout and features – suitable appliance space and fuel storage			
	f. suitability of heating system			
	g. loadings placed on the solid mineral fuel appliance			
	h. energy efficiency legislation requirements			
	i. environmental impact			
2	calculate the size of solid mineral fuel appliance required for a boiler replacement using the whole house boiler sizing method.			

Outcome 2		Be able to install solid mineral fuel appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	carry out a pre-installation inspection to determine that solid mineral fuel appliances can be correctly installed:			
	a. appliance location/position			
	b. hearth provision			
	c. flueing arrangements and termination			
	d. appliance ventilation provision			
	e. fuel supply arrangements			
	f. heating/hot water system provision			
2	g. electrical connection arrangements			
	position, fix and connect solid mineral fuel appliances to manufacturer requirements:			
	a. assemble and position the appliance			
	b. make connections to, or assemble the appliance flue system/connection			
3	c. make connections to the heating/hot water system			
	d. make final electrical connections to the central heating control system			
3	take precautions to ensure that the appliance cannot be brought into operation before the installation work is fully completed.			

Outcome 3		Be able to commission solid mineral fuel appliances		
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	use information sources to identify the range of commissioning work required on solid mineral fuel appliances			
2	carry out a visual inspection of solid mineral fuel appliances to confirm that they are ready to be commissioned:			
	a. fuel supply system – correctly assembled, sited and correct fuel supplied			
	b. air supply – combustion and ventilation			
	c. flue system including hearth, proximity of combustible materials, flue termination and provision of flue draught stabiliser (where required)			

	d. solid mineral fuel appliance – correct positioning and assembly of components such as flue mechanism, ash cleaning mechanism etc.			
	e. water connections to the appliance – provision of suitable heating/hot water system controls, checked filled and ready for operation			
	f. electrical connection to the appliance – electrical testing has taken place and the appliance is ready for operation			
3	carry out operational tests prior to appliance light up:			
	a. flue flow test (where required)			
4	carry out operational tests on initial appliance light up:			
	a. initial lighting of the appliance			
	b. appliance air leakage test			
	c. correct operation of burner safety controls			
	d. initial readings to determine the flue draught			
	e. flue operational tests – flue spillage (where required, flue draught interference test (where required)			
5	carry out appliance combustion efficiency tests and adjust/fine tune controls accordingly			
6	carry out checks to ensure that the appliance temperature controls are operating correctly			
7	carry out checks to ensure that connected water heating systems are functioning correctly:			
	a. hot water systems			
	b. central heating systems			
8	complete the details contained in a commissioning record for solid mineral fuel appliances.			

Outcome 4	Be able to decommission solid mineral fuel appliances			
Criteria		Portfolio evidence reference	Candidate initials	Assessor initials
1	liaise with other persons to determine the decommissioning work to be carried out			
2	arrange for temporary heating to be available (if required) for the duration of decommissioning work			
3	isolate the appliance from the supply source:			
	a. turn off the electricity supply and make safe			
	b. turn off the water supply to the system			
4	drain and safely dispose of the system contents:			
	a. central heating/hot water system			
5	take precautions to ensure that the appliance cannot be brought back into operation before the decommissioning work is complete			
6	advise other persons that the appliance has been successfully decommissioned.			

Unit 319

Install, test and commission domestic solid mineral fuel burning appliances

Declaration

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Assessor Signature:	
Date:	

IV/IQA Name:	
IV/IQA Signature:	
Date:	

Appendix 1 Summary of City & Guilds assessment policies

Health and Safety

All centres have to make sure that they provide a safe and healthy environment for learning, including induction and assessment. City & Guilds external verifiers check this when they visit assessment centres.

Equal Opportunities

Your centre will have an equal opportunities policy. Your centre will explain this to you during your induction, and may give you a copy of the policy.

City & Guilds equal opportunities policy is available from our website www.cityandguilds.com, City & Guilds Customer Relations Team or your centre.

Access to assessment

City & Guilds qualifications are open to all candidates, whatever their gender, race, creed, age or special needs. Some candidates may need extra help with their assessment, for example, a person with a visual impairment may need a reader.

If you think you will need alternative assessment arrangements because you have special needs, you should discuss this with your centre during your induction, and record this on your assessment plan. City & Guilds will allow centres to make alternative arrangements for you if you are eligible and if the qualification allows for this. This must be agreed before you start your qualification.

City & Guilds guidance and regulations document *Access to assessment and qualifications* is available on the City & Guilds website www.cityandguilds.com, from the City & Guilds Customer Relations Team or your centre.

Complaints and appeals

Centres must have a policy and procedure to deal with any complaints you may have. You may feel you have not been assessed fairly, or may want to appeal against an assessment decision if you do not agree with your assessor.

These procedures will be explained during induction and you will be provided with information about the Quality Assurance Co-ordinator within your centre who is responsible for this.

Most complaints and appeals can be resolved within the centre, but if you follow the centre procedure and are still not satisfied you can complain to City & Guilds.

Our complaints policy is on our website www.cityandguilds.com or is available from the City & Guilds Customer Relations Team or your centre.

Useful contacts

UK learners

General qualification information

T: +44 (0)844 543 0033

E: learnersupport@cityandguilds.com

International learners

General qualification information

T: +44 (0)844 543 0033

F: +44 (0)20 7294 2413

E: intcg@cityandguilds.com

Centres

Exam entries, Certificates, Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: centresupport@cityandguilds.com

Single subject qualifications

Exam entries, Results, Certification, Missing or late exam materials, Incorrect exam papers, Forms request (BB, results entry), Exam date and time change

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

F: +44 (0)20 7294 2404 (BB forms)

E: singlesubjects@cityandguilds.com

International awards

Results, Entries, Enrolments, Invoices, Missing or late exam materials, Nominal roll reports

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: intops@cityandguilds.com

Walled Garden

Re-issue of password or username, Technical problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

E: walledgarden@cityandguilds.com

Employer

Employer solutions, Mapping, Accreditation, Development Skills, Consultancy

T: +44 (0)121 503 8993

E: business@cityandguilds.com

Publications

Logbooks, Centre documents, Forms, Free literature

T: +44 (0)844 543 0000

F: +44 (0)20 7294 2413

If you have a complaint, or any suggestions for improvement about any of the services that City & Guilds provides, email: feedbackandcomplaints@cityandguilds.com

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