Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment (6188-22)



www.cityandguilds.com February 2012 Version 1.0

Candidate performance evidence logbook 600/0143/4

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Candidate performance evidence logbook

Qualification title	Number	QAN
Level 2 NVQ Diploma in Planned Reactive Maintenance on Heating and Ventilating Equipment	6188-22	600/0143/4

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1 About your candidate logbook

1.1 Contact details

Candidate name	
Candidate enrolment no	
Centre name	
Centre number	
Programme start date	
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	
Quality Assurance Contact	

1 About your candidate logbook

1.2 Introduction to the logbook

This logbook will help you complete the units, which are assessed by your performance at work, in the City & Guilds' Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment (6188-22). It contains forms you can use to record your evidence of what you have done.

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

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

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

The external verifier

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

3 Using your logbook

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.

Please photocopy these forms as required.

4 Qualification structures

To achieve the **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment (6188-22)**, learners must achieve 86 credits from all ten mandatory units in the table shown below. This Logbook includes only those units assessed by performance in the workplace (marked with an *).

Unit accreditation number	City & Guilds unit number	Unit title	Credit value	GLH
J/602/2479	201	Understand and carry out safe working practices in building services engineering	10	88
J/602/2482	202	Understand how to communicate with others within building services engineering	3	28
D/602/2486	203	Understand how to apply environment protection measures within BSE	4	38
J/602/2496	204	Understand how to apply scientific principles within MES	7	66
A/602/2768	205	Understand and carry out site preparation and fabrication techniques for industrial and commercial systems	40	356
J/602/4927	206	Understand industrial and commercial hot and cold water system maintenance techniques	6	57
L/602/4928	207	Understand industrial and commercial hot water heating system maintenance techniques	5	45
T/602/2493	*210	Apply safe working practices in building services engineering working environment	2	4
R/602/4929	221	Understand industrial and commercial air system maintenance techniques	5	45
J/602/4930	*222	Service and maintain industrial and commercial heating and ventilation systems	4	6

5 Overall Unit Sign-off

The following units are included in the rules of combination for the **Level 2 NVQ Diploma in Planned and Reactive Maintenance on Heating and Ventilating Equipment (6188-22).** Learners must achieve these portfolio units to contribute towards achievement of the overall qualification.

City & Guilds unit	Unit title	Unit Achieved Yes/No	Assessor Initials	Date
210	Apply safe working practices in building services engineering working environment			
222	Service and maintain industrial and commercial heating and ventilation systems			

Unit 210 Apply safe working practices in building services engineering working environment

Level: 2 Credit value: 2

UAN: T/602/2493

Outcome 1	Be able to demonstrate personal health and workplace	safety preca	utions in t	he
Criteria		Candidate initials	Assessor initials	Evidence reference
1	demonstrate that appropriate personal protective equipment is used throughout work activities			
2	ensure that health & safety precautions are in place:			
	first aid kit provision			
	fire extinguisher provision			
3	demonstrate safe manual lifting techniques.			

Outcome 2	Be able to prepare and use access equipment in the workplace			
Criteria		Candidate initials	Assessor initials	Evidence reference
1	use risk assessments to identify safe methods of working at height			
2	check access equipment for safe condition prior to use			
3	perform the safe erection of access equipment			
4	demonstrate the safe use of access equipment.			

Outcome 3	Be able to check that the work area is safe in order to carry out work		rk	
Criteria		Candidate initials	Assessor initials	Evidence reference
1	carry out a check of the work location for health and safety hazards			
2	verify that access and exit routes to and from the immediate work location are safe and free from obstructions			
3	demonstrate safe working practices when working with heat producing equipment.			

Outcome 4	Be able to liaise with those responsible for health and safety in the workplace			
Criteria		Candidate initials	Assessor initials	Evidence reference
1	demonstrate methods of recording accidents in the accident book in accordance with company procedures			
2	demonstrate methods of reporting hazards and accidents in accordance with company procedures.			

Unit 210 Apply safe working practices in building services engineering working environment

Declaration

I confirm that the evidence supplied for this 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.

reliable, current and sufficie	nt.
Assessor Name:	
Assessor Signature:	
Date:	
IV Name:	
IV Signature:	
Date:	

Unit 222 Service and maintain industrial and commercial heating and ventilation systems

Level: 2 Credit value: 4

UAN: J/602/4930

Outcome 1	Be able to complete preparation work for industry and ventilation systems service and maintenant			heating
Criteria		Candidate initials	Assessor initials	Evidence reference
1	check the work location and report factors that will impact on the work to the supervisor or line manager			
2	source appropriate job information and documentation for heating and ventilation system service and maintenance requirements including:			
	systems:			
	• cold water: one of the following:			
	- storage (indirect)			
	non storage (direct)			
	hot water: one of the following:			
	open vented			
	storage (indirect)			
	– unvented			
	 secondary circulation 			
	 instantaneous (plate heat exchanger) 			
	heating: one of the following:			
	 low temperature hot water 			
	 medium temperature hot water 			
	air: one of the following:			
	 air conditioning systems 			
	 heat rejection systems 			
	 tempered air ventilation systems 			
	job information and documentation:			
	 statutory regulations 			
	- codes of practice			
	 industry standards 			
	 industry guides/good practice guides 			
	 verbal instructions 			

3	use job information and documentation to ensure that the following is fit for purpose:		
	equipment		
	• tools		
4	identify the points in the work process where liaison with other persons may be necessary:		
	other site workers		
	site visitors		
	supervisor or line manager		
5	demonstrate that job information on key aspects of the work has been issued to relevant people including user instructions or manufacturer's instructions		
6	demonstrate that authorisation has been obtained from the relevant person(s) prior to commencement of the work, from one of the following:		
	other site workers		
	site visitors		
	supervisor or line manager		
7	note any pre work damage or defects to existing equipment or building features, should it exist, and report it to the job supervisor or line manager		
8	demonstrate that suitable personal protective equipment has been worn throughout the duration of work preparation activities		
9	check that the resources needed to complete the job are free from damage and take appropriate action should any defects be found		
10	complete preparatory work for the service and maintenance of heating and ventilation systems, to include:		
	 use of material and equipment requisites where appropriate 		
	 confirmation that the selection of material, equipment and components are compatible to the installation 		
	confirmation that the work location is ready for service and maintenance activities		
	confirmation of secure site storage for tools, equipment, materials and components		
	confirmation of suitable access equipment		
	confirmation of suitable lifting equipment where required.		

Outcome 2	Be able to service industrial and commercial heating and ventilation systems, equipment and components			
Criteria		Candidate initials	Assessor initials	Evidence reference
1	check that the relevant information is available in order to carry out maintenance work			
2	check that materials, tools and equipment are available for the specified maintenance activity			
3	demonstrate that liaison has taken place with the supervisor or line manager at the key points within the routine maintenance activities to minimise disruption to work routines			
4	perform work activities for routine maintenance that complies with industry specifications and manufacturer's instructions, for hot and cold water system and components including:			
	all of the following:			
	cold water storage cistern			
	pressure booster sets			
	hot water storage vessels			
	appliance control valve or tap, terminal fittings			
	and a minimum of any two from the following:			
	electric and gas water heaters			
	stop valves			
	shower mixing valves			
	blending valves			
	mixing valves			
	circulating pumps (bronze)			
	expansion vessels			
	RPZ valves			
5	perform work activities for routine maintenance that ensure the continued effective operation of the hot and cold water systems and components			
6	perform work activities for routine maintenance that complies with industry specifications and manufacturer's instructions, for hot water heating systems and components including:			
	one from the following:			
	low temperature hot water			
	medium temperature hot water			
	and a minimum of six from the following:			
	hot water storage vessels			
	• radiators			
	convector heaters, natural and assisted			
	panel heaters			

	ceiling coils		
	thermostatic control of heating systems		
	time control of heating systems		
	energy management systems		
	storage calorifiers		
	non-storage calorifiers		
	feed and expansion cisterns		
	 pressurisation units 		
	 mechanical controls 		
	 dosing pots 		
	• drain taps		
	motorised valves		
	pumps/accelerators		
	temperature and pressure relief valves		
	expansion vessels		
7	perform work activities for routine maintenance that ensure the continued effective operation of the hot water heating systems and components		
8	perform work activities for routine maintenance that complies with industry specifications and manufacturer's instructions for air systems and components, including:		
	one from the following:		
	air conditioning systems		
	tempered air ventilation systems		
	and a minimum of six from the following:		
	isolation valves		
	three & four port valves		
	temperature & humidity stats		
	registers and grilles		
	actuators		
	RPZ valves		
	• pumps		
	• fans		
	• filters		
	air washer		
	humidifier		
	attenuators		
	dampers		
	heat exchangers		
	• condensers		
	 industry specifications and regulations 		
	Industry Specifications and regulations	<u> </u>	

9	perform work activities for routine maintenance that ensure the continued effective operation of the air systems and components		
10	confirm that maintenance records have been completed accurately and checked by the supervisor or line manager.		

Outcome 3	Be able to complete soundness tests on industriventilation systems	ial and com	mercial he	ating and
Criteria		Candidate initials	Assessor initials	Evidence reference
1	conduct visual inspections of the following heating and ventilation systems and confirm compliance with industry requirements:			
	• cold water (one of the following):			
	- storage (indirect)			
	 non storage (direct) 			
	 hot water (one of the following): 			
	 open vented 			
	storage (indirect)			
	– unvented			
	 secondary circulation 			
	 instantaneous (plate heat exchanger) 			
	heating (one of the following):			
	 low temperature hot water 			
	 medium temperature hot water 			
	air (one of the following):			
	 air conditioning systems 			
	 tempered air ventilation systems 			
2	confirm that systems are ready to receive soundness tests to cover:			
	• pipework			
	ductwork			
	appliances			
	components			
3	perform procedures for:			
	cleaning			
	flushing			
	charging			
	systems in accordance with industry requirements			
4	conduct procedures for establishing that input services to the system components are suited to the intended purpose for two of the following:			
	water company mains:			
	 mains fed, direct, or indirect 			

	air supplies		
	• gas		
	• oil		
5	apply a soundness test to the following systems in accordance with appropriate industry standards, guides and good practice guides:		
	cold water		
	hot water		
	• heating (one of the following):		
	 low temperature hot water heating 		
	 medium temperature hot water heating 		
	air (one of the following):		
	air conditioning		
	 tempered air ventilation 		
6	conduct pre-commissioning tests and checks in accordance with appropriate industry requirements, including:		
	statutory regulations		
	 codes of practice 		
	industry standards		
	industry guides/good practice guides		
	verbal instructions		
7	conduct checks to confirm:		
	system cleanliness		
	system is charged		
	 un-commissioned systems and components cannot be activated. 		

Outcome 4	Be able to decommission industrial and commercial heating and versesses			entilation	
Criteria		Candidate initials	Assessor initials	Evidence reference	
1	verify that decommissioning processes minimise disturbance to work routines				
2	verify that systems or components are safe for decommissioning for at least two from the following systems:				
	cold water				
	hot water				
	low temperature heating				
	medium temperature heating				
	air conditioning				
	tempered air ventilation				

3	conduct decommissioning of systems or components which comply with industry requirements, including:		
	statutory regulations		
	codes of practice		
	industry standards		
	industry guides/good practice guides		
	verbal instructions		
4	verify that the decommissioning procedures carried out prevent the inadvertent operation of the installed system through:		
	 temporary capping of pipework or ductwork sections 		
	use of safety and warning notices		
5	verify that decommissioned systems and components are left safe, in line with industry requirements.		

Unit 222 Service and maintain industrial and commercial heating and ventilation systems

Declaration

I confirm that the evidence supplied for this 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 Name:	

IV Name:	
IV Signature:	
Date:	

On Site Assessment Plan / Feedback



				Evidence Reference:	
Qualification: Level:			Qı	ualification number:	
Candidate name: Assessor name:			Da	ite:	
Candidate prepared for assess (Provide details below)	ment	Yes / No	Candi	date requires support	Yes / No
Candidate briefed on appeals prod	cedure	Yes / No	Suppo	rt required	
Assessment Location / Address	s and po	stcode:			
Type of work to be carried out:					
Assessor Feedback: (Use Assessor continuation sheet	if required	d)			
Forward Planning:					
Candidate Signature: Assessor Signature:				Date:	
IV/IQA Name:	IV/IQA Si	gnature:		Date:	

On Site Observation Report



			- ·	1
		Evidence	Reference:	
Qualification: Level:		Qualification	number:	
Candidate name: Assessor name:		Date:		
Candidate prepared for assessment (Provide details below)	Yes / No	Candidate requ	ires support	Yes / No
Candidate briefed on appeals procedure	Yes / No	Support required		
Assessment Location / Address and possible of the Assessor observation: (Use Assessor continuation sheet if required)				
				Outcome/
				Criteria
Candidata Cignatura				
Candidate Signature: Assessor Signature:			Date:	
/ 10000001 DISTIULUIC.			Duic.	

IV/IQA Signature:

IV/IQA Name:

Date:

Supplementary Evidence Sheet



		Evidenc	e Reference:	
Qualification: Level:		Qualificatio	n number:	
Candidate name: Assessor name:		Date:		
Unit Number:				
Completed by: (pleas			_	
Candidate	Workplace Recorder	Witness		
Written Evidence:				Outcome/ Criteria
Candidate Signature:				
Assessor / Workplace R				
Assessor / Workplace R			Date:	
IV/IOA Name:	IV/IOA Signature:		Date:	

Oral Questioning Supplementary Evidence Sheet



		Evidence Refe	erence:	
Qualification: Level:	(Qualification nun	nber:	
Candidate name: Assessor name:	D	ate:		
Unit Number:				
Assessor question:	Candidate answer:			
				Outcome/ Criteria
Candidate Signature:		-		
Assessor Signature:		Dat	te:	

IV/IQA Signature:

IV/IQA Name:

Date:

Photographic Supplementary Evidence



Evidence Reference:

Scheme / Award:	Scheme Number:	Level:
Candidate Name:		
Unit Number:		
	Brief description of ta out in the photograph by candidate):	ask being carried n (to be completed
(Attach Photo in this Bo	ox)	
Location of photograph:		
Candidate Signature:		
Assessor Signature:		Date:
IV/IQA Name:	IV/IQA Signature:	Date:

Workplace Recorder Details



I confirm I am suitably experienced or qualified in line with the industry requirements to act as a witness for this learner. I acknowledge that I will only counter sign documentation requested by the learner where to my knowledge only the learner has completed the work and on the understanding that the work has been carried out to the acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

I confirm I am suitably experienced or qualified in line with the industry requirements to act as a witness for this learner. I acknowledge that I will only counter sign documentation requested by the learner where to my knowledge only the learner has completed the work and on the understanding that the work has been carried out to the acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

I confirm I am suitably experienced or qualified in line with the industry requirements to act as a witness for this learner. I acknowledge that I will only counter sign documentation requested by the learner where to my knowledge only the learner has completed the work and on the understanding that the work has been carried out to the acceptable standard.

Workplace Recorder Name:	
Workplace Recorder Signature:	Date:

Assessor Continuation Sheet

On Site Assessment Plan/Feedback On Site Observation



Evidence Reference:	

ssessor Briefing and Report	Criteria O	bserved	Assessment	
	Outcome	Criteria	Method	

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

Signature Sheet



Anyone who witnesses and signs a piece of the candidate's evidence must provide a specimen signature in the table below.

Witnesses relationship to candidate eg supervisor, customer, lecturer, assessor	Name	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	T: +44 (0)844 543 0033
General qualification information	E: learnersupport@cityandguilds.com
International learners	T: +44 (0)844 543 0033
General qualification information	F: +44 (0)20 7294 2413
	E: intcg@cityandguilds.com
Centres	T: +44 (0)844 543 0000
Exam entries, Certificates,	F: +44 (0)20 7294 2413
Registrations/enrolment, Invoices, Missing or late exam materials, Nominal roll reports, Results	E: centresupport@cityandguilds.com
Single subject qualifications	T: +44 (0)844 543 0000
Exam entries, Results, Certification, Missing	F: +44 (0)20 7294 2413
or late exam materials, Incorrect exam	F: +44 (0)20 7294 2404 (BB forms)
papers, Forms request (BB, results entry), Exam date and time change	E: singlesubjects@cityandguilds.com
International awards	T: +44 (0)844 543 0000
Results, Entries, Enrolments, Invoices,	F: +44 (0)20 7294 2413
Missing or late exam materials, Nominal roll reports	E: intops@cityandguilds.com
Walled Garden	T: +44 (0)844 543 0000
Re-issue of password or username, Technical	F: +44 (0)20 7294 2413
problems, Entries, Results, e-assessment, Navigation, User/menu option, Problems	E: walledgarden@cityandguilds.com
Employer	T: +44 (0)121 503 8993
Employer solutions, Mapping, Accreditation, Development Skills, Consultancy	E: business@cityandguilds.com
Publications	T: +44 (0)844 543 0000
Logbooks, Centre documents, Forms, Free literature	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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