

T Level Technical Qualification in Building Services Engineering for Construction

8710-356 Plumbing Engineering

Grade standard exemplification material

Distinction - Summer 2024

Version and date	Change detail	Section	Question
v1-0 October 2024			

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Introduction

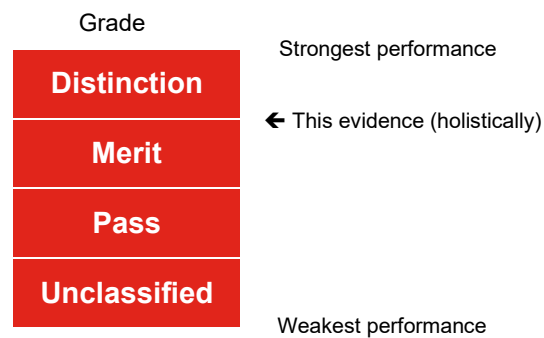
Summer 2024 Results

This document is aimed at providers and learners to help understand the standard that was required in the summer 2024 assessment series to achieve a distinction grade for the 8710-356 Plumbing Engineering Occupational Specialism (OS).

The grade standard exemplification evidence (Grade SEM) provided for the distinction grade displays the holistic standard required across the tasks to achieve the distinction grade boundary in the summer 2024 series.

The aim of these materials is to provide examples of knowledge, skills and understanding that attested to distinction competence in summer 2024. It is important to note that in live assessments a candidate's performance is very likely to exhibit a spikey profile and standard of performance will vary across tasks.

The Occupational Specialism is graded Distinction, Merit, Pass or Unclassified.



The distinction grade boundary is based on a synoptic mark across all tasks. The materials in this Grade SEM are separated into two sections as described below. Materials are presented against a number of tasks from the assignment.

Task

This section details the tasks that the candidate has been asked to carry out. What needs to be submitted for marking and any additional evidence required including any photograph/video evidence. Also referenced in this section are the assessment themes the candidates were marked against when completing the tasks within it. In addition, candidate evidence that has been included or not been included in this Grade SEM has been identified within this section.

In this Grade SEM there is candidate evidence from:

- Task 1
- Task 2
- Task 3

Candidate evidence

This section includes exemplars of candidate work, photographs of the work in production (or completed) and practical observation records of the assessment completed by centre assessors. This was evidence that was captured as part of the assessment and then internally marked by the centre assessor.

The Occupational Specialism brief and tasks can be downloaded from here: [8710-356 plumbing engineering os summer24 v1-0](#)

Important things to note:

- We discussed the approach to standard setting/maintaining with Ofqual and the other awarding organisations before awarding this year. We have agreed to take account of the newness of qualifications in how we award this year to recognise that students and teachers are less familiar with the assessments ([grading-arrangements-for-vtgsand-technical-qualifications-within-t-levels-in-the-academic-year-2023-to-2024](#)), whilst also recognising the standards required for these qualifications.
- The evidence presented, as a whole, was sufficient to achieve the distinction grade. However, performance across the tasks may vary (i.e. some tasks completed to a higher/lower standard than distinction grade).

Grade descriptors

To achieve a distinction, a candidate will be able to:

Demonstrate an exemplary performance that fully meets the requirement of the brief and is able to enter the industry to begin to work in the occupational area.

Demonstrate exemplary technical skills in cutting, bending, fixing pipework and installing components that is in line with industry standards.

Demonstrate relevant and comprehensive knowledge and understanding of plumbing principles and processes through the tasks completed.

Work safely and make informed and appropriate use of tools, materials and equipment within the plumbing environments that they are working in.

Competently and independently interpret information and apply the technical skills to practical tasks and procedures to an exemplary standard as recognised by industry, producing an excellent quality of work that meets acceptable tolerances, regulations and standards.

Confidently attempt some complex tasks and the level of performance meets an exemplary level.

Identify causes and diagnose plumbing faults and have a thorough understanding and the skills to be able to repair and rectify them.

Consistently use accurate industry terminology in both written and verbal contexts.

Task 1 – Planning the installation

Assessment number (eg 1234-033)	8710-356
Assessment title	Plumbing Engineering Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	1
Evidence title / description	<ul style="list-style-type: none">• A materials list• A method statement• A risk assessment• An installation diagram• Photographic evidence
Date submitted by candidate	DD/MM/YY

Task

Assessment themes:

- Health and safety
- Design and planning
 - Documents
 - Drawings and diagrams
- Systems and components
 - Installation
 - Decommissioning

The purpose of this task is for you to demonstrate that you can correctly plan the installation, produce a detailed materials list, complete a detailed method statement, assess the risks involved in the installation activity, and produce an accurate installation diagram showing the pipework layout, pipe clips and components.

You will be provided with the assignment brief and given time to plan the installation of the washroom facilities including the handrail set and macerator.

a) Plan the installation of the sanitary appliances, handrail set and macerator following the client brief.

You should produce the following:

- Materials list
- Method statement to include planning your sequence of work and associated risks (to include justifications)
- Risk assessment
- Installation diagram with pipework layout, pipe clips and associated components with reference to Approved Document M

Templates for the materials list, method statement, risk assessment and drawing grid are provided and must be used.

Your installation diagram should be applicable to the location you are being assessed in and completed to a commercially acceptable standard. The diagram should include all fixed services and the proposed installation layout.

You should use the installation diagram to carry out the installation. The diagram will also be used by your tutor/assessor for checking the dimensional tolerances of the installed system and pipework.

b) Measure and mark out proposed working area.

You will be provided with a specific working area that has been set up according to Figure 1.

You must measure and mark out your work area as detailed in your diagram, and this activity must be completed prior to carrying out the installation.

If you provide plans that are not fit for purpose, it is expected that your tutor/assessor will intervene and provide necessary feedback and corrections to the plans prior to you carrying out the installation. However, this will be commented on in the marking documentation and reflected in marks awarded.

Additional evidence of your performance that must be captured for marking:

Tutor/assessor observations of:

- Accuracy of measurements and marking out (of space allocation/work area checked against installation drawing).
- Marking out in comparison with the proposed plan and completed drawing including the accuracy of the recording of key dimensions.

Photographs taken by your tutor/assessor at various stages of the task.

Candidate evidence

Completed materials list

Equipment/Materials	Quantity
Fixed hand rail	1
Lifting arm handrail	1
TMV	1
Isolation valves	1
Taps	2
32mm solvent weld waste pipe	1900mm
Mascerator	1
Wash basin – wall hung.	1
Bottle trap 32mm	1
Chrome waste	1
WC system	1
WC pan	1
Waste	1
Soil vent pipe	2200mm
Copper pipe 15mm	2500mm
Copper elbow end feed solder – 15mm	3
Copper tee piece end feed	X2
Toilet seat	1
Plastic clips	14
Wall bracks	2

32mm solvent weld elbow	2
32 compression straight connector	1
Tap connector	7
Tools	
Correct PPE	1
Silicon sipray	1
Ptfe tape	1
Solder	1
Heat mats	1
Wall plugs and screws	
Wire flex 2.5mm	1 meter
Wire strippers	1
Wire cutters	1
Silicon spray	1
Flux	1
Blow turch	1
Philip screwdriver	1
Pozie screwdriver	1
Electrical insulated screwdriver	1
22mm/15mm pipe slice	2
Pliers	1
Kneeling pad	1
Copper pipe slice	1

Senior pipe slice	1
Rasp	1
File	1
Hammer	1
Tape measure	1
Level	1
Spanner	2
Jointing compound	1
Steel rule	1
Bradol	1
Wire wool	1
Boat level	1
Level	1
Soldre brush	1
Soldre	1
Screws/wall plugs	10-30

Completed method statement

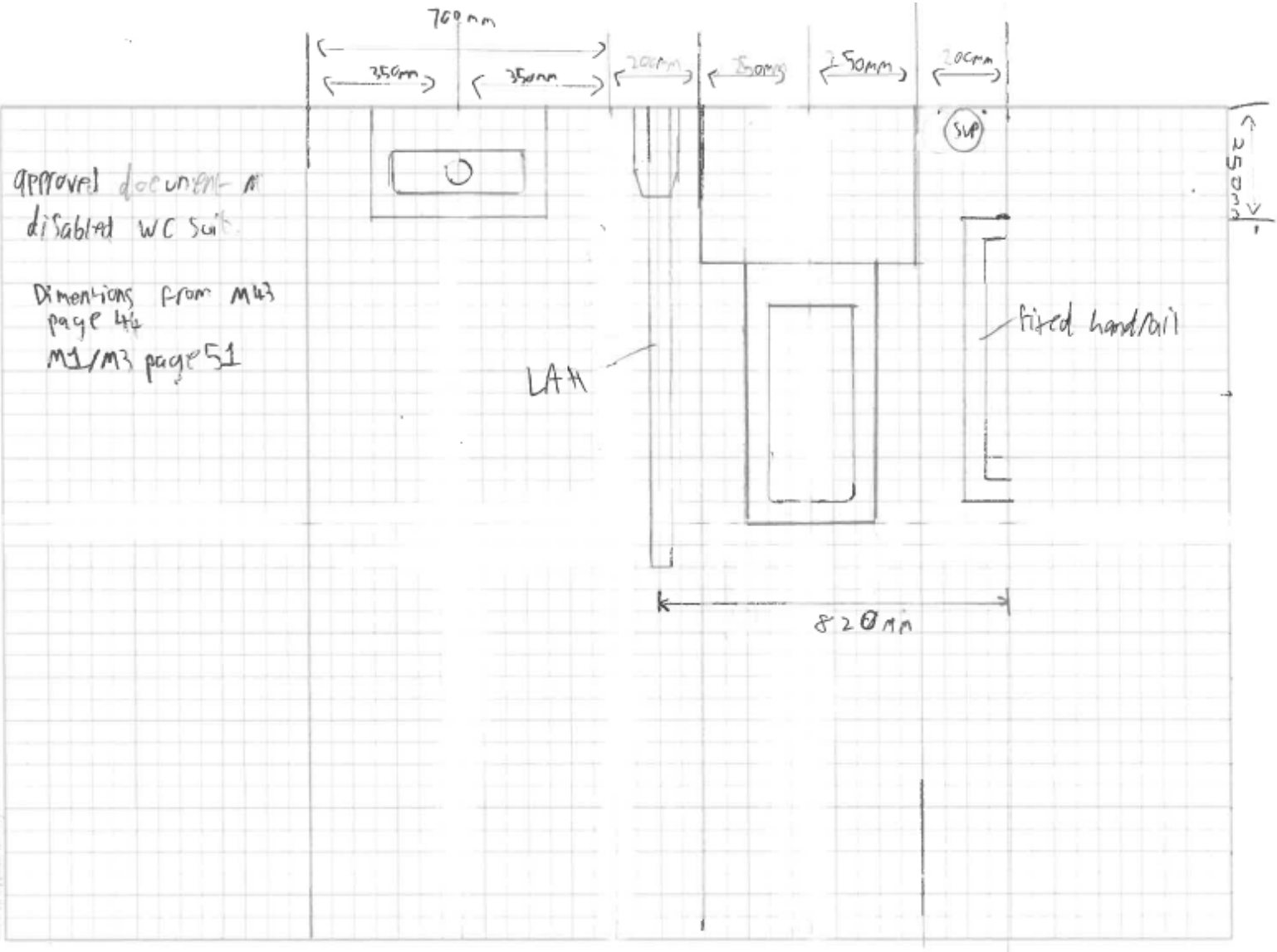
- 1) Visually inspect and risk assess the work place.
- 2) Dress WC cistern and pan and put them together.
- 3) Pre install masarator and pipework to soil vent pipe along with pre plumb svp
- 4) Plug in WC to masarator
- 5) Mark out the pipe measurements for WC and wash basin
- 6) Put wall brackets on wall
- 7) Hang wash basin
- 8) Connect cold water to WC and run the pipe to the iso valve
- 9) Use tee pieces to connect the cold water to the wash basin.
- 10) Connect waste pope to wash basin.
- 11) Connect waste pipe from wash basin to masorator.
- 12) Connect hot water pipe to thermostatic mixing valve.
- 13) Connect cold water to tmv.
- 14) Connect hot water to the wash basin.
- 15) Safe isolation.
- 16) Connect 2.5 mm flex from masarator to fused spur.
- 17) Clip the cable.
- 18) Install fix bracket.
- 19) Install leaver arm bracket
- 20) Put seat on toilet.
- 21) Commission the hot and cold water supply and visually inspect
- 22) Commission the masarator.
- 23) Test the masorator is working.
- 24) Show customer how it works.
- 25) Hand it over to the customer and inform them nothing oter than paper can go in the masorator.
- 26) 100% drain and decommission system.

Completed risk assessment

SEVERITY (S): Degree of harm which may be caused (including numbers affected)					RISK RATING (RR): Severity x Likelihood			
1 Minor Injury 2 Major Injury 3 Fatality					1-2 Low			
LIKELIHOOD (L): Probability that event will occur					3-5 Medium			
1 Remote 2 Possible 3 Likely					6-9 High			
Item No:	Activity	Hazard	Persons at Risk	Existing Controls (Mitigation)	S 1-3	L 1-3	RR	Are the Risks Controlled?
1	Excessive noise	Too much noise to work	Public and operatives	Using ear plus. PPE	2	3	6	Yes
2	Exposure to gas and electric	Live gas and electricity exposure	Public and operative	System will be off and not live while working on it.	3	1	3	Yes
3	Protruding objects People may walk into	Bending machines and pipes	Public and operative	Move protruding objects out of the way	2	1	2	Yes
4	Objects falling from height	Over head building services	Public and operatives	Wear appropriate PPE such as hard hat	3	1	3	Yes
5	Tripping on cable and/or pipes	Tripping hazard	Public and operatives	Move all possible trip hazards from the area	2	2	4	Yes
6	Poor lighting	Bad light condition	Public and operatives	Ensure lights are working	1	1	1	Yes

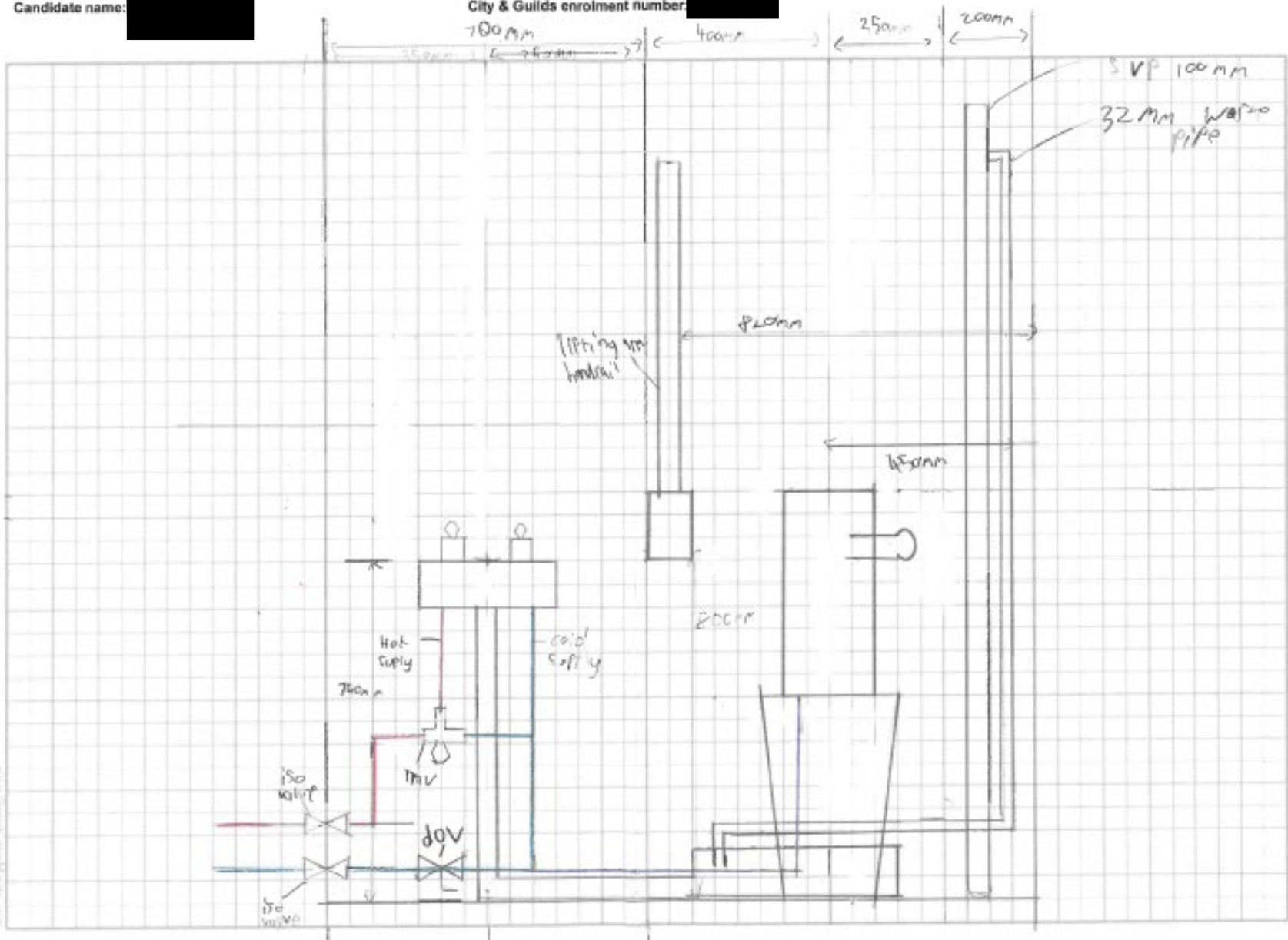
7	Tools and or equipment condition	Possible tool damage.	Public and operatives	Check tool and equipment condition before use.	2	1	2	Yes
7	Heating condition	Exescive temperature	Public and operatives	Wear apropriet PPE and clothing along with temperature control.	1	2	2	Yes
9	Manual handling	Heavy equipment	Public and operatives	Propper lifting techniques	2	2	4	Yes

Completed drawing grid



Candidate name: [Redacted]

City & Guilds enrolment number [Redacted]



Photographic evidence



Completed PO Form

Practical Observation (PO) Form (Task 1)

8710-36 T Level Technical Qualification in Building Services Engineering for Construction

8710-356 Plumbing Engineering (Summer 2024)

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234
Date	DD/MM/YY

Provider name	<provider name>
City & Guilds Provider No.	999999a

Task 1 assessment themes:

- Health and safety
- Design and planning
 - Documents
 - Drawings and diagrams
- Systems and components
 - Installation
 - Decommissioning

Record observation notes below to inform internal marking and external moderation. Notes must be detailed, accurate and differentiating which use terminology from the mark grid along with specific examples observed. Notes must identify areas of strength and weakness, distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.

Assessment Themes	Assessor observation notes
Health and safety <ul style="list-style-type: none">• Risk assessment• Risk mitigation• Harm and probability factors• Adherence to health and safety	<p>Candidate has visited the installation site area and prepared and carried out a visual risk assessment of the area prior to preparing a written risk assessment.</p> <p>Candidate has independently identified potential hazards within the defined installation area and the surrounding workshop.</p> <p>Candidate has produced a written Risk assessment and recorded the identified risks and mitigation measures required to reduce the probability of harm during the installation tasks.</p>

<p>Design and planning (documents)</p> <ul style="list-style-type: none"> • Quality of documentation • Adherence to brief 	<p>Candidate has produced, in line with the assessment brief, a Plan and Elevation drawing based on site install area dimensions and space constraints, including the location of the washbasin and WC.</p> <p>Candidate has produced, in line with the assessment brief, a written Risk assessment and recorded the identified risks and mitigation measures required to reduce the probability of harm during the installation tasks.</p> <p>Candidate has produced, in line with the assessment brief, a written Method Statement detailing the sequence of operations required for the efficient and safe installation of the pipework and system components</p>
<p>Design and planning (drawings and diagrams)</p> <ul style="list-style-type: none"> • Accuracy • Positioning 	<p>Candidate has prepared plan and elevation drawings based on site install area dimensions and space constraints.</p> <p>Candidate has used appropriate drawing equipment to prepare the drawings and approximation for accuracy of scale for the installed WC suite and pipework runs as specified in the assessment brief.</p> <p>Candidate has followed the requirements detailed in Approved document Part M to plan the siting and dimensions for the installed suite and handrails.</p>
<p>Systems and components (installation)</p> <ul style="list-style-type: none"> • Marking out • Measurements • Sequencing • Tolerances • Tools • Skills 	<p><i>Planning stage (Task 1) only</i></p> <p>Candidate has used the drawings prepared earlier in Task 1 to produce a written Method Statement and Materials List to identify the tools and materials required and to prepare for how the install would begin and progress to follow a logical sequence for the installation.</p> <p>Candidate has marked out critical dimensions for siting the pipework runs and clipping from the hot and cold-water supplies entry points to the wash basin and WC suite.</p> <p>Candidate has marked out critical dimensions for siting the waste pipework runs and clipping from the macerator to the SVP and washbasin.</p>
<p>Systems and components (decommissioning)</p> <ul style="list-style-type: none"> • Sequencing • Disposal • Waste removal • Techniques and finish 	<p><i>As detailed in method statement</i></p> <p>Candidate has detailed the sequencing of installation operations in the Method Statement but has not included the decommissioning requirements of the system.</p>

Any other aspects

Internal assessor signature	Date
<div style="border: 1px solid black; padding: 5px; width: 300px; margin-bottom: 5px;"><p style="margin: 0;">X</p></div> <div style="border: 1px solid black; height: 40px; width: 300px;"></div>	<p style="text-align: center;">DD/MM/YY</p>

If completing electronically, double click next to the 'X' to add an electronic signature once the record is **finalised**.

Task 2 – Installation, commission and decommission

Assessment number (eg 1234-033)	8710-356
Assessment title	Plumbing Engineering Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	2
Evidence title / description	Commissioning checklist Photographic evidence
Date submitted by candidate	DD/MM/YY

Task

Assessment themes:

- Health and safety
- Systems and components
 - Installation
 - Decommissioning
- Reports and information (commissioning checklist)
- Inspecting and testing of systems and components
- Handover and communication

You will have access to your drawing(s) and plans from Task 1.

Your tutor/assessor will ensure that systems are fully decommissioned, and walls prepared, prior to you beginning installation.

a) Install the sanitary appliances, handrail set and macerator, in accordance with your drawing and as agreed by your tutor/assessor.

Hot and cold pipework should be 100 mm centre to centre.

All pipework should be clipped directly to the wall surface with the pipe brackets at a maximum 300 mm spacing to demonstrate the ability to clip competently.

Marking out and final measuring of installed components and pipework should be within +/- 2 mm.

The macerator should be installed as per manufacturer's instructions.

The handrail set should be installed as per Approved Document M.

Waste pipes should be installed to the correct fall.

Hot and cold supplies should be installed level and plumb.

WC should be installed as per manufacturer's instructions.

WHB should be installed to recommended height for the setting and as per manufacturer's instructions.

Hot water must be supplied via a blending valve that is set appropriately.

There should be no burns, scorches or excessive marking to walls/property.

The finished product should be aesthetically pleasing.

Good housekeeping should be maintained throughout the assessment.

b) Connect the electrical supply to the macerator from a suitably supplied fused spur connection following the safe isolation procedure.

You must connect the electrical supply to the macerator from a suitably supplied isolator.

The safe isolation procedure should be followed and must be directly observed by your tutor/assessor.

All power, interconnecting and control wiring must be in accordance with manufacturer's requirements and meet current UK regulations.

c) Commission the system and hand over to customer.

Once the installation has been completed, you must commission the system and hand over to customer.

The system must be commissioned as per the Commissioning Checklist template provided, with all the data recorded in full.

Your tutor/assessor must observe you carrying out the commissioning checks detailed in the Commissioning Checklist template.

You must record all data in full on the Commissioning Checklist template.

Following commissioning and testing, you will hand over to the customer. The handover should include:

- Demonstration of system operation.
- Maintenance requirements.

Your tutor/assessor will act as the customer during the handover and will capture notes on your performance.

d) Decommission the system.

Once your tutor/assessor has checked and verified the system and handover is complete, you must decommission the system.

Decommissioning procedure:

- Isolate electricity supply to the system as appropriate.
- Isolate water supply.
- Apply warning notices and signs.
- Drain system to a suitable location.
- Remove required pipework and appliances.
- Cap pipework sections as required.
- Repair and paint wall surfaces as required.

Additional evidence of your performance that must be captured for marking:

Tutor/assessor observations of:

- Health and safety.
- Installation of system and components.
 - Whether tolerances have been met for the measurement of pipework.
 - Whether there are excess/waste materials caused by inaccurate measurements.
 - Use of tools (bending and cutting equipment) and piping skills.
 - Results of tool usage.
 - The use of heat mats whilst soldering and the quality of pipework fabrication.
- Safe isolation
- Commissioning.
- Handover to customer.
- Decommissioning.

Photographs taken by your tutor/assessor at various stages of the task.

Candidate evidence

Completed commissioning checklist

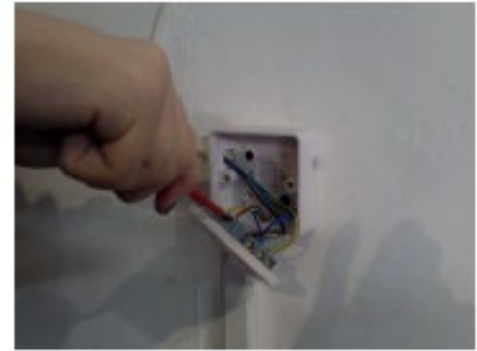
Sanitation Commissioning Sheet		
Address	[college name]	
Engineer's Name	[candidate name]	
Date	DD/MM/YY	
Soundness Test <i>Record pressure and duration</i>	5 bar 30 minutes	
Air Test: AGDS <i>Record pressure and duration</i>	38mm water gauge for 3 minutes	
Appliance 1:	Flow Rate: 15 Lpm	Outlet Temperature: 48°C
Appliance 2:	Flow Rate:	Outlet Temperature:
Appliance 3:	Flow Rate:	Outlet Temperature:
Appliance 4:	Flow Rate:	Outlet Temperature:
Appliance 5:	Flow Rate:	Outlet Temperature:
Check appliances for self-siphonage Y/N	Yes	
Check appliances for induced siphonage Y/N	Yes	

Performance test Satisfactory Y/N	Yes
Notes:	

Photographic evidence











Completed PO Form

Practical Observation (PO) Form (Task 2)

8710-36 T Level Technical Qualification in Building Services Engineering for Construction

8710-356 Plumbing Engineering (Summer 2024)

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234
Date	DD/MM/YY

Provider name	<provider name>
City & Guilds Provider No.	999999a

Task 2 assessment themes:

- Health and safety
- Systems and components
 - Installation
 - Decommissioning
- Reports and information (commissioning checklist)
- Inspecting and testing of systems and components
- Handover and communication

Record observation notes below to inform internal marking and external moderation. Notes must be detailed, accurate and differentiating which use terminology from the mark grid along with specific examples observed. Notes must identify areas of strength and weakness, distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.

Assessment theme	Assessor observation notes
Health and safety <ul style="list-style-type: none">• Risk assessment• Risk mitigation• Harm and probability factors• Adherence to health and safety (including safe isolation)	<i>Adhering to risk assessment during installation</i> <p>Candidate checked risk assessment prior to commencing the installation tasks.</p> <p>Candidate was wearing appropriate PPE.</p> <p>Candidate worked safely throughout the installation process and maintained a tidy and safe working environment.</p> <p>Candidate followed correct electrical safe isolation procedures, using a voltage tester, and proving unit, prior to making the electrical cable connection from the macerator to the pre-installed fused spur.</p>

<p>Systems and components (installation)</p> <ul style="list-style-type: none"> • Measurements • Sequencing • Tolerances • Tools • Skills <p>Systems and components (decommissioning)</p> <ul style="list-style-type: none"> • Sequencing • Disposal • Waste removal • Techniques and finish 	<p>Candidate installed the system components and pipework in accordance with the layout and dimensions shown in the drawings produced in Task 1.</p> <p>Candidate showed good tool skills, using appropriate tools for each task.</p> <p>Candidate used a range of pipe fittings appropriate to the pipework installation tasks, including push-fit, compression and end-feed solder jointing methods.</p> <p>Candidate dressed the washbasin and WC suite prior to the pipe work installations.</p> <p>Candidate ensured electricity supply was safely isolated and installed the macerator in position and made the waste pipe connection to the SVP.</p> <p>Candidate marked out the position of the washbasin and fitted the wall brackets. The candidate hung the washbasin and checked for level; it was within the tolerance +/- 2mm.</p> <p>Candidate marked out the hot and cold-water pipework runs from the incoming hot and cold-water service valves to the wash basin and WC.</p> <p>Candidate installed the WC pan to the macerator and secured the WC cistern to the WC pan and check for level before securing it to the wall.</p> <p>Candidate installed the pipework runs from the incoming hot and cold-water supplies to the wash basin and WC.</p> <p>Candidate installed the waste pipe from the macerator to the washbasin and secured with saddle clips.</p> <p>Following the inspection and testing detailed below the candidate isolated the hot and cold-water supplies and the electricity supply to the macerator and fully decommissioned the system.</p> <p>The decommissioned pipework, fitting and WC suite components were neatly organised prior to disposal of the pipework off cuts to the copper and plastic recycle bins.</p>
<p>Inspecting and testing of systems and components</p> <ul style="list-style-type: none"> • Commissioning tests • Commissioning checks • Reference to / follows manufacturer's instructions 	<p>Candidate carried out a visual inspection of the pipework and pipework connections prior to cold filling the system.</p> <p>The system was pressure tested at main pressure for 30 minutes and checked for leaks. There were some minor micro leaks at the compression joints which were dealt with prior to fill in and testing the hot water circuit from the wash basin. The system was checked again for leaks.</p> <p>The WC cistern fill valve was checked for correct fill-level.</p> <p>The macerator was commissioned and tested in accordance with the manufacturer's instructions and the WC cistern was flushed and checked for correct operation.</p> <p>The wash basin was trap was checked for induced and self-siphonage and did not lose its trap seal.</p>

	<p>The flow rate was recorded at the cold tap to the washbasin and recorded in the commissioning test sheet.</p> <p>The hot water temperature was taken at the hot water tap outlet and recorded in the commissioning test sheet. The TMV temperature at the outlet was checked against the manufacturers factory set temperature.</p> <p>The handrails to the cloakroom suite installation were installed in accordance with the dimensions recorded in the drawings produced in Task 1 and checked against the requirements of Approved Document Part M.</p> <p>The handrails were checked for vertical and horizontal level.</p> <p>The WC seat was fitted and secured to the WC pan.</p>
<p>Handover and communication</p> <ul style="list-style-type: none"> • Customer Care • Demonstration of system • Communication 	<p>The system was handed over to the customer (Assessor) however the explanation of the operation of the macerator was not provided and no reference was given to the manufacturers user instructions was given.</p> <p>The candidate did not point out that the hot water temperature would be lower than expected due to being controlled by a TMV.</p> <p>The flushing of the cistern was demonstrated, and the candidate did point out that as it was a disabled WC suite the seat had no closing lid.</p>

Any other aspects

Internal assessor signature	Date
<p>X _____</p>	<p>DD/MM/YY</p>

If completing electronically, double click next to the 'X' to add an electronic signature once the record is **finalised**.

Task 3 – Carry out maintenance

Assessment number (eg 1234-033)	8710-356
Assessment title	Plumbing Engineering Occupational Specialism

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234

Provider name	<provider name>
City & Guilds provider No.	999999a

Task(s)	3
Evidence title / description	A written report of the maintenance activity.
Date submitted by candidate	DD/MM/YY

Task

Assessment themes:

- Health and safety
- Reports and information (written report of the maintenance activity)
- Handover and communication
- Working with faults

You must:

a) Discuss the fault with the customer, investigate and diagnose.

You must discuss the fault with your tutor/assessor to determine the cause of the fault and suggest appropriate methods for repair. You will be assessed on your ability to ask relevant questions to determine the fault and to select a suitable solution.

Your tutor/assessor will act as the customer during the maintenance discussion and record any feedback.

You will inspect a pre-installed operational twin impellor shower booster pump with faults placed on various components for you to diagnose and locate.

You will carry out testing to identify one fault as given by your tutor/assessor and replace the faulty component. If you do not initially identify the faulty component, you are allowed to be prompted by your tutor/assessor, but this will be reflected in the marking.

Once you have diagnosed the fault, you should check with your tutor/assessor to ensure this has been done correctly. If you require additional feedback and guidance, this will be reflected in the marking.

b) Produce a written report detailing the maintenance activity.

Once fault diagnosis is confirmed, you must produce a written report detailing the maintenance activity to include:

- Details of the fault.
- How to repair the fault.
- Details of how to reinstate the system.

c) Repair and rectify fault

This task requires you to:

- Isolate and/or drain down the system safely.
- Apply temporary continuity bonding as required.
- Install replacement component as required.
- Refill system and commission in line with manufacturer's instructions.

Additional evidence of your performance that must be captured for marking:

Tutor/assessor observations of:

- Health and safety.
- Communication with customer.
- Working with faults.
 - Results of tool usage, taking into consideration any tooling marks.
 - Re-commissioning of the system following component replacement.
- Handover.

Photographs taken by your tutor/assessor at various stages of the task.

Candidate evidence

Completed written report of maintenance activity

Fault:

Description of fault diagnosis

Customer complains showing is running with very low pressure and that it stops and starts.

Tested shower pump flow switch with magnet, motor runs.

It is a faulty flow switch.

Possible solutions

Safely isolated the electricity supply.

Removed control cover to the pump

Actions taken to rectify fault

Removed existing flow switch from the terminal block and replaced with a new one from the manufacturer.

Replaced electrical cover and recommissioned the system.

Tested pump at shower valve, all working okay.

Explained to the customer the reason for the fault and that the system was all repaired and safe to use.

Completed PO Form

Practical Observation (PO) Form (Task 3)

8710-36 T Level Technical Qualification in Building Services Engineering for Construction

8710-356 Plumbing Engineering (Summer 2024)

Candidate name	<first name> <surname>
City & Guilds candidate No.	ABC1234
Date	DD/MM/YY

Provider name	<provider name>
City & Guilds Provider No.	999999a

Task 3 assessment themes:

- Health and safety
- Reports and information (written report of the maintenance activity)
- Handover and communication
- Working with faults

Record observation notes below to inform internal marking and external moderation. Notes must be detailed, accurate and differentiating which use terminology from the mark grid along with specific examples observed. Notes must identify areas of strength and weakness, distinguish between different qualities of performance and to facilitate accurate allocation of marks once all evidence has been submitted.

Assessment theme	Assessor observation notes
Health and safety <ul style="list-style-type: none">• Risk assessment• Risk mitigation• Harm and probability factors• Adherence to health and safety	<p><i>Adhering to risk assessment whilst carrying out maintenance</i></p> <p>Candidate visually risk assessed the work area prior to commencing the maintenance tasks.</p> <p>Candidate was wearing appropriate PPE.</p> <p>Candidate worked safely throughout the maintenance process and maintained a tidy and safe working environment.</p> <p>Candidate followed correct electrical safe isolation procedures, using a voltage tester, and proving unit, prior to testing the shower pump supply and flow switch.</p>

<p>Handover and communication</p> <ul style="list-style-type: none"> • Customer Care • Communication 	<p><i>Discussing the fault with the customer</i></p> <p>The candidate explained to the customer (assessor) what the nature of the fault had been and what they had done to repair it.</p> <p>The candidate demonstrated that the shower pump was now working correctly.</p> <p>The candidate told the customer the shower was now safe to use.</p>
<p>Working with faults</p> <ul style="list-style-type: none"> • Systematically / logically • Knowledge of fault-finding techniques • Reference to / follows manufacturer's instructions • Fault rectification • Efficiency / accuracy • Use of tools 	<p>Assessor acting in role of customer complains that the shower is running with very low pressure.</p> <p>Candidate identified the fault as being a faulty flow switch. Candidate consulted the manufacturer's instructions to see how to check and or change the flow switch.</p> <p>Candidate isolated the electricity supply and locked and labelled. Candidate removed fuse from fused spur supply.</p> <p>Candidate removed the defective flow switch and replaced with new.</p> <p>Candidate recommissioned the electricity supplies and tested the pump. The pump was operating correctly with good pressure to the shower head.</p>

Any other aspects

Internal assessor signature	Date
<p>X _____</p>	<p>DD/MM/YY</p>

If completing electronically, double click next to the 'X' to add an electronic signature once the record is **finalised**.

Get in touch

The City & Guilds Quality team are here to answer any queries you may have regarding your T Level Technical Qualification delivery.

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