T-LEVELS | Institute for Apprenticeships & Technical Education

T Level Technical Qualification in Building Services Engineering for Construction (8710-35/36)

8710-355 Heating Engineering Occupational Specialism Candidate Pack (Brief)

Summer 2023

Version 1.1

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1. Assessment

This assessment is for the Heating Engineering Occupational Specialism component of the Technical Qualification. This pack consists of a practical assignment that includes a project brief including drawing(s) and diagram(s) as necessary, along with several tasks for you to complete.

2. Candidate Guidance

General guidance

This is a formal assessment that you will be marked and graded on. You will be marked on the quality and accuracy of the work you produce. It is therefore important that you carry your work out to the highest standard you can.

Plagiarism

Plagiarism is the failure to acknowledge sources properly and/or the submission of another person's work as if it were your own. Plagiarism is not allowed in this assignment.

This assignment is an assessment of your abilities, so the work submitted must be all your own and carried out under the conditions stated. You will be asked to sign a declaration that you have not had any help with the assignment. Your tutor/assessor is allowed to give you some help understanding the instructions if necessary, but they will record any other guidance you need, and this will be taken into account during marking.

Where research is allowed, your tutor/assessor must be able to identify which work you have done yourself, and what you have found from other sources. It is therefore important to make sure you acknowledge sources used and clearly reference any information taken from them (e.g. providing as a minimum a list of web addresses / books / articles etc used).

Timings and planning

You are advised to study the details of the assessment before starting.

You should check with your tutor/assessor that you have all the relevant materials, equipment and information/data sources that you need before starting the assessment.

You should take care when planning to make sure you have divided the time available between parts of the assignment tasks appropriately. Timings for tasks are provided within this pack to support with planning and time allocation.

If you have a good reason for needing more time, you will need to explain the reasons to your tutor/assessor and agree a new deadline date. Changes to dates will be at the discretion of the tutor/assessor, and they may not mark work that is handed in after the agreed deadlines.

Any requested changes to deadlines must be agreed by both your tutor/assessor and City & Guilds.

Word counts

Typical word counts are to be used as approximates for guidance to support the production of sufficient evidence. The marking will relate to the quality of the evidence produced and not whether the word count have been met.

Health and Safety

You must always work safely, in particular while you are carrying out practical tasks.

You must always follow any relevant Health and Safety regulations, Risk Assessments and codes of practice in line with centre requirements.

If your tutor/assessor sees you working in a way that is unsafe for yourself or others, they will highlight the issue and ask you to stop the task immediately. Your tutor/assessor will not be able to reassess you until they are sure you are ready for assessment and can work safely.

Presentation of work

Presentation of work must be neat, legible and appropriate to the task, and evidence required for submission.

You should make sure that each piece of evidence including any forms are clearly labelled with your name and the assignment reference.

All electronic files must be given a clear file name that allows your tutor/assessor to identify it as your work.

Written work may be word-processed or handwritten unless stated otherwise.

All sketches and drawings should be neat, tidy and annotated.

Calculations should be set out clearly, with all working shown, as well as any assumptions made. You should use appropriate units at all times, consistent with the requirements of the assignment.

Instructions for this assignment

Ensure you read all the provided assessment information issued by the tutor/assessor.

You must work independently and not share your work with any other candidates in these supervised assessment sessions.

Your work will be kept secure during any supervised breaks that are taken.

Internet access is **not** allowed, unless otherwise stated in the task.

You must complete all the tasks and present all evidence that is detailed in each task.

This assessment booklet contains the assignment brief.

The tasks have been separated into individual documents which will be handed to you at the start of each task.

Within each task you will find the following:

- **Conditions of assessment:** This will tell you the duration and rules you must follow when completing a task.

- **What must be produced for marking:** This describes the evidence you must submit when the task is completed. Be aware failure to submit any evidence requested can adversely affect your overall mark for the assessment.
- **Additional evidence of your performance that must be captured for marking:** This describes other forms of evidence that will be collected by the tutor/assessor to support the marking of your performance. This will often include but not limited to photographic and video evidence

Assessment themes

You will be assessed against a number of assessment themes. This assignment has a total of 90 marks. The table below shows the weighting of the marks for each of the performance outcomes.

Performance outcome	Typical knowledge and skills	Weighting
Install heating systems	Displays a breadth of knowledge and practical skills that enables them to complete the given installation tasks successfully. Has the technical skills to use tools and materials safely and in logical order in relation to a plan.	36%
Commission heating systems	Working in a safe manner, carrying out testing and interpreting test results, use of tools and equipment, use of diagnostic equipment, working with documentation (manufacturer's instructions, building regulations), carrying out tasks in clear and logical sequence, carrying out clear record keeping of test results.	24%
Maintain heating systems	Applying knowledge and understanding through practical skills to solve a particular scenario/problem – justifying decisions/approaches taken e.g. materials, techniques, appropriate protection of customer property and effective use of materials, consideration of costs and impacts to environment.	26%
Decommission heating systems	Logical and systematic approach to task, clear consideration to environmental sustainability and recycling of materials, clear and practiced use of the techniques of making building fabric repairs to restore work area to pre-installation condition, including correct selection of materials and finish products.	14%

3. Assignment brief

You have been called to a children's nursery to undertake the planning and installation of pipework to an existing boiler and a S Plan Plus sealed central heating system with a new low surface temperature radiator circuit in accordance with the drawing (Figure 1).

As part of this work, you will be required to carry out a full survey of the proposed installation, including planning activities, measurements and calculations.

The customer has identified a suitable space and has requested the following:

- the installation of a low surface temperature radiator supplied with copper pipework
- the installation of pipework to existing boiler
- the installation of the S Plan Plus heating controls
- the installation of a magnetic filter

The layout of the boiler and radiator positions is shown in **Figure 1**. The boiler, unvented cylinder and underfloor heating circuit are pre-installed.

Your tutor/assessor will notify you of the requirements of the installation and a plan of the proposed space and location of existing services where you will carry out the installation.

The installation must include:

- the correct dressing of the radiator
- magnetic filter installation
- copper pipework to the radiator circuit
- all associated thermostatic and lock-shield radiator valves as well as plugs and vents
- associated 2 port control valves
- wiring of the 2 port valves into the wiring centre

Once your installation has been completed, commissioned and checked to the customer's satisfaction you are required to decommission the installation.

After a period of time, the neighbour of the original customer calls to notify you that their central heating is not working correctly. You are required to discuss the maintenance activity with the new customer, diagnose the fault, produce a written report and carry out the required repair work.

Figure 1

This assignment has a total time allocation of **20 hours**.

Get in touch

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

Should you require assistance, please contact us using the details below:

Monday - Friday | 08:30 - 17:00 GMT

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E: **technicals.quality@cityandguilds.com**

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Web chat available **here**.

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