8202-35 Level 3 Advanced Technical Diploma in Plumbing (450)

2025

Qualification Report

Version and date	Change detail	Section
V2.0 14/08/2025	Qualification achievement data updated	Qualification grade distribution

Contents

Introduction

This document has been prepared by the Chief Examiner and Principal Moderator; it is designed to be used as a feedback tool for centres in order to enhance teaching and preparation for assessment. It is advised that this document is referred to when planning delivery and when preparing candidates for City & Guilds Technical assessments.

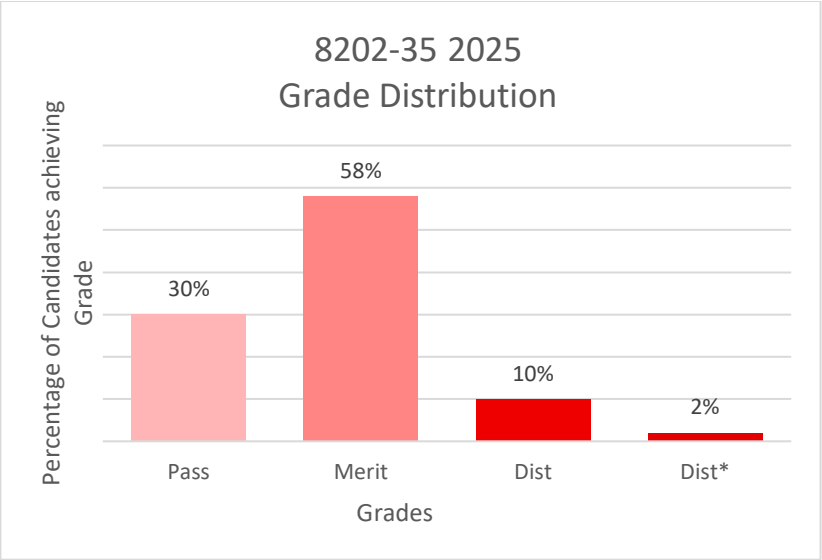
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2025 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments:

- 8202-535 Level 3 Plumbing – Theory Exam
    - March 2025 (Spring)
    - June 2025 (Summer)
- 8202-036 Level 3 Plumbing – Synoptic Assignment

Qualification Grade Distribution

The grade distribution for this qualification is shown below:



Please note City & Guilds will only report qualification grades for candidates who have achieved all of the required assessment components, including Employer Involvement, optional units and any other centre assessed components as indicated within the Qualification Handbook. The grade distribution shown above could include performance from previous years.

Theory Exam

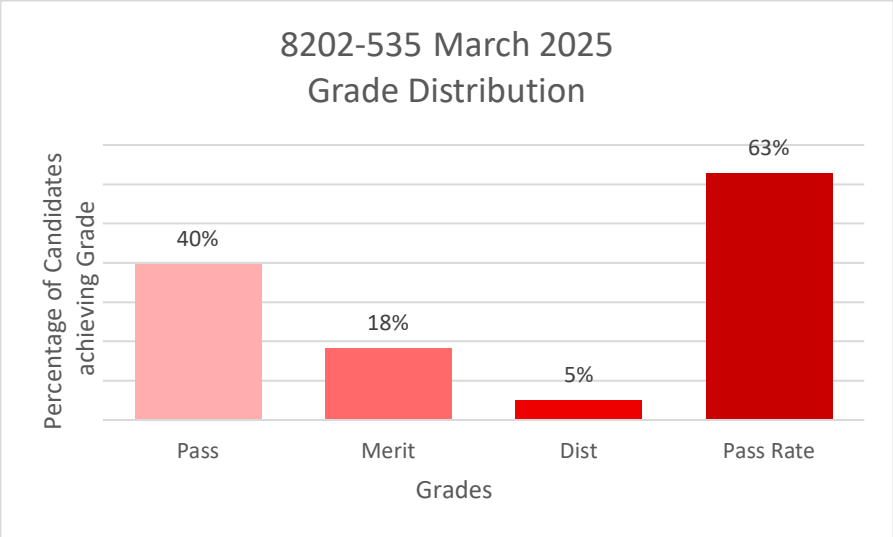
Grade Boundaries

Assessment: 8202-535
Series 1: March 2025 (Spring)

Below identifies the final grade boundaries for this assessment, as agreed by the awarding panel.

Total marks available	60
Pass mark	23
Merit mark	33
Distinction mark	43

The graph below shows the distribution of grades and pass rates for this assessment.

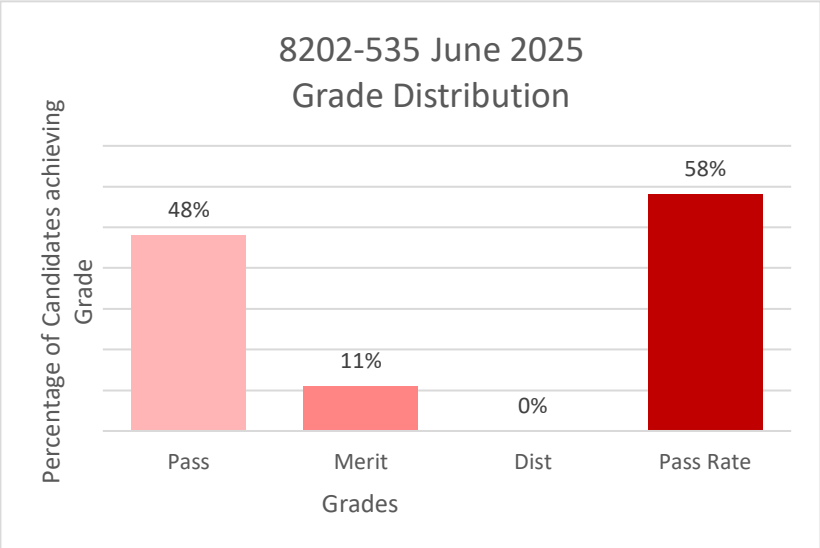


Assessment: 8202-535
Series 2: June 2025 (Summer)

Below identifies the final grade boundaries for this assessment:

Total marks available	60
Pass mark	24
Merit mark	34
Distinction mark	44

The graph below shows the approximate distributions of grades and pass rate for this assessment using the above boundary marks:



Chief Examiner Commentary

General Comments on Candidate Performance

Assessment component: 8202-535

Series 1: March 2025

This exam covers the following units:

- 331 Cold water system planning and design
- 332 Hot water system planning and design
- 333 Central heating system planning and design
- 334 Sanitation system planning and design
- 335 Environmental technology systems

The exam consists of a mixture of short answer questions and an Extended Response Question. The questions are broken down into various assessment objectives that cover the breadth of units examined. These are AO1 (recall of knowledge), AO2 (understanding), and AO4 (application of knowledge and understanding), which is assessed in the Extended Response Question (ERQ).

Candidates' overall performance for this series has declined compared to the March 2024 series. This series' paper was found to be slightly more demanding, and grade boundaries were adjusted accordingly.

Higher-performing candidates were able to achieve higher marks for questions assessing their recall of knowledge, understanding, and applied knowledge and understanding across most of the units examined. In contrast, the lower-performing candidates were able to achieve marks for most recall of knowledge questions but did not perform as well as the higher-performing candidates on questions assessing their applied knowledge and understanding.

Areas of strength in recall of knowledge and understanding were evident for questions focused on cold-water system planning and design, specialist cold water components, and the requirements of backflow protection in plumbing systems. Most candidates achieved marks when asked to:

- Identify a method used to provide a private water supply to a specified dwelling type.
- Identify methods used to prevent cross-connection in systems.
- Explain the working principles of a specified cold water system component.
- Define the terminology used when selecting and applying a backflow prevention device.

Candidate performance was also strong for recall of knowledge and understanding questions focused on hot water system planning and design, central heating system planning and design, and environmental technology. Most candidates achieved marks when asked to:

- Describe the working principles of a specified specialist component used in a hot water system.
- Describe the layout requirements for a specified hot water system component in an unvented hot water system.
- Name the correct source of information that must be referred to when designing a hot water system.
- Identify the different types of central heating control systems from their images.
- Describe the working principles of a specified component in an underfloor heating system.

Areas of the examination where candidates demonstrated weaker recall of knowledge and understanding included questions focused on legislation relating to the installation and maintenance of cold-water systems, the requirements for backflow protection in plumbing systems, understanding hot water systems and their layout requirements, and understanding the types of sanitation systems and their layout requirements. Most candidates were unable to achieve marks when asked to:

- Provide the notification periods a water undertaker must serve an owner or occupier for specified works.
- Identify where specified types of non-mechanical backflow prevention devices are installed.
- Identify recommended hot water system design temperatures within hot water systems.
- Describe how a specified component could be used as an alternative to a secondary circulation system.
- Explain the working principles of a specified specialist sanitary component.
- Calculate sanitary provision requirements for specified sanitation pipework installations.

The Extended Response Question allowed candidates to demonstrate their knowledge and understanding across the qualification range. High-performing candidates provided sound reasoning and justification for their selection of system types, making informed and accurate links to the question brief. They considered the advantages and disadvantages of various system designs within the constraints of the question brief. Candidates who performed well gave detailed and accurate responses to support their choices and reasoning. In contrast, candidates in the lower scoring bands made suitable selection choices but lacked clarity in their reasoning. Many did not provide justification for their choices or reference other suitable systems that might have been less appropriate for providing a hot water system linked to the question brief.

Candidates should be reminded to read the questions fully and carefully, ensuring they understand the requirements of the question and align their answers to the marks available. Candidates also need to be reminded of the need to show their full depth/ breadth and range of recall of knowledge (AO1) and understanding (AO2) across all topics. During the ERQ (AO4) candidates should show they understand and have analysed the scenario fully and show a confident understanding, giving justifiable reasoning behind their answers to fully achieve the marks available.

Centres need to ensure candidates have had ample exam practice and are coached on aspects of examination techniques, such as identifying keywords and how to respond to different command verbs (e.g. State, Explain, Describe, Discuss). For example, when asked to describe a working principle of a component, some candidates stated the component's purpose.
Centres are also advised to ensure that candidates fully develop their knowledge and understanding around sanitation system types and preparing candidates to develop deeper understanding of the requirements for installation notice periods to be given to the water undertaker and the specific installation systems for cold-water backflow protection in plumbing systems.

Series 2: June 2025

This exam covers the following units:

- 331 Cold water system planning and design
- 332 Hot water system planning and design
- 333 Central heating system planning and design
- 334 Sanitation system planning and design
- 335 Environmental technology systems

The exam consisted of a mixture of short answer questions and an Extended Response Question (ERQ). Questions were mapped to assessment objectives covering the breadth of units examined: AO1 (recall of knowledge), AO2 (understanding), and AO4 (application of knowledge and understanding), with AO4 assessed through the ERQ.

Candidate performance in this series showed improvement compared to the June 2024 series.

Higher-performing candidates achieved strong marks across questions assessing recall, understanding, and application of knowledge. In contrast, lower-performing candidates generally performed well on recall-based questions but struggled with those requiring applied knowledge and understanding.

Candidate performance was particularly strong in recall and understanding questions related to cold water system planning and design. Most candidates successfully:

- Identified notification requirements.
- Explained the working principles and functions of specified specialist cold water system components.
- Stated fluid risk levels for specified fluid categories.

Strong performance was also observed in questions related to hot water system planning and design, central heating systems, and environmental technology. Candidates commonly achieved marks when asked to:

- Describe the working principles of specialist hot water system components.
- Identify installation requirements to ensure compliance with legislation.
- Describe operational requirements for hot water system components.
- Identify central heating control components from images.
- Describe pipework layout requirements and features.
- Explain operating principles of control systems.

Weaker performance was noted in questions requiring application of design techniques understanding of components in multi-storey dwellings, and knowledge of permitted development. Many candidates struggled to:

- Describe treatment and classification of private water supplies.
- Identify sources of information used in design calculations.
- Demonstrate understanding of permitted development legislation.

Performance in the sanitation system planning and design unit improved, with most candidates achieving marks on questions about sanitary facilities, equipment, and information sources used for system selection. However, many were unable to describe installation requirements for specified above-ground drainage and sanitation systems.

A significant proportion of candidates attempted the ERQ, with most responses falling into marking bands one and two. The ERQ allowed candidates to demonstrate knowledge and understanding across the qualification content. High-performing candidates provided sound

reasoning and justification for their selection of system types, making informed and accurate links to the question brief. They considered fundamental principles, system requirements, and the advantages and disadvantages of various designs, offering detailed and accurate responses. Lower-scoring candidates made broadly appropriate selections but lacked clarity and depth in their reasoning.

Candidates should be reminded to read questions carefully and align their responses with the marks available. In the ERQ (AO4), candidates should show confident analysis of the scenario and provide justifiable reasoning to fully access available marks.

Centres must ensure candidates receive sufficient exam practice and are coached in key examination techniques, such as identifying keywords and responding appropriately to command verbs (e.g., *State*, *Explain*, *Describe*, *Discuss*). Many candidates missed marks on multi-point questions due to brief, one-sentence responses.

Centres are also advised to support candidates in developing a thorough understanding of installation requirements for various sanitation systems and the implications of permitted development classifications on system design.

Synoptic Assignment

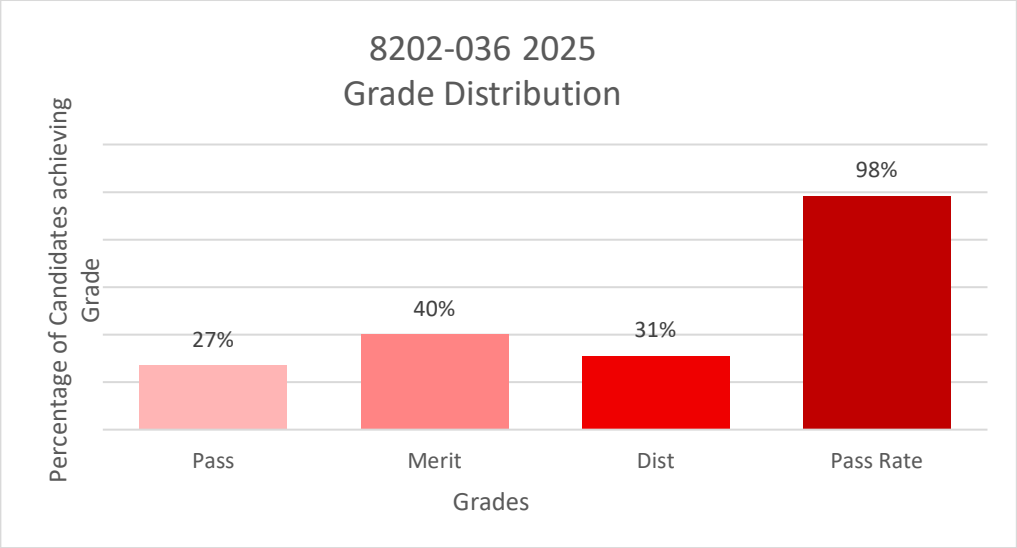
Grade Boundaries

Below identifies the final grade boundaries for this assessment:

Assessment: 8202-036
Series: 2025

Total marks available	60
Pass mark	23
Merit mark	33
Distinction mark	43

The graph below shows the approximate distributions of grades and pass rate for this assessment using the above boundary marks:



Principal Moderator Commentary

Candidate performance in the 2025 synoptic assessment series was strong overall. The assessment was deemed comparable to previous series in terms of demand, and the grade boundaries reflected this consistency.

The tasks provided candidates with ample opportunities to demonstrate their knowledge, understanding, and practical skills. The assessment offered a balanced platform for showcasing both technical proficiency and theoretical insight. Across the cohort, performance was generally good, with high-performing candidates exhibiting a high level of accuracy and competence.

In most submissions, candidates excelled in the design and planning aspects of the installation task, successfully identifying and calculating correct pipe sizing. Performance was also strong in the fault finding, rectification, and maintenance task, where the majority of candidates were able to diagnose faults, carry out safe isolation procedures, complete repairs, and test systems effectively.

Most candidates demonstrated sound recall of knowledge and understanding across the content range. Those in the high-scoring band showed excellent recall, confidently linking their knowledge to practical applications and completing tasks effectively.

Higher-performing candidates clearly articulated plumbing theories and concepts, explaining in their written reports the rationale behind specific procedures. In contrast, candidates in the lower-scoring band showed only basic understanding and often required prompting, particularly in tasks involving fault diagnosis and safe isolation.

Candidates in the high-scoring band demonstrated excellent practical skills aligned with industry standards. They planned and executed tasks with insight, considering future maintenance needs. However, candidates in the lower-scoring band met or fell below the minimum standard, particularly in pipework fabrication and soldering. Attention to detail and overall aesthetics varied across the cohort.

The assignment provided multiple opportunities for candidates to integrate their knowledge, understanding, planning, and practical skills. High-performing candidates successfully linked theory to practice. However, many candidates struggled to make these connections, which impacted their overall understanding of the subject.

Most candidates conducted a range of checks throughout the assignment. High-scoring candidates were thorough, completing tasks fully and presenting work that met industry standards.

Lower-performing candidates need to improve attention to detail, particularly in the installation task. Soldering skills varied significantly, highlighting a need for further development.
Although self-reflection has improved in recent series, candidates still miss opportunities to gain additional marks. Many did not consistently engage in critical self-reflection or identify areas for improvement. This task is designed not only to assess knowledge and understanding but also to encourage professional development.

Most centres demonstrated a strong understanding of qualification delivery and assessment. However, discrepancies remain in candidates' understanding of how to reflect on their own work. The evidence submitted by centres was generally robust, with photographic support materials aiding moderation. Centres are reminded to continue standardisation exercises to ensure consistent and fair marking.