

# 8202-535 Level 3 Plumbing – Theory Exam

March 2024

## Examiner Report

# Contents

Introduction .....	3
Theory Exam – March 2024.....	4
Grade Boundaries and Distribution.....	4
Chief Examiner Commentary .....	5

# Introduction

This document has been prepared by the Chief Examiner, it is designed to be used as a feedback tool, for centres to use in order to enhance teaching and preparation for assessment. It is advised that this document be referred to when preparing to teach and then again when candidates are preparing to sit examinations for City & Guilds Technical qualifications.

This report provides general commentary on candidate performance and 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 the **March 2024** examination series. It will explain aspects which caused difficulty and potentially why the difficulties arose, whether it was caused by a lack of knowledge, poor examination technique or responses that failed to demonstrate the required depth of understanding.

The document provides commentary on the following assessment.  
**8202-535 Level 3 Plumbing – Theory Exam**

# Theory Exam – March 2024

## Grade Boundaries and Distribution

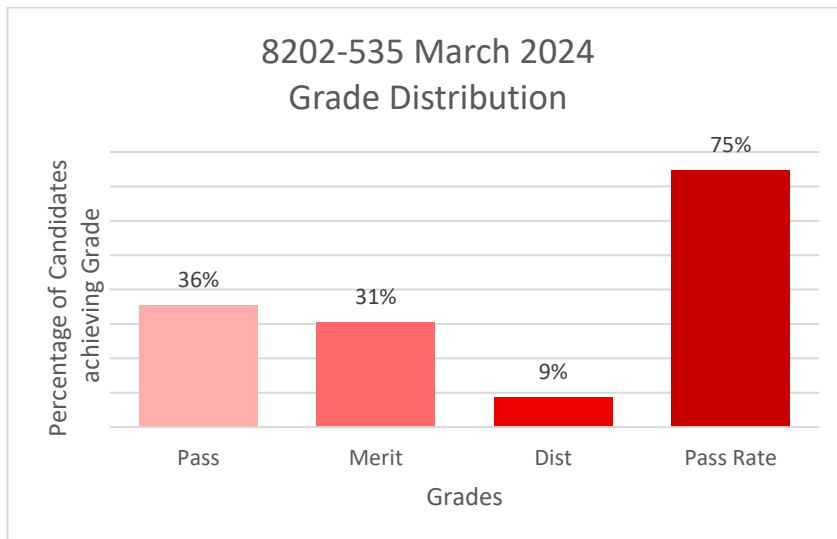
Assessment: 8202-535

Series: March 2024

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

<b>Total marks available</b>	<b>60</b>
Pass mark	24
Merit mark	34
Distinction mark	44

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



# Chief Examiner Commentary

## General Comments on Candidate Performance

**Assessment component: 8202-535**

**Series: March 2024**

This exam covers 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 is set as a mixture of short answer questions and an extended response question. The questions are broken down into a mixture of 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.

Candidates showed good knowledge and understanding in areas where the questions focused on theoretical learning that is directly reproduced in practical sessions, particularly installation and application processes. There were some gaps in responses around processes of planning and design. This shows differentiation in understanding concepts and principles across the cohort.

Areas of the examination where candidate performance was strong, included:

- System components. Most candidates were able to explain the basic working principles of infrared operated taps and pressure reducing valves; and describe the function of a temperature relief valve.
- Micro-renewable energy and water conservation technologies. Most candidates were able to achieve marks for describing the basic operating principles of an air source heat pump; and describing the working principles of a rainwater harvesting system. The identification of relevant regulations also performed well in this area and most candidates were able to name the regulations that apply when installing a micro-renewable energy and water conservation system.

Areas of the examination where candidate performance was weak, included:

- Information sources. Most candidates, when asked to recall where they would find details on the operation of a hot water pump, responded by listing the building regulations approved documents instead of the expected response of the manufacturer's instructions.
- Legislation relating to the installation and maintenance of cold-water systems. Most candidates were unable to name the regulations that control the installation and use of water systems from a private source.
- Layout requirements for underfloor heating and sanitation systems.
- Understanding the requirements for backflow protection in plumbing systems.

The ERQ (Extended Response Question) asked the candidate to discuss the system requirements and the suitability of different hot water system types for a given scenario. Most responses lacked key details which prevented candidates from achieving the higher mark band. For example, most responses only discussed the type of hot water system that the candidate felt

was most suitable for the installation. Candidates who achieved the higher mark band were able to discuss a range of suitable design layouts and system types including renewable energy systems; and then compare the installation benefits before reaching a conclusion and providing their justification.

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 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 access 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 explain the term 'whole site protection' in relation to backflow prevention, some candidates proceeded to describe the purpose of backflow prevention instead of the expected response to the question asked.

Centres are also advised to ensure that candidates fully develop their knowledge and understanding around the impact of building layouts and sanitation system types and preparing candidates to develop deeper understanding on the types of cold-water protection and their categories of protection.