



8202-025/525 Level 2 Plumbing – Theory Exam

March 2024

Examiner Report

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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.
8202-025/525 Level 2 Plumbing – Theory exam

Theory Exam – March 2024

Grade Boundaries and Distribution

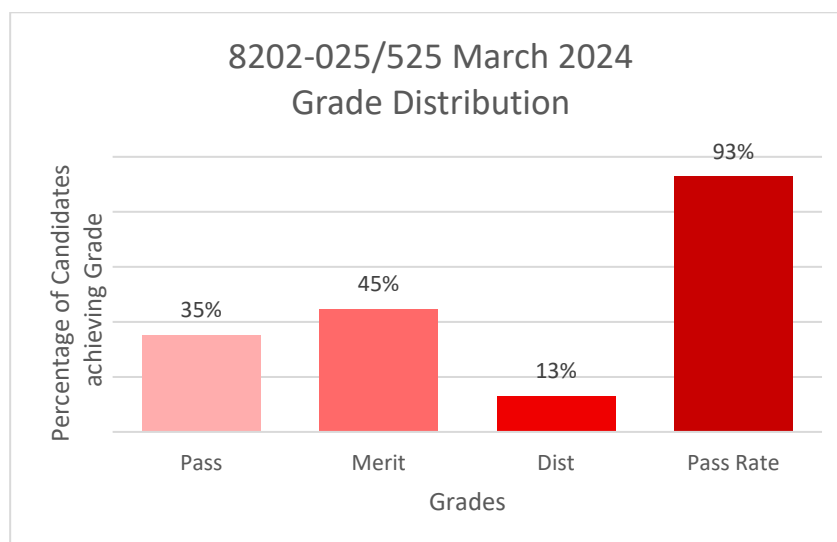
Assessment: 8202-025/525

Series: March 2024

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

Total marks available	60
Pass mark	24
Merit mark	33
Distinction mark	43

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



Chief Examiner Commentary

General Comments on Candidate Performance

Assessment component: 8202-025/525

Series: March 2024

This exam covers units:

- 211 Health and safety and industry practices
- 212 Plumbing processes
- 213 Electrical and scientific principles
- 214 Cold water
- 215 Hot water
- 216 Central heating
- 217 Sanitation and drainage

The exam is designed to allow candidates to demonstrate a broad range of subject knowledge within the qualification.

This 60-question exam paper in a multiple-choice format was set at an appropriate level and in line with the test specification. A mixture of AO1 (recall of knowledge), AO2 (understanding) and AO4 (applied knowledge and understanding) questions were used across the breadth of units examined.

Candidates demonstrated good knowledge and understanding in areas where the questions focused on theoretical learning that is directly reproduced in a practical setting; particularly around health and safety and industry practices where most candidates were able to demonstrate their knowledge and understanding in the following areas.

- Health and safety legislation in the plumbing industry.
- The types of notices issued by the Health and Safety Executive (HSE)
- Methods to reduce the risk of injury from hazards on a construction site.
- Classification of a hazardous substance.
- Identification of an asbestos based material.
- Electrical supply voltages used on site.

Other areas of the examination where candidates' knowledge and understanding performance was strong, included:

- Plumbing processes. Candidates were able to correctly identify, from images, the types of clips used when installing and securing copper and steel pipework. Installation methods also performed well with most candidates responding correctly to a question on the installation method for the prefabrication of pipework.
- Hot water systems and components. Most candidates were able to identify the correct source of information to refer to when preparing and replacing hot water system components; and system safety and efficiency where candidates were able to identify the component used to regulate the temperature of water supplied to a bath.
- Cold-water supply to dwellings. Candidates were able to correctly identify types of water supply, water treatment processes and the fluid category of wholesome water.
- Electrical and scientific principles. Most candidates were able to identify the temperature that water freezes, and the basic principle of electron flow theory.
- Central heating. Most candidates were able to identify the type of heat emitter from an image; and understand the notification requirements when preparing to decommission a central heating system in an occupied building.

- Systems and materials used in gravity rainwater systems, gutter systems, and components.

Areas of the examination where candidates' knowledge and understanding performance was weak, included:

- Electrical and scientific principles. Understanding questions around materials used in the plumbing industry did not perform well, for example. candidates were unable to correctly respond to a question on the physical property 'malleability.' An area of concern was identified around units and formulas, where candidate responses were poor when they were asked the basic electrical calculation for an over-current protection device.
- Decommissioning a hot water system did not perform very well, most candidates were unable to correctly respond to a question on the reason sections of pipework are temporarily capped off when decommissioning a hot water system.
- Central heating, where most candidates were unable to correctly respond to questions around the filling and venting of an open vented system and the filling and venting of a sealed system.
- Sanitation and drainage, and cold-water layout features.

There was evidence of good, applied knowledge for this series. These AO4 questions were scenario based and allowed candidates to display both their breadth and depth of knowledge. Candidates were able to correctly respond to most of the questions around plumbing processes. Candidates performed well for questions on the correct order of tasks for installing copper pipework and how pipework would be fabricated. Candidate responses around central heating performed poorly particularly around questions on the components of an S Plan+ system and the filling of a central heating circuit. An area which did not perform well was around health and safety where most candidates responded incorrectly to the question asking for the correct order of the safe isolation procedure.

To improve candidate performance, centres are recommended to reinforce the underperforming topics when delivering the underpinning knowledge of these topic areas. Centres should continue to emphasis technical and theoretical knowledge aspects, with a focus on terminology.

Candidates must ensure they fully read the questions carefully before selecting their responses. They should also structure their time appropriately to ensure they have enough time to read the options and make their selection.