

# 8202-20 Level 2 Technical Certificate in Electrical Installation

2023

**Qualification Report**

# Contents

Introduction .....	3
Qualification Grade Distribution .....	4
Theory Exam .....	5
8202-020/520 – Electrical Installation.....	5
Grade Boundaries.....	5
Chief Examiner Commentary .....	7
Synoptic Assignment .....	9
8202-021 – Electrical Installation .....	9
Grade Boundaries.....	9
Principal Moderator Commentary.....	10

# 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.

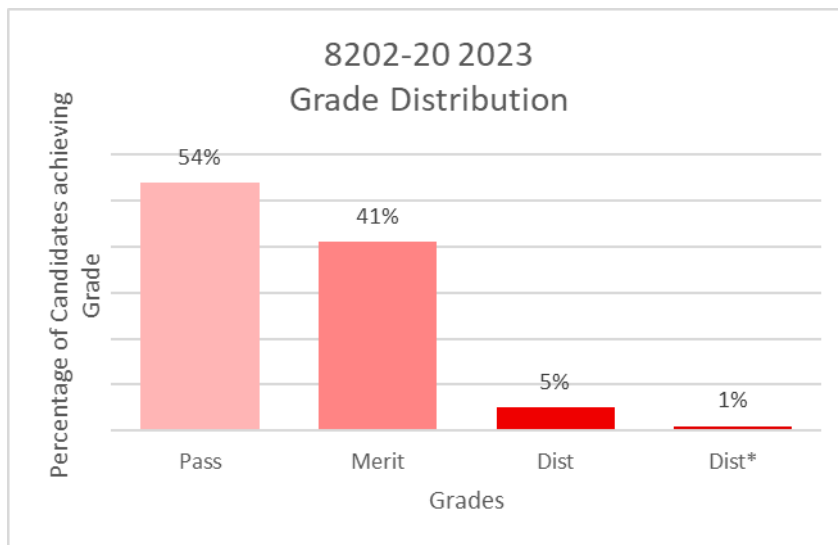
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2023 academic year. It will explain aspects which caused difficulty and potentially why the difficulties arose.

The document provides commentary on the following assessments:

- 8202-020/520 Level 2 Electrical Installation – Theory Exam
  - March 2023 (Spring)
  - June 2023 (Summer)
- 8202-021 Level 2 Electrical Installation - Synoptic Assignment

# Qualification Grade Distribution

The approximate 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

## 8202-020/520 – Electrical Installation

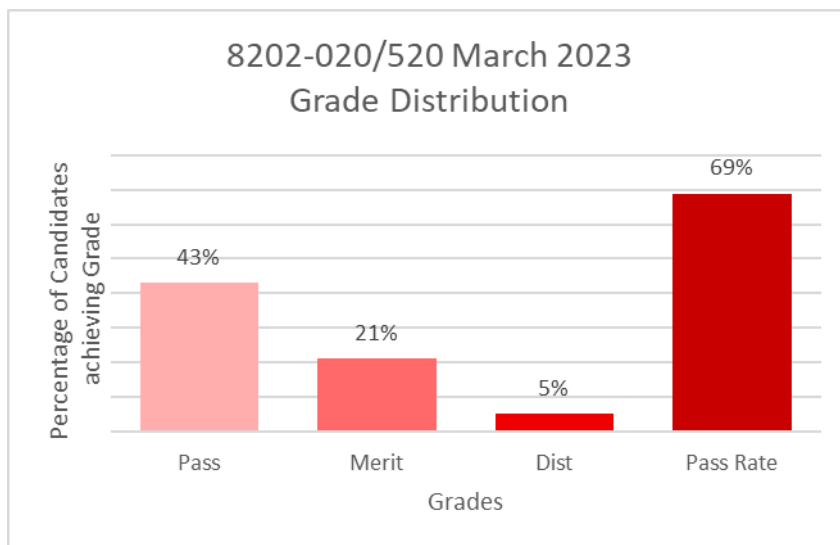
### Grade Boundaries

Assessment: **8202-020/520**  
Series: **March 2023 (Spring)**

This series was completed on both the paper-based platform and online. 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	27
Merit mark	35
Distinction mark	44

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

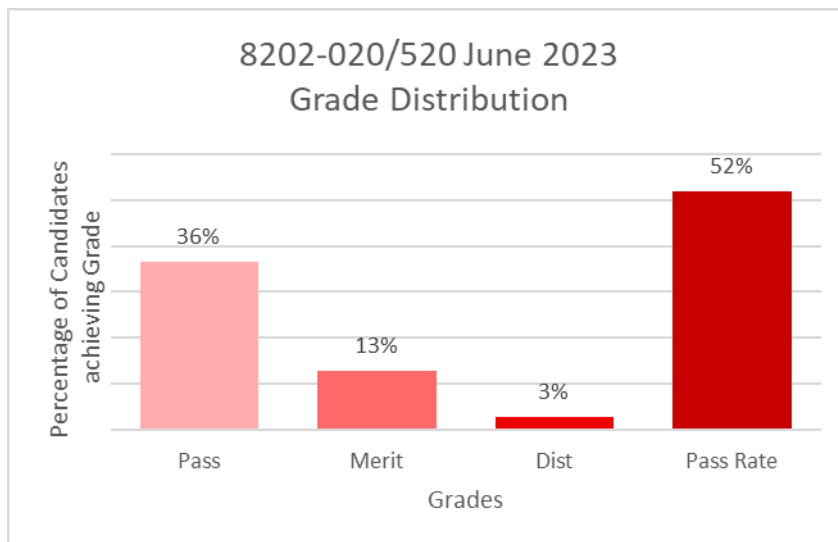


Assessment: 8202-020/520  
Series: June 2023 (Summer)

This series was completed on both the paper-based platform and online. 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	27
Merit mark	35
Distinction mark	44

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



# Chief Examiner Commentary

## 8202-020/520 – Level 2 Electrical Installation – Theory Exam

### Series 1 – March 2023

The March 2023 Multiple Choice Question (MCQ) paper was comparable to all series taken in 2022. This series saw an increase in the numbers sitting the examination meaning this form of assessment was new to many centres, but this did not have an adverse effect on performance. The statistics indicate that overall performance has improved.

Generally, most candidates demonstrated high levels of recall across the test specification as well as recall of most formula. Questions based on understanding and applied knowledge seemed to provide more of a challenge to candidates in this series, but even then responses indicated improvement in these areas.

Good areas of recall included SI units, geometry/trigonometry, atomic theory, conductor/insulator materials, as well as health and safety subjects.

There was evidence of good applications of maths including indices, Pythagoras's theorem, root-mean-squares (RMS), and general ohms law. Questions relating to transformer ratios also attracted correct responses.

Maths proved more of a challenge on subjects linked to DC circuit theory such as series and parallel resistances. Recalling basic power also seemed to challenge lower scoring candidates. Basic power formula, like ohms law, are expected to be recalled by candidates at this level.

Particular areas of the test specification that demonstrated areas of weakness amongst the cohort included roles of on-site operatives as well as industry organisations, such as the Joint Industries Board (JIB).

Candidates should be capable of visualising a circuit or situation from a description rather than a diagram. In a previous series, questions relating to measuring circuit properties performed well when a circuit diagram is included, but poorly in this series when the properties of the circuit were described.

Particular areas of concern from the test specification were knowledge and understanding of magnetic principles, including Fleming's rules and the magnetic effects of current carrying conductors. These are areas that are traditionally well responded to.

Other areas that also attracted surprisingly poor responses were linked to identifying tools and equipment with many not being able to identify a bush spanner, despite metallic conduit featuring in the current synoptic assessment.

Centres are encouraged to pay particular attention to the correct terminology as slang or colloquial terms could be used in workshop environments. These include using live instead of line or bump set instead of double set. Candidates are often confused when others refer to low voltage when they mean extra-low voltage. Reinforcing terms such as open and closed instead of on and off will also help this.

Candidates generally seem to favour practical learning, so linking some of the understanding into that practical environment can help reinforce learning in areas that are traditionally challenging. This could include calculating cable resistances before measuring them on installed circuits or measuring the effects of series and parallel conductors.

Candidates should be reminded that the permitted reference materials for this examination are BS 7671 and the IET On-Site Guide.

## Series 2 – June 2023

The June 2023 Multiple Choice Question (MCQ) paper was comparable to all series taken in 2022 as well as the spring paper in 2023. The statistics indicate that overall performance has fallen since Spring. This series had a lower number of test takers than Spring 2023 as the Summer series is often used to improve grades obtained in the Spring.

Generally, most candidates demonstrated good levels of recall across the question paper as well as recall of most formula. Questions based on understanding and applied knowledge seemed to provide more of a challenge to candidates in this series but even then, some responses indicated improvement in these areas.

Areas of strength were shown in some maths-based questions such as Pythagoras' theorem, transformer ratios and identification of formula. Other strong areas of understanding were demonstrated in subjects such as atomic theory, health and safety legislation as well as health and safety practices.

Centres are encouraged to promote the use of permitted reference materials throughout the candidate's learning, as more familiarity with these publications would be of benefit during the assessment. Candidates should also be encouraged to use key information in questions when referencing the permitted materials such as tables in the IET On-Site Guide. As an example, one question required the correct spacing of supports for a steel-wire armoured (SWA) cable and most candidates responded with the distance for general cables rather than SWA.

Candidates should also take great care when interpreting information in questions. For example, the vast majority of candidates used the diameter of a conductor, rather than radius, when calculating the cross-sectional area. Another example was linked to looking up minimum suspended cable heights. When referencing the correct table within the IET On-Site Guide, most candidates did not seem to recognise that the question stipulated this to be an area subject to vehicle traffic.

Some questions that were considered as simple recall questions seemed to attract very mixed responses and these included subjects such as suitable fixings for plasterboard ceilings, identifying exposed conductive parts and the number of live conductors terminated into an intermediate switch.



# Synoptic Assignment

## 8202-021 – Electrical Installation

### Grade Boundaries

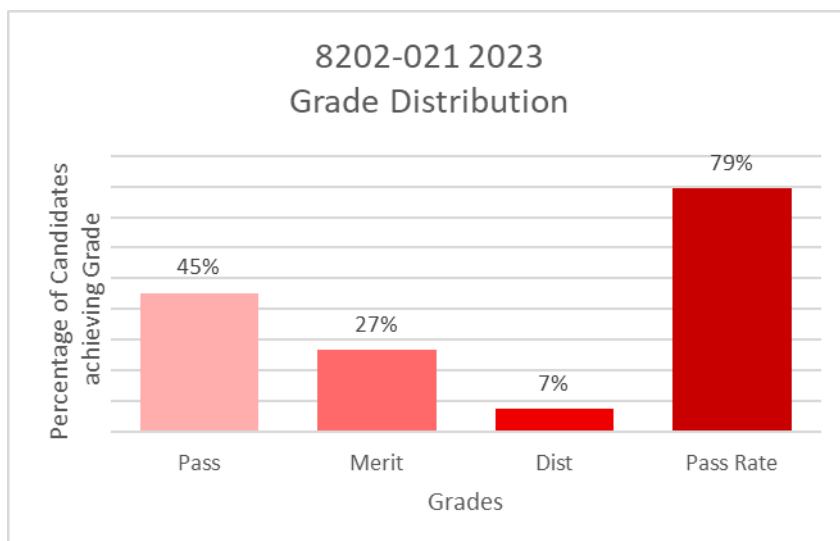
Below identifies the final grade boundaries for this assessment, as agreed by the awarding panel:

Assessment: 8202-021

Series: 2023

<b>Total marks available</b>	<b>60</b>
Pass mark	27
Merit mark	38
Distinction mark	49

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



## Principal Moderator Commentary

Performance of candidates, as a whole, was seen to significantly improve this year and this is mainly due to better familiarity, recording evidence and marking by centres.

Candidates performed well across the assessment objectives (AOs) and the following points were noted:

- Some candidates who did not use the reasoning boxes on circuit pro-formas and materials lists are not demonstrating understanding and yet some still score high bands in this AO.
- Candidates must sign declarations of authenticity in person, not by typed text.

Centre generated evidence has vastly improved, and this is in part to familiarity and sharing good practices through centre visits by moderators. Areas where improvements could be made include the following:

- Performance observation (PO) forms still tend to state the obvious. As an example, it is common for observers to note things such as “the candidate undertook an insulation resistance test”. This is however obvious as the result is on the schedule of test results. What PO forms need to capture, as some examples, is how the candidate performed the test, i.e., was it confident (AO3), hesitant (AO3), indicating good recall (AO1) by knowing instinctively which terminals to test at or did the candidate require prompting (AO1 or AO2). Detail on PO forms need to relate to the AOs as this will vastly help marking once all tasks have been completed. PO forms for this series were different from previous series as they contained a section relating to behaviours and it was apparent that many centres had not noticed this and used older forms. Centres must always check for any changes to evidence requirements.
- Candidate record forms (CRFs) were again, often brief. The purpose of CRFs is to highlight all forms of evidence which is used to support marks against each AO. As an example, a CRF for AO could reference “good technical language in materials take-off sheet” as one item of evidence. By identifying various items of evidence on CRFs, a marker can make an informed decision on marks awarded and a moderator can also see the evidence that was used to support the marks.
- Still some centres are not following the requirements for photographic evidence for task 4 where photos need to be taken **without** the candidate in shot as the purpose of the photo is to clearly and squarely see the installed work. Some centres also forget to take a photograph of the distribution board, clearly showing terminations, at the end of the assessment.
- Photographs for the manual handling task should have indicated some of the hazards the candidate should have encountered.
- Where centres upload multiple files per candidate, it would be an advantage to indicate what the document is on the filename.

It was still noticeable from some centres that marking by task may still be being undertaken. This may be by aggregating marks on a spreadsheet per task or by allocating marks on PO forms. Centre must be reminded that **this must not be the method of marking** as it skews weightings per AO and disadvantages candidates through inaccurate marking and this ultimately can lead to regression of marks.