8202-30 Level 3 Advanced Technical Certificate in Electrical Installation

2025

Version 2.0

Qualification Report

Version and date	Change detail	Section
2.0 14/08/2025	Qualification achievement data for Distinction* (and above) 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.

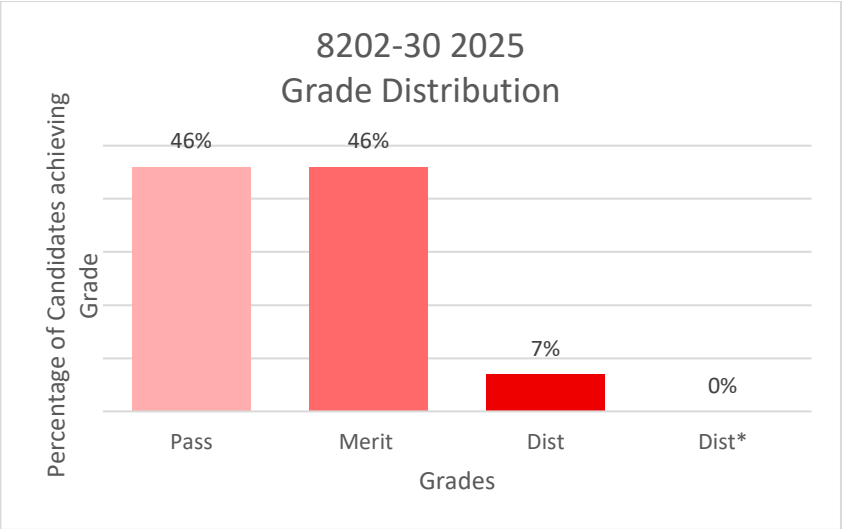
The document provides commentary on the following assessments:

- 8202-531 – Level 3 Advanced Technical Diploma in Electrical Installation (Theory exam)
    - Spring 2025
    - Summer 2025

- 8202-032 – Level 3 Advanced Technical Diploma in 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

8202-531 – Electrical Installation

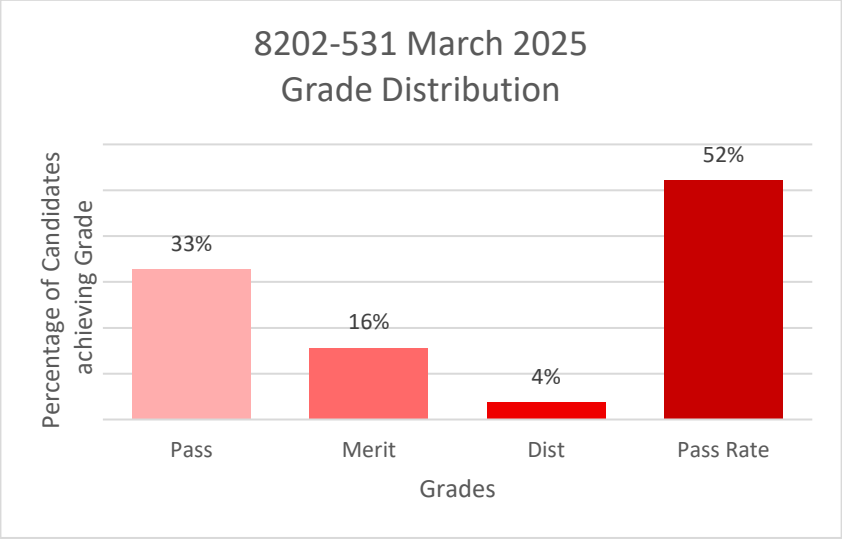
Grade Boundaries

Assessment: **8202-531**
Series: **March 2025 (Spring)**

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

Total marks available	75
Pass mark	28
Merit mark	38
Distinction mark	49

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

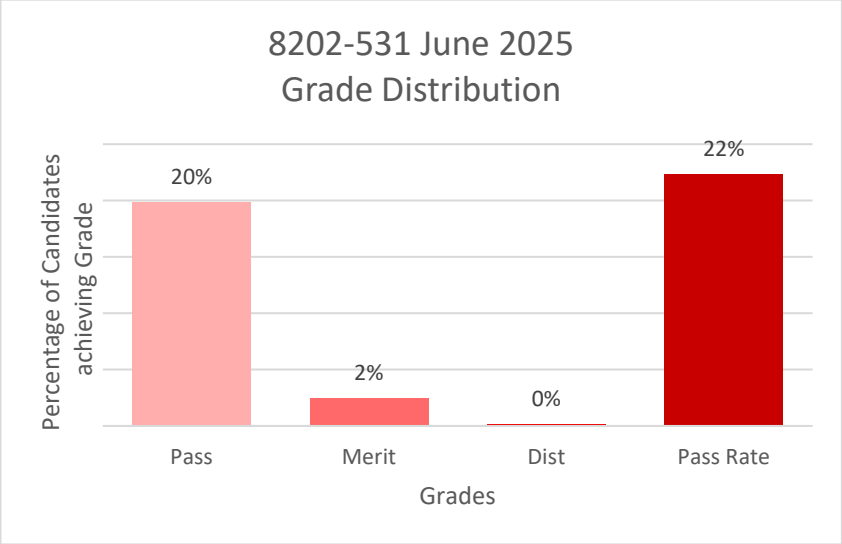


Assessment: **8202-531**
Series: **June 2025 (Summer)**

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

Total marks available	75
Pass mark	24
Merit mark	34
Distinction mark	45

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



Chief Examiner Commentary

8202-531 – Level 3 Electrical Installation – Theory Exam

Series 1 – March 2025

Like previous assessments, this series explored a good range of knowledge and understanding from across the specification.

Areas of strength shown by the cohort included the correct identification of colours for line conductors in a three-phase system, calculating reactive power and power factor, definitions from BS 7671, requirements for caravan park socket-outlets, and the uses of excess electricity when privately generated.

Areas where candidates could have maximised marks by using all the information within a question included the following items:

- Providing detail on what is used as an earth return path **external** to an electrical installation as many candidates stated ‘earth electrode for a TT arrangement, or ‘cpc’ for a TN-C-S arrangement. An earth electrode and cpc are both part of an electrical installation (unless source electrode was given).
- Providing the relevant detail in relation to a 20 A RCBO protecting a socket-outlet circuit, when explaining overloads. Few made mention of the rating or type of circuit.
- Focussing on the term ‘accessory’ and ‘dwelling’ when listing what can be functionally tested in a typical dwelling. Many responses given were appliances rather than accessories, and many examples would not be found in a dwelling.

Many candidates did not complete responses, therefore falling short of the marks on offer. This was especially evident in question such as:

- Explaining the operating principles of an inverter, with many explaining it converts DC to AC, but few completing the answer with regards to frequency matching or voltage alignment. Many gave explanations relating to the solar PV system instead.
- Calculating the line current in a three-phase delta system with many calculating the phase current and not converting this to the line current value.
- Defining the meaning of external influence codes where candidates did not provide the full meaning. For example, when asked to define the code AD5, many simply stated ‘jets’, instead of the full answer which was water (AD) jets (5).

Overall, most of the cohort demonstrated weakness in explaining operating principles for items, such as a solenoid within a contactor or the use of the lumen method for lighting design.

One item required candidates to calculate the maximum demand for a cooker final circuit, including the application of diversity. Many candidates were able to attract some marks for calculating the initial design current with many being able to identify the guidance within the On-Site Guide. Some however went on to calculate 30% of the full load without deducting 10 A or failed to add the 10 A back on after finding 30%. Marks were awarded for aspects of the application even if the end result was not correct. A surprising number of candidates added 5 A to their calculated loading despite the question clearly stating there was no socket-outlet on the control unit. This is another example of not using the information in the question.

A question asked candidates to explain what had been verified on successful completion of a continuity of ring-final circuit test. Most responses were too simplistic with many simply repeating the question. Some were able to identify that polarity was confirmed but the majority of responses were very vague and simply stated, for an example, ‘to check the circuit is working properly’.

One question was themed on documents that are referenced during fault diagnosis. From the vast range of suitable examples available as answers, many candidates provided duplicate documents such as EIC and EICR which are simply seen as previous test documents. 'Manufacturer's instructions' was by far the most popular correct response.

One of the questions required candidates to identify three practices that would alert others if someone was lone working and became unconscious. Many candidates who responded to this item seem to have misinterpreted the situation and did not link the question to the scenario of an operative working alone.
Many responses gave brief outlines of how the potential casualty would be dealt with, such as ringing emergency services, rather than measures to ensure the operative was safe or to raise concerns. Few responses linked the question to the lone working in the scenario. Another common response where candidates did relate to the lone working scenario gave solutions that were not workable in practice, such as the operative raising the alarm or pressing a panic button, solutions that an unconscious person could not do.
Some other responses linked to tasks that are hazardous, such as live testing and that these should be avoided to minimise any risk even though the scenario stated the person was undertaking fault diagnosis.

This ERQ was based on a scenario where a distribution circuit was required to span from one building to another. The scenario contained an elevation drawing giving heights of cable runs, lengths of span, installation dimensions, and electrical supply and loading data.

The question asked candidates to provide a design solution focusing on three aspects, these being

- the suitable cable for this
- the method of spanning the cable between buildings
- the design of a suitable cross-sectional area for current capacity and voltage drop.

Most of the candidates focussed their design on one aspect only, that being the design calculations. Very few could express any technical understanding of how the cable would be installed or a suitable cable type.

Even through candidates could attract marks through their design calculations, many used data for single core cables rather than the correct SWA cable.

Some candidates who did respond to the method of spanning between buildings seemed to consider metallic tray as a suitable way to support the cable across a 35 m span. Very few could identify a catenary wire as a suitable method of support.

Many candidates who undertook the cable calculations were not able to demonstrate any understanding of the figures being calculated with little justification or analysis.

Centres should be reminded that extended response questions are intended for candidates to display a level of understanding and it is important candidates read the question to understand what is required of them, especially when applying and/or justifying their data.

Candidates and centres should also be reminded that there are clear instructions on what publications are permitted for the assessment contained in the permitted materials document which can be downloaded from the 8202 qualification webpage here.

Series 2 – June 2025

Like previous assessments, this summer series explored a good range of knowledge and understanding from across the specification.

Areas of strength shown by the cohort included identifying maximum values of external earth fault loop impedance and calculating Neutral current values in three-phase systems.

Areas where candidates could have maximised marks by using all the information within a question included the following items:

- When asked to identify information that would help to put together a materials list **before** work starts on a new installation, many identified documents that are often issued **after** work has been done such as certificates or test results.
- Many candidates identified limitations of BS 88-2 fuses rather than BS 3036 devices; many tried to give positive qualities of BS 3036 devices, instead of identifying limitations of BS 3036 fuses when compared to BS 88-2 fuses, as required by the question.
- Few candidates correctly identified the potential location of issues that cause **supply** polarity faults with many giving examples found within installations.
- Many candidates listed risks associated with electricity rather than hazards as given in the question.

Many candidates did not complete or correctly conclude some responses, therefore falling short of the marks on offer. This was especially evident in questions such as:

- Not providing the material when identifying services as extraneous conductive parts, e.g. metallic gas pipes rather than just gas pipes.
- Not fully explaining that a light sensitive movement sensor works by detecting **both** movement and ambient light levels.
- Of the candidates who did attempt the adiabatic equation in one question, many calculated the values correctly, but then arrived at the incorrect conclusion.

Overall, the majority of the cohort demonstrated weaknesses in the following areas:

- Calculating the secondary current in a transformer where the secondary voltage and kVA is given. Many attempted to use ratios to calculate this with a multi-stage approach, which introduced many errors; a simple single calculation could have been applied instead.
- Few were able to identify limitations with electric underfloor heating.
- Many candidates seemed to confuse the principles of using a capacitor for power factor correction and for starting purposes in a capacitor start motor.
- Many were unable to correctly calculate the resistance in a circuit having resistance and inductance in series. This topic normally attracts good responses.
- It was very surprising how few candidates were able to state the two documents that must accompany an Electrical Installation Certificate with many stating documents such as a minor works certificate or condition report.
- Few were able to identify possible causes of faults with given symptoms or issues.

This extended response question (ERQ) was based on a scenario where a final circuit was to be installed to supply a new electric immersion water heater and due to the installation construction, the cable had to be run in a partition wall. The question asked candidates to provide a design solution focusing on three aspects, these being

- a suitable type of protective device based on the load

- a suitable csa of **live** conductors based on current carrying capacity and voltage drop
- a suitable method/arrangement for connecting the electric immersion water heater to the final circuit.

Most of the candidates focussed their design on one aspect only, that being the design calculations. Many candidates who undertook the cable calculations were not able to demonstrate any understanding of the figures being calculated with little justification or analysis of the scenario or information given.

The vast majority of candidates did not include the following information in their design:

- Installation reference method.
- Type of cable specified.
- Metallic frame in the studwork.
- The cable is not grouped.

In addition, many candidates went on to attempt to design and calculate the protective conductor for the circuit despite this not forming any part of the question. This indicates that candidates are following a drilled-in process rather than showing understanding or acknowledging key details in the question and scenario.

Very few candidates attempted to select a Type B RCBO based on the load being resistive and the need for additional protection due to the partition. In addition, very few attempted to give a solution on how the final circuit will be connected to the immersion heater such as using a double pole switch and flexible cable, let alone any suitable heights/positions for the accessories.

As a result of very poor coverage of the question and a basic design solution ignoring the information in the scenario, very few candidates were awarded more than mid-band 1 scores.

Candidates and centres should also be reminded that there are clear instructions on what publications are permitted for the assessment contained in the permitted materials document which can be downloaded from the 8202 qualification webpage here.

Synoptic Assignment

8202-032 – Electrical Installation

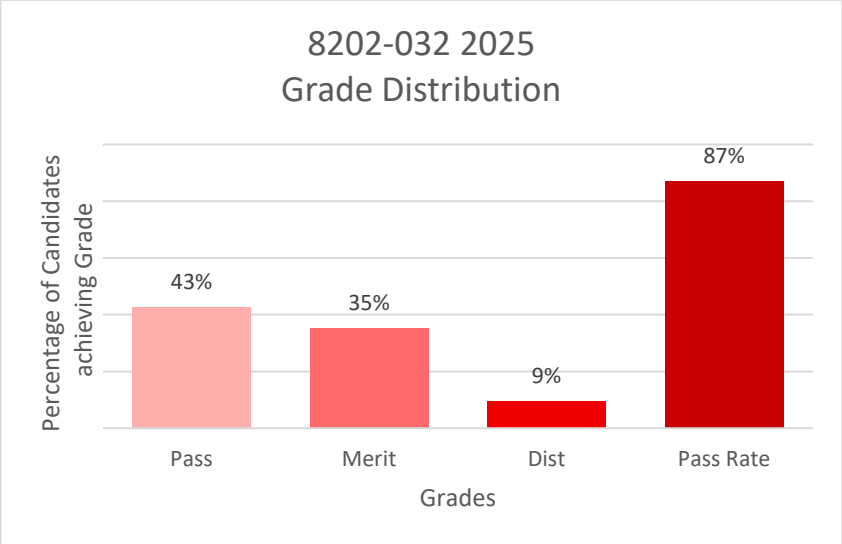
Grade Boundaries

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

Assessment: 8202-032
Series: 2025

Total marks available	60
Pass mark	28
Merit mark	38
Distinction mark	49

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



Principal Moderator Commentary

The synoptic assessment for 2025 was found to be similar in nature to those administered in 2024 and 2023. Overall, candidate performance was also considered consistent across these years.

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

- Most candidates handled design grids well and calculations were generally accurate. The evidence distinguishes those who simply follow procedures from those who demonstrate clear understanding and valid results. Centres should encourage candidates to continue to present their calculations in a tidy, clear and methodical way, which allows markers and moderators to follow their working.
- The sub-task concerning how the dwelling could generate its own energy served as an effective means to assess candidates' research and reporting skills, contributing to AO1 and AO2.
- Some candidates included take-off sheets or materials lists, which was not a requirement of this year's synoptic assessment.
- Inspection and testing forms were generally well populated but still there were some pieces of evidence missing for some candidates. Many candidates demonstrated a lack of understanding of the schedule of inspections part of the Electrical installation Certificate. Several centres continue to use outdated versions of BS7671 certification, with some even utilising Electrical Installation Condition Report Documentation. Additionally, some centres are providing candidates with internally generated documentation, such as ring-final continuity test sheets. These materials are considered prompting aids and **must not** be used.
- Fault reports were frequently submitted with insufficient detail, and candidates often employed imprecise technical terminology—such as referring to CPC conductors as earths or describing a broken conductor instead of using the term ‘open circuit’. Additional research could help candidates use appropriate technical language more accurately.
- Many candidates did not document which tests had been performed or the results obtained. When measurements were included, the correct SI units were commonly omitted or incorrect; for example, insulation resistance faults were often recorded using mΩ rather than MΩ. It is essential that the “Rectification” section of the Fault Report Sheet contains comprehensive details rather than vague instructions. Furthermore, the ‘Actions Required’ section should be fully completed to support assessment, as many reports only mentioned ‘re-test’ and rarely addressed the need for issuing relevant certification.

Centre based evidence was not as detailed as in previous series, such as in performance observation (PO) forms and candidate record forms (CRFs), which were less supportive of marks awarded overall.

Some centres continue to mark on a task-by-task basis, either by consolidating marks per task using spreadsheets or by assigning marks individually on PO forms. Centres are reminded that this method should **not** be used, as it can distort the intended weighting of each assessment objective (AO) and may disadvantage candidates due to potential marking inaccuracies. Such practices may ultimately lead to the adjustment or reduction of candidate marks.