

# 8202-20 Level 2 Technical Certificate in Electrical Installation

2022

Qualification Report

# Contents

Foreword .....	3
Introduction .....	4
Qualification Grade Distribution .....	5
Theory Exam.....	6
8202-020/520 – Electrical Installation.....	6
Grade Boundaries.....	6
Chief Examiner Commentary .....	8
Synoptic Assignment.....	10
8202-021 – Electrical Installation .....	10
Grade Boundaries.....	10
Principal Moderator Commentary.....	11

# Foreword

## Results August 2022

As you will likely be aware, Ofqual has announced that grading for General Qualifications this summer will be more generous than prior to the pandemic. This is partly due to managing the impact of disruption and learning loss on learner performance and also managing fairness between learners in different years who had different methods of determining their grades. Therefore, for A levels and GCSEs, grading will seek a midway position between 2019 and 2021, meaning, in general, results will be somewhat higher than prior to the pandemic. This year, 2022, is a transitional year and outcomes and standards will likely return to pre-pandemic levels in 2023.

Similarly, for Vocational and Technical Qualifications (VTQs), this summer will be a transitional year and Ofqual has now been clear that for VTQs “we should expect that this summer’s results will look different, despite exams and assessments taking a big step towards normality.” Ofqual has published a blog [What’s behind this summer’s VTQ results](#)

In acknowledgement of the disruption to learning and to support fairness for all learners certificating this summer (some of whom will be competing against learners taking General Qualifications for the same progression and higher education opportunities), we will be taking loss of learning into consideration, whilst still acknowledging the need to uphold the validity of the qualifications. On this basis, we have made the decision to apply a form of ‘safety net’ through some additional ‘generosity’ to both the theory examinations and synoptic assignments within our Technical Qualifications wherever appropriate, (noting that it may not be appropriate to apply where there is a clear impact on knowledge and skills to practice, particularly health and safety requirements or other relevant legislation). We are therefore also reviewing candidate work a few marks below (equivalent to 5% of maximum marks) the Pass and Distinction notional boundaries – the boundaries used during the awarding process as the best representation of maintaining the performance standard from 2019.

The reason for lowering boundaries, where appropriate, by 5% of the maximum marks available, is that it is broadly commensurate with the level of generosity learners are likely to see in General Qualifications at level 2 and level 3. Providing that senior examiners can support the quality of learners’ work seen below the notional boundaries and agree it is sufficient to maintain the integrity, meaning and credibility of the qualifications, the grade boundaries will be lowered across the full set of grades – eg. Pass, Merit, Distinction and Distinction Star.

Given the circumstances, this is the best approach to take into account the disruption to teaching and learning across every learner in a fair and transparent way, and at the same time maintain the integrity and meaning of qualifications. This approach helps to level our Technical Qualifications awarding approach with that adopted for General Qualifications and other qualifications awarded in England and in the wider UK.

## Spring examination series 2022

Having taken this decision, we are also mindful of learners who have taken components in **Spring 2022** and believe they should also have access to the same level of generosity. For these learners, we wish to adopt a similar approach. Therefore, for learners taking Technical Qualification assessments in spring there will be similar generosity, through the addition of 5% of the maximum mark available for the assessment. It is a different mechanism to that we are using for the summer assessments but provides the same level of generosity to those learners taking assessments in the summer.

# 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.

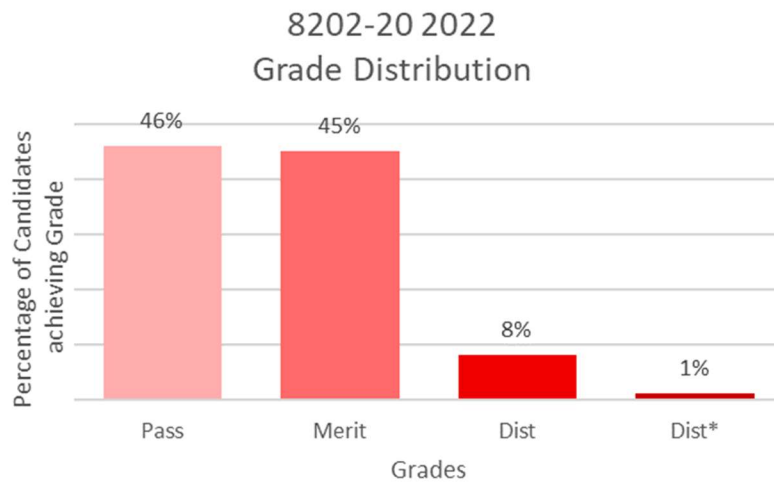
This report provides general commentary on candidate performance in both the synoptic assignment and theory exam. It highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat assessments in the 2018 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 2022 (Spring)
  - June 2022 (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

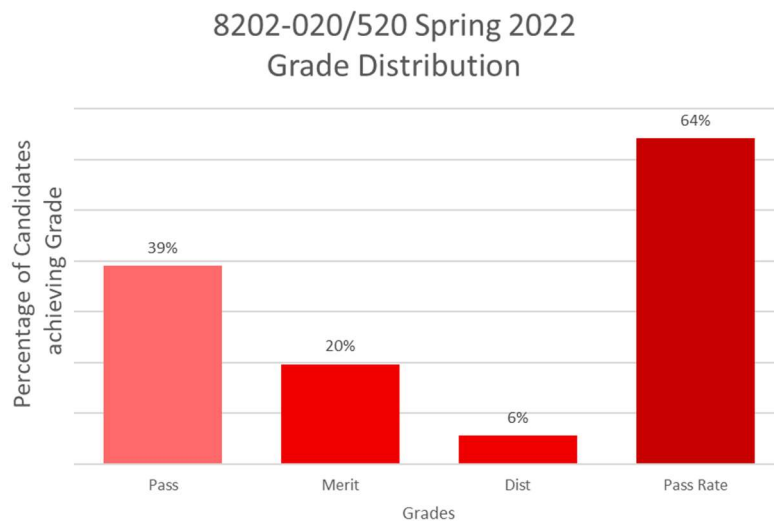
Series: April 2022 (Spring)

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 generosity applied to the summer assessments will also retrospectively be applied to candidates who achieved their best result in spring. 5% of the base mark of the assessment will be added to their score rather than applied to boundaries.

The graph below shows the approximate distributions of grades and pass rate for this assessment, it does not account for any marks that have been amended due to generosity:

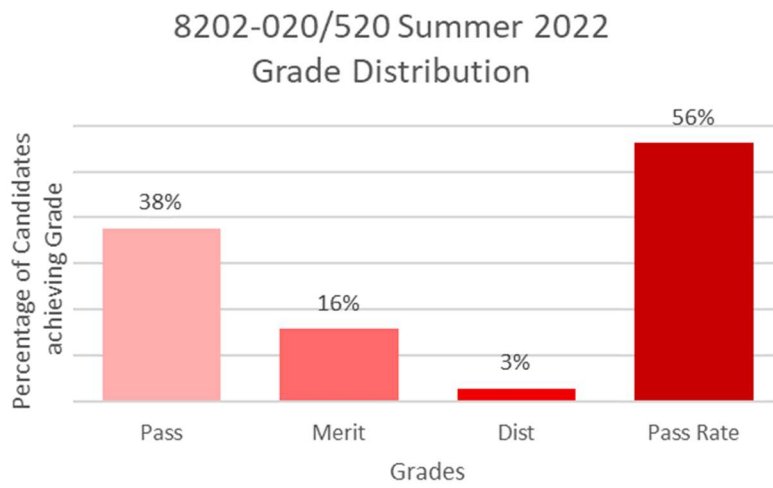


Assessment: 8202-020/520  
Series: June 2022 (Summer)

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	24
Merit mark	32
Distinction mark	41

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 – April 2022

The examination paper covered a good range of learning outcomes across the whole specification of the qualification. All questions were considered to be technically correct, and suitable for the level, with no errors.

Generally, most candidates demonstrated a good level of recall throughout the examination. When attempting items requiring understanding, areas of weakness included transposition of formula, mathematics linked to cable diameter, and properties a conductor.

Some areas of recall seemed to divide candidates with many mistaking the SI unit for flux density with that for magnetic flux.

A surprising area where poor understanding was demonstrated was recall of symbols linked to the total earth fault loop impedance with few being able to identify  $Z_s$ .

Questions on theory relating to the practical aspects of the installation of wiring systems were quite well answered overall. However, there were questions relating to aspects of knowledge of the correct tools to use for particular tasks, such as saws for example, that many candidates were not able to answer correctly. Some questions linking wiring system requirements to tables in permitted materials attracted mixed responses such as heights of catenary wires, but this is probably also linked to familiarity with such systems.

Areas of understanding linked to the measures used for electric shock protection indicated a poor level of understanding of the basic functions of earthing and bonding. In addition, disconnection times and earthing arrangements were also areas of weakness where many candidates did not answer the questions correctly despite having reference materials allowed within the assessment.

Questions focusing on applied knowledge performed well amongst high scoring candidates but posed a challenge for many.

Areas of strength overall included questions relating to DC circuit theory, drawing symbols and transmission voltages.

Candidates would be advised to read questions at least twice before answering, to ensure that questions are not answered incorrectly due to misreading, misinterpretation, or not using the full information in the question.

Candidates are also advised to become familiar with the content of permitted materials such as the IET On-Site Guide as many questions can be answered by referencing tables or sections within this publication. Having a understanding of how to reference this document efficiently would greatly improve a candidate's score.



## Series 2 – June 2022

The examination paper covered a good range of learning outcomes across the whole specification of the qualification. All questions were technically correct, and suitable for the level, with no errors.

Generally, most candidates demonstrated a good level of basic recall throughout the examination. When attempting items requiring understanding, areas of weakness included transposition of formula, mathematics linked to areas of a circle, and properties of an insulator.

Questions focusing on applied knowledge performed well amongst high scoring candidates but posed a challenge for many others. These included questions requiring research and application of data in permitted materials such as cable capacities and factors that impact on them.

Areas of strength overall included questions relating to DC series circuit theory, transformer principles and magnetism.

Weakness was demonstrated in reduced-low voltage systems, mechanical power principles, and electronic components. There seemed to be some confusion with some symbols or quantities in basic DC circuits with lower scoring learners.

Questions on theory relating to the practical aspects of the installation of wiring systems were quite well answered overall. Some questions linking wiring system requirements to tables in permitted materials attracted mixed responses such as fixing distances.

Areas of understanding linked to the measures used for electric shock protection indicated a poor level of understanding of the basic functions of earthing and bonding and basic protection. In addition, some aspects of earthing and bonding was poorly answered.

Candidates must take great care in the following areas:

- Ensure all values within a calculation are at their base SI quantity (e.g. metres not millimetres)
- Read a question fully before attempting to answer, this is to ensure all options have been considered and key words used
- Always double check calculations using a calculator as a wrong value may be inputted the first time
- Use a keyword to enable research in permitted publications. As an example, if a question requires a specific IP code for bathrooms, research bathrooms not IP codes.
- Most questions featuring distances and capacities can be answered using the permitted materials such as the IET On-Site Guide.

Applied knowledge questions performed well, especially amongst high scoring candidates. It seems that lower scoring candidates did not use all the information given in the question.

# Synoptic Assignment

## 8202-021 – Electrical Installation

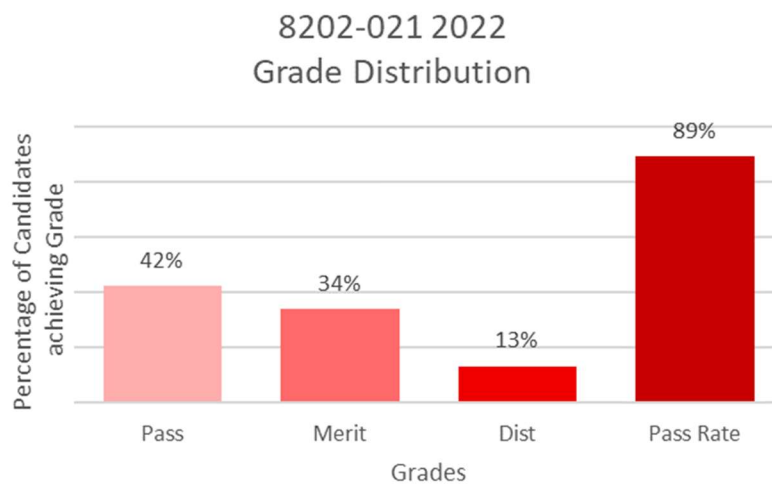
### Grade Boundaries

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

Assessment: 8202-021  
Series: 2022

<b>Total marks available</b>	<b>60</b>
Pass mark	24
Merit mark	35
Distinction mark	46

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



## Principal Moderator Commentary

### Moderation visits

Most centres were visited once this academic year and, in most cases, Task 4 became the assessment most moderators viewed at Level 2 with some viewing the access equipment task. With this being the first time for centre visits for many centres, some centres seemed to confuse a centre visit with an EQA visit. Whilst moderators are keen to see good quality practices being applied such as IQA and standardisation, the focus of the centre visit is to see the quality of evidence produced and to help, where necessary, in providing better evidence to support candidates' marks.

### Uploading evidence to the portal

This was generally undertaken on time with the minimum of issues. A small number of centres did not switch the portal to 'marking complete' which meant moderators could not take control of the evidence. This was rectified promptly by most centres once contacted.

As the closure of the synoptic assessment window coincided with the half-term break the following week, when moderators checked the Moderation Portal for the correct evidence submission, they found many centres were not contactable due to this break. Centres should be reminded that somebody must be always contactable during the moderation window to address these issues promptly.

Some centres chose to upload evidence using multiple files, which is acceptable, but some candidates had up to 18 files of evidence. Additionally, these files often had no clues to what the evidence contained was, and this made locating evidence very difficult. In other cases, evidence was zipped into a folder which in turn contained many sub-folders which only had one file in them. Arranging files this way is not only time consuming to put together, but time consuming to moderate.

It would be desirable to have all the evidence in **one PDF file** or one file for documents, and another for photographic evidence. If multiple files are to be used, please could the filename indicate what the evidence contained is. For example, <candidate number>-<items contained> ABC1023-CRF-PO.PDF.

### Strength of evidence

In most cases, the evidence submitted was of good quality and as required by the assessment material. The majority of photographic evidence was clear and taken at the required intervals which indicates progress. Some centres did not adhere to these requirements and simply took a series of photographs which made the candidate the focus of attention rather than the work being produced. In addition, they were not taken at the required intervals for Task 4, meaning progression was not evident. Centres must make sure they check photographs before submitting, as some photographs were so blurry or poorly lit that nothing could be seen. In addition, please ensure the photographs for Task 4 are taken head-on as, when taken from an angle, the installed work appears to be poorly levelled or aligned.

Most PO forms contained very good positive feedback on performance, but many did not use the 'what could be improved' column. Unless a candidate scores maximum marks, which in itself is extremely rare, there would always be room for improvement. PO forms are intended to support a candidate and describe elements of the practical work that other evidence, such as photographs, do not provide. This includes behaviours, housekeeping, levels of prompting and skills with tools, etc.

Candidate record forms (CRFs) were well written by most, but sometimes it became clear from the narratives that centre staff were mentioning candidates' performances throughout the year rather than during the assessment. This would indicate that marking was, at times, based on

familiarity over time rather than performance on the day. This was further backed up by other forms of evidence submitted, such as photographic evidence. In addition, very few CRFs contained negative feedback or areas of weakness, but these should be just as important as reporting the strengths. The purpose of CRFs is to signpost the evidence already generated that is being used to support the marks for each assessment objective (AO).

## **Marking**

Marking was well defined across most AOs but evidence for AO4 and AO5 was generally weak across most centres.

Some candidates attracted high marks for AO5, but it was clear from other forms of evidence, attention to detail was not present throughout. This included detail of material lists from Task 1, justification for material selection, as well as photographic evidence from Task 4 showing cables were not well-dressed or made off too short.

Good sources of evidence for AO4 include areas such as drawing in cables through the conduit, with candidates linking their understanding of circuits (cables needed) with the actual performance of running in cables. Another example would be the technique of terminating SWA cable, including the importance for steel strands to be straight and clean for glanding.

It is very important that centres are honest with marking as inflated marks has a knock-on effect on lower scoring candidates. If regression is applied due to moderation not agreeing with the inflated marks, the regression applied could knock borderline pass candidates into the failure bracket.

Centres should also consider that first-class workmanship must be balanced with economics in terms of finishing tasks in a time close to the deadline, rather than several hours beyond the time specified. For example, centres should take into account when a learner scores high marks overall for very detailed work but went six hours over time, and another learner scores nearly 10 marks lower for completing close to the time with minor imperfections.

Where centres have multiple assessors, standardisation of marking must be carried out. Although this was very much in the minority, there were a significant number of cases where marking was vastly different between similar candidates under one centre number. This was especially evident where centres had multiple satellite centres.

It is recommended, where a centre has multiple markers, collaborative marking is undertaken where evidence can be shared and marking agreed. Where markers generate their own PO forms and mark from them, it is recommended as good practice for other markers or tutors to challenge marking based on evidence.

## **Candidate performance**

Candidates performed well over most of the tasks and across the AOs.

Task 1 showed some good areas of recall and understanding when undertaking basic designs of an installation based on permitted materials. Some high achieving candidates did well with interpretation of drawings and applying understanding. Overall, most learners seemed to struggle with detailed technical language, especially when compiling the materials list. This could be due to limited opportunities in a workshop environment.

Safe isolation was generally undertaken well with most recalling the procedure without prompting. Evidence suggests some candidates were hesitant in this task, but this is possibly due to working in the presence of potentially live equipment.

Most worked well in collaboration with the access equipment in Task 3. Some candidates took a lead role and others relied on the prompts provided.

Task 4, the main installation task, was set to a very similar standard to previous series, but candidates seemed to struggle to finish in the required time and this is likely due to limited workshop opportunities. The standard of work was generally good, and this was reinforced by most of the photographic evidence. PO forms suggested that many lower-achieving candidates struggled with fluency and natural use of hand and power tools. AOs that were generally lower in marks were AO4 and AO5 in this task.

The reflective task was carried out very well across the whole cohort; the responses were very honest and allowed for better moderation of the evidence.