

8202-20 – Level 2 Technical Certificate in Electrical Installation

2018

Qualification 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.

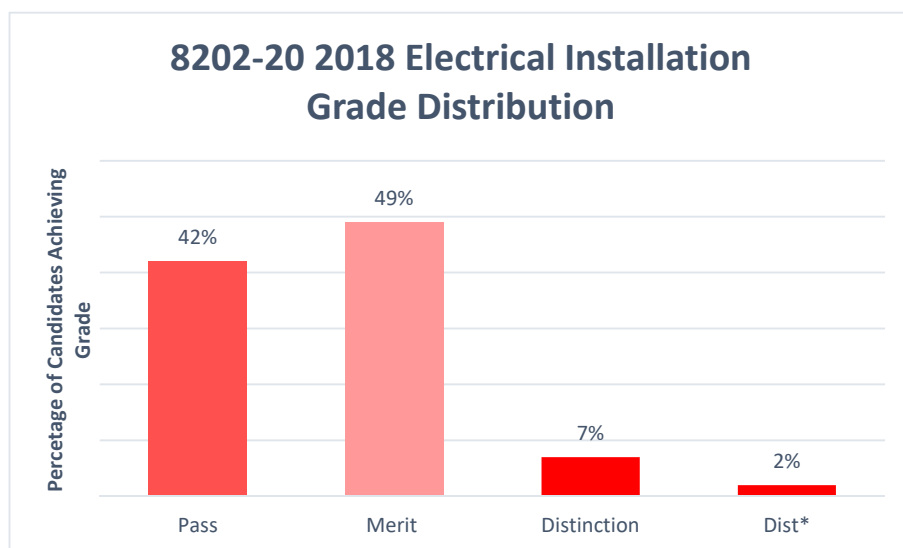
This report provides general commentary on candidate performance and highlights common themes in relation to the technical aspects explored within the assessment, giving areas of strengths and weakness demonstrated by the cohort of candidates who sat the April and June **2018** examination series. It 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 assessments;

- 8202-020/520 Level 2 Electrical Installation - Theory exam
 - April 2018 (Spring)
 - June 2018 (Summer)
- 8202-021 Level 2 Electrical Installation - Synoptic assignment

Qualification Grade Distribution

The 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.

Theory Exam

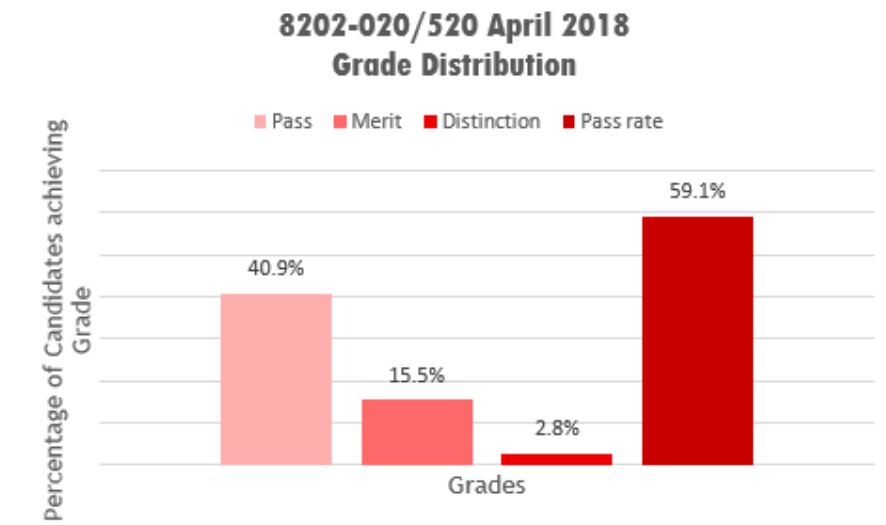
Grade Boundaries and distribution

Assessment: 8202-020/520
Series: April 2018

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

Total marks available	59
Pass mark	30
Merit mark	38
Distinction mark	47

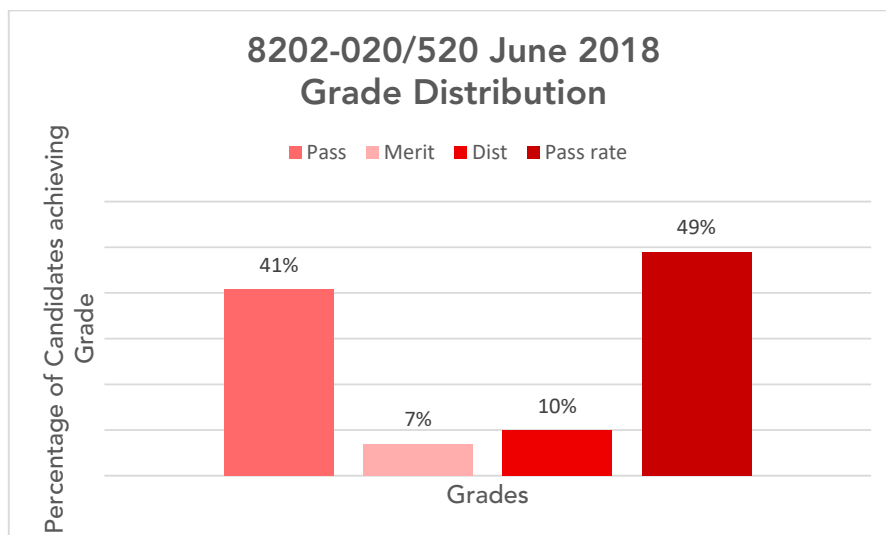
The graph below shows the distribution of grades and pass rates for this assessment;



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

Total marks available	59
Pass mark	27
Merit mark	35
Distinction mark	44

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



Chief Examiner Commentary

Assessment component: 8202-020/520

Series 1 (April 2018)

The April 2018 8202 Level 2 examination was found to be accurate and in compliance with the test specification.

Many candidates seemed to have a weak understanding of basic electrical principles with poor responses to questions relating to ohms law, including a basic understanding of the quantities used.

Questions relating to mathematical principles linked to electrical principles, such as trigonometry, also scored low with many candidates unable to perform basic calculations such as Pythagoras' theorem.

Several questions linked to resistivity also had very poor responses with many candidates unable to undertake calculations of resistance based on resistivity values.

Some questions involving series and parallel circuits proved to be weak areas with many candidates unable to understand the effects of parallel resistances and how current and voltage is affected by the type of circuit.

Questions relating to transformers and in particular, ratios, seemed to split candidate's responses over the answer options available.

In relation to installation of wiring systems, many candidates demonstrated a poor understanding of circuit arrangements and in particular, switching arrangements. Questions relating to the purpose of bonding also scored low.

Areas of strength across the qualification were very evident in topics such as supply system arrangements, earthing systems and distribution.

Candidates were also strong in installation practices such as choice of wiring systems and understanding how to install and terminate wiring.

Candidates also demonstrated a good use of permitted materials such as IET On-site Guide, especially when responding to questions relating to conduit and trunking factors.

There were 11 applied knowledge questions spread across the paper and included: Q6, Q8, Q15, Q19, Q24, Q28, Q56, Q57, Q58, Q59 and Q60.

These questions did discriminate the higher scoring candidates from the lower scoring candidates, those who scored highly across the whole paper performed better against these questions where as those with a lower score struggled to pick up these marks.

Where these questions gave candidates a scenario, which is likely to be purely theoretical, as it is highly unlikely they have used the materials/carried out the task within the workshop, candidates struggled to answer correctly.

These questions require candidates to analyse a problem and suggest an appropriate resolution. As this question type usually presents a scenario with various pieces of information, the length of question is often longer than other questions. Candidates should be prepared for these type of questions and it must be stressed as part of preparation that they take time to read the question, highlight the key factors given and read all options before selecting an answer.

Following an investigation City & Guilds have excluded a question for this examination since the release of results in May 2018. This exclusion has resulted in the base mark being lowered from 60 to 59 and the grade boundaries adjusted to reflect this. Any candidates impacted in terms of grade achieved have been informed.

Series 2 (June 2018)

The June 2018 8202 Level 2 question paper was found to be accurate and in compliance with the test specification.

One question relating to roles within the electrotechnical industry, although technically correct did go beyond the scope of the specification, causing confusion with candidates and this was evident in their responses. As a result, this item was removed from the overall base mark and the grade boundaries were awarded to reflect this.

In addition, it was considered that this question paper was, overall, technically more difficult than the April series paper and this too was taken into consideration during awarding of grade boundaries.

Great care must be taken by candidates to read the questions carefully before responding as it seemed evident that many candidates were missing key information within questions as the distractors chosen as answers would indicate the key wording had been missed.

Once again, scientific principles seemed to be a challenge for most candidates where an inability to understand series and parallel circuits was evident. Mathematical principles also proved challenging with many candidates being unable to correctly apply trigonometry or Pythagoras' theorem.

In addition, candidates seemed unable to apply understanding to instrumentation, magnetic principles and simple transformer principles.

Candidates did score well in items relating to installation of wiring systems including methods of supports. Poor scoring questions in this area were ones requiring candidates to obtain values or measurements from tables within permitted materials where the range of responses seemed to indicate that candidates were not reading the information fully and simply matching the first piece of information found with the first choice of answer within the question.

Questions relating to electric shock and common protective measures gained mixed responses with many candidates seemingly confuse protective measures with protective devices or components. Questions relating to earthing and bonding seemed to create similar confusion with many being unable to demonstrate a basic understanding of the reason for earthing.

The applied knowledge questions seemed to separate the high scoring candidates from the low scoring ones with many low scoring candidates relying on recall rather than understanding. Within each of these questions, each of the four given options seemed to attract equal amounts of responses which indicates an amount of guessing being employed, especially in the lower scoring group of candidates.

Synoptic Assignment

Grade Boundaries and distribution

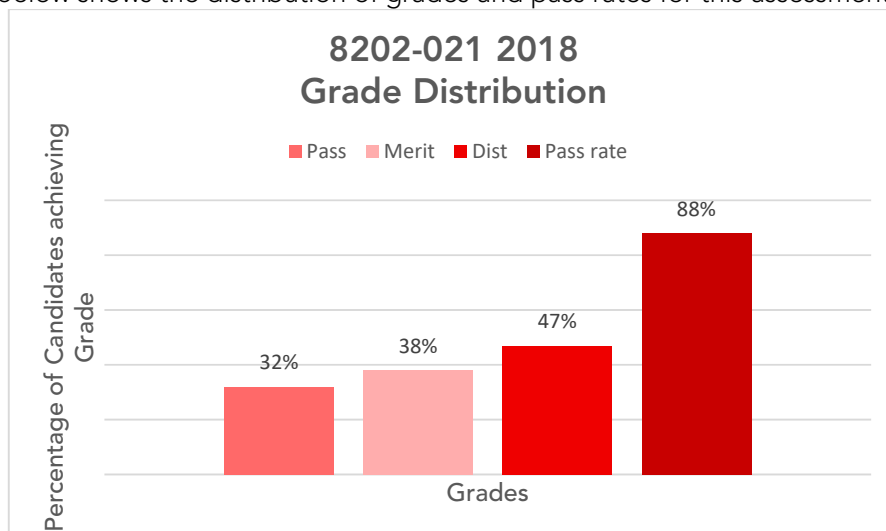
Assessment: 8202-021

Series: 2018

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

Total marks available	60
Pass mark	27
Merit mark	38
Distinction mark	49

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



Principal Moderator Commentary

The synoptic assignment brings together knowledge and understanding as well as skills learnt over Level 2 of this qualification. Candidates needed to enhance their practical skills and apply a great deal of understanding gained in three key areas:

- basic Installation design
- Health and Safety including use of access equipment and safe isolation
- Installation of electrical installation systems and components

The tasks within this assignment were designed to assess the practical skills in these areas which also, individually, assesses learning and understanding from across the qualification.

Candidate's performances against each AO were as follows;

AO1- Recall

Most candidates demonstrated a good ability to recall information, especially when creating circuit schedules and selecting materials.

AO2- Understanding

Candidates who scored well overall demonstrated a good level of understanding when working on design sections of the assessment. Low scoring candidates demonstrated poor levels of understanding and this was evident in the written evidence produced.

AO3- Technical skills

Whilst most candidates were able to carry out the practical tasks to a reasonable standard, there were still some who found it difficult to complete in the allocated time.

Many were able to show good levels of conduit and trunking work but many seemed to find difficulty in terminating the SWA cable with much of the evidence showing that the cable had been terminated too short leaving insufficient cable tails for dressing in the consumer unit.

Evidence from the centres seemed to suggest that lower scoring candidates seemed to have difficulties in using the required range of hand tools with cutting the wiring systems being a particular challenge.

AO4- Bringing it all together

This was only really evident in the higher scoring candidates with lower ranged candidates seemingly unable to bring in knowledge based understanding into practical skills. Evidence showed that higher scoring candidates could relate to knowledge gained in health and safety as well as cable selection when carrying out the practical assessment.

AO5- Attending to detail

Only higher scoring candidates seemed to score well in this AO with many striving to attain high standards of work which was very evident in the evidence sampled.

Much of the evidence sampled for the lower scoring group indicated poor housekeeping or lack of information provided for task 1. Poor use of technical language was also evident with incorrect terms or technical justifications.