

# **6720-550 Level 3 Constructing the Built Environment – Theory Exam (2)**

**March 2020**

## **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 2020** examination series. It will explain aspects which caused difficulty and potentially why the difficulties arose, whether it was caused by a lack of knowledge, incorrect examination technique or responses that failed to demonstrate the required depth of understanding.

This document provides commentary on the following assessment;  
**6720-550 Level 3 Constructing the Built Environment – Theory Exam (2)**

# Theory Exam – March 2020

## Grade Boundaries and distribution

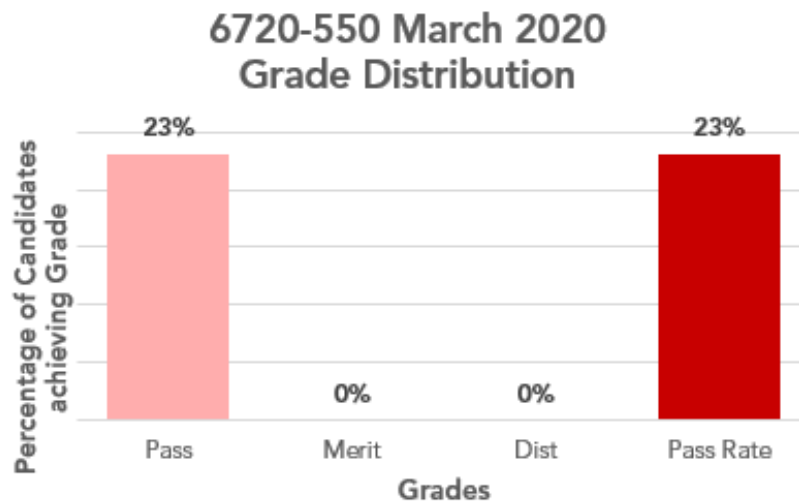
Assessment: **6720-550**

Series: **March 2020**

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	23
Merit mark	32
Distinction mark	41

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



# Chief Examiner Commentary

## General Comments on Candidate Performance

**Assessment component: 6720-550**

### Series 1 (March 2020)

This is the first series this examination has been sat by candidates. Overall, the performance in this paper was of a lower than expected standard, with the answers given in the AO1 recall of knowledge questions indicating that insufficient preparation had been undertaken for this examination.

The topic areas that were generally answered best were on site surveying and civil engineering technology. These included Geographical Information Systems (GIS), highway construction, foundation functions, methods to support deep excavation, plant used in superstructure activities and health & safety requirements when using equipment.

There were a number of topic areas that were not answered well, indicating a lack of knowledge across the units assessed in this examination. Candidates confused temporary and permanent methods of groundwater control and could not clearly explain why in-situ concrete was the best design option for a given scenario situation. The principles of surveying and setting out procedures was also an area that candidates struggled with, including the Bowditch method of correction and how to test for collimation errors. There also appeared to be a lack of understanding on the types of pressures acting on retaining walls and the techniques used to determine forces acting in statically determinate frames.

The topic areas that required reasoning or calculations were either not attempted or only partially answered. The units of measurement were often confused, whilst the formulae were not remembered correctly. These included applying Simpson's Rule to calculate cut and fill quantities and calculating slenderness ratios and bending moments. Surveying and structural mechanics contain some complicated calculations which can take time to master, so it is recommended that centres give candidates different scenarios to practice with.

The aim of the extended response question was to understand and apply the factors that can affect the design and use of a laminated timber portal framed building, together with the advantages of using Global Positioning Systems (GPS) to set out the frame. This discussion question was not answered well by candidates, with the majority of answers stating only some of the technical, aesthetical or structural factors relating to the design, construction and use of the frame chosen. Most candidates were unable to elaborate on these or link them clearly to the scenario. A few higher scoring candidates in the cohort were able to give better descriptions on the factors identified with some advantages of using GPS to set out the frame. However, there was little in the way of reasoning or justifications on why the timber portal frame should be used.

This examination is part of the civil engineering pathway, and is designed as a Level 3 progression into civil engineering, which has a higher level of discipline involved to reach this career. Centres are therefore encouraged to choose suitable candidates for this pathway.

Centres are encouraged to help candidates understand the importance of reading and dealing with the detail of a question. More broadly, centres are advised to make use of learning opportunities in civil engineering technology, site surveying and structural mechanics through site visits, videos, reading and class debate or indeed simulated construction project competition.

Centres are reminded of the City & Guilds Technicals 'Exam Guides' available here: <https://www.cityandguilds.com/qualifications-and-apprenticeships/construction/construction/6720-technical-in-constructing-the-built-environment#tab=documents>