

# Level 3 Technicals in Constructing the Built Environment 6720-042 / 6720-542

part of 6720-35 and 6720-37

November 2017 Version 1.1

**Guide to the examination**

Version and Date	Change Detail	Section
June 2019 v1.1	Amendment to number of resit opportunities	.. Details of the exam

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## Who is this document for?

This document has been produced for centres who offer **City & Guilds Level 3 Technicals in Constructing the Built Environment**. It gives all of the essential details of the qualification's external assessment (exam) arrangements and has been produced to support the preparation of candidates to take the exam/s.

The document comprises four sections:

1. **Details of the exam.** This section gives details of the structure, length and timing of the exam.
2. **Content assessed by the exam.** This section gives a summary of the content that will be covered in each exam and information of how marks are allocated to the content.
3. **Guidance.** This section gives guidance on the language of the exam, the types of questions included and examples of these, and links to further resources to support teaching and exam preparation.
4. **Further information.** This section lists other sources of information about this qualification and City & Guilds Technical Qualifications.

## 1. Details of the exam

### External assessment

City & Guilds Technical qualifications have been developed to meet national policy changes designed to raise the rigour and robustness of vocational qualifications. These changes are being made to ensure our qualifications can meet the needs of employers and Higher Education. One of these changes is for the qualifications to have an increased emphasis on external assessment. This is why you will see an external exam in each of our Technical qualifications.

An external assessment is an assessment that is set and/or marked by the awarding organisation (ie externally). All City and Guilds Technical qualifications include an externally set and marked exam. This must be taken at the same time by all candidates who are registered on a particular qualification. We produce an exam timetable each year. This specifies the date and time of the exam so you can plan your delivery, revision and room bookings/PC allocation in plenty of time.

The purpose of this exam is to provide assurance that all candidates achieving the qualification have gained sufficient knowledge and understanding from their programme of study and that they can independently recall and draw their knowledge and understanding together in an integrated way. Whilst this may not be new to you, it is essential that your learners are well prepared and that they have time to revise, reflect and prepare for these exams. We have produced a Teaching, Learning, and Assessment guide that is you should refer to alongside the present document ([Teaching, Learning and Assessment Guide](#)). If a learner does not pass the exam at their first attempt, there is only one opportunity to resit the exam, so preparation is essential.

### Exam requirements of this qualification

- **Constructing the Built Environment** – Theory exam (3 hours).

The exam is graded and a candidate must achieve at least a Pass grade in order to be awarded the qualification. (In addition to the exam, a synoptic assignment must also be completed and passed). You can find full details of the synoptic assignment in the *Qualification Handbook* and the *Synoptic Assessment Guide* – please see the link to the qualification page at the end of this document.

### When does the exam take place?

The exam is offered on two fixed dates in March or June. The exact dates will be published at the start of the academic year in the *Assessments and Exam Timetable* <http://www.cityandguilds.com/delivering-our-qualifications/exams-and-admin>.

At the start of the programme of study, in order to effectively plan teaching and exam preparation, centres should know when the exam will be taking place and allocate teaching time accordingly. Section 2 of this document gives a summary of the content that needs to be covered in order to prepare learners for the exam and full details of this are given in the Qualification Handbook.

## Form of exam

The exam for this qualification can be taken either on paper (6720-542) or online (6720-042).

## Can candidates resit the exam?

Candidates who have failed an exam or wish to retake it in an attempt to improve their grade, can do so **twice**. The third and final retake opportunity applies to Level 3 only. The best result will count towards the final qualification. If the candidate fails the exam three times then they will fail the qualification.

## How the exam is structured

Each exam has a total of 90 marks and is made up of:

- approximately 20-24 short answer questions
- 1 extended response question.

Multiple choice and short answer questions are used to confirm **breadth of knowledge and understanding**.

The extended response question is to allow candidates to demonstrate **higher level and integrated understanding** through written discussion, analysis and evaluation. This question also ensures the exam can differentiate between those learners who are 'just able' and those who are higher achieving.

More details about and examples of question types are given in Section 3 of this document.

## Assessment Objectives

The exams are based on the following set of assessment objectives (AOs). These are designed to allow the candidate's responses to be assessed across the following three categories of performance:

- **Recollection** of knowledge.
- **Understanding** of concepts, theories and processes.
- **Integrated application** of knowledge and understanding.

In full, the assessment objectives covered by the exam for this qualification are:

Assessment objective	Mark allocation (approx %)
<i>The candidate..</i>	
AO1 <b>Recalls knowledge</b> from across the breadth of the qualification	34%
AO2 <b>Demonstrates understanding</b> of concepts, theories and processes from a range of learning outcomes.	46%
AO4 <b>Applies knowledge, understanding and skills</b> from across the breadth of the qualification in an integrated and holistic way to achieve specified purposes.	20%

## Booking and taking the exam

All assessments for City & Guilds Technical Exams must be booked through Walled Garden. There is a deadline for booking exams, synoptic assessments and any other centre marked assessments, please refer to the time line to check these dates.

The exam must be taken under the supervision of an invigilator who is responsible for ensuring that it is conducted under controlled conditions. Full details of the conditions under which the exam must be taken can be found in the Joint Council for Qualifications (JCQ) document, [Instructions for Conducting Examinations \(ICE\)](#).

## Special consideration

Candidates who are unable to sit the exam owing to temporary injury, illness or other indisposition at the scheduled time may qualify for special consideration. This is a post-examination adjustment that can, in certain circumstances, be made to a candidate's final grade. The Joint Council for Qualifications' guide to the special consideration process can be found at [www.jcq.org.uk](http://www.jcq.org.uk).

To make a request for special consideration, please contact: [policy@cityandguilds.com](mailto:policy@cityandguilds.com)

## Access arrangements

Access arrangements are arrangements that allow candidates with particular requirements, disabilities or temporary illness to take assessments, where appropriate, using their normal way of working. The Joint Council for Qualifications document, *Access Arrangements and Reasonable Adjustments* gives full details and can be downloaded [here](#).

For further information and to apply for access arrangements please see:

[Access arrangements - When and how applications need to be made to City & Guilds](#)  
[Applying for access arrangements on the Walled Garden](#)

## 2. Content assessed by the exam

The exam assesses:

- **Unit 301: Domestic construction technology**
- **Unit 302: Industrial and commercial construction technology**
- **Unit 303: Health and safety in the Built Environment**
- **Unit 304: Construction site supervision**

Each exam assesses a sample of the content of these units. This means that a single exam will **not** cover 100% of the unit content. The full range of content will be assessed over a number of examination series. Details of the coverage of a particular exam paper will **not** be released in advance of the exam itself. Centres should **not** make assumptions about what will be assessed by a particular exam based on what has been covered on previous occasions. In order to be fully prepared for the exam, learners **must** be ready to answer questions on **any** of the content outlined below.

The table below provides an overview of how the qualification's Learning Outcomes are covered by each exam and the number of **marks** available per Learning Outcome (ie **not** the number of *questions* per Learning Outcome). In preparing candidates for the exam, we recommend that centres take note of the number of marks allocated to Learning Outcomes and to assign teaching and preparation time accordingly.

In preparing candidates for the exam, centres should refer to the Qualification Handbook which gives full details of each Learning Outcome.

The following is a summary of only that qualification content which is assessed by the exam and **not** a summary of the full content of the qualification.

Unit	Learning outcome	Topics	Number of marks per section
301 Domestic construction technology	LO1 Identify the different forms, elements, components and materials used in domestic construction	1.1 Substructure and superstructure forms 1.2 Primary and secondary elements 1.3 Components and materials	20
	LO2 Recognise traditional and modern methods of domestic construction	2.1 Methods used in traditional and modern construction 2.2 Characteristics of traditional and modern construction	

	LO3 Understand how domestic buildings perform in use.	3.1 Performance expectations 3.2 Environmental issues	
302 Industrial and commercial construction technology	LO1 Recognise the methods used in industrial and commercial construction	1.1 Types of industrial and commercial buildings 1.2 Common construction forms 1.3 Materials used to construct common forms	10
	LO2 Understand site preparation and substructure work in industrial and commercial construction	2.1 Site and soil investigations 2.2 Site preparation techniques 2.3 Types and uses of foundations	
	LO3 Understand superstructure work in industrial and commercial construction	3.1 Forming connections to construction elements 3.2 Wall construction 3.3 Floor construction	10
	LO4 Identify roofing work in industrial and commercial construction	4.1 Roof construction techniques 4.2 Roof coverings	
303 Health and safety in the Built Environment	LO1 Determine how and where accidents occur in the construction industry	1.1 Accident statistics 1.2 Causes of accidents 1.3 Recording and reporting accidents	7
	LO2 Apply the principles of risk management	2.1 Hazard analysis 2.2 Risk management techniques	
	LO3 Understand health and safety legislation relevant to the construction industry	3.1 Legislation and regulations 3.2 Practical implications of regulations	7



	LO4 Develop training materials for use in the construction industry	4.1 Training needs 4.2 Development of training material	
304 Construction site supervision	LO1 Determine the supervision of labour and resources on construction sites	1.1 The construction team 1.2 Resource management	18
	LO2 Understand the roles and responsibilities of site supervisors	2.1 Management function 2.2 Personal attributes 2.3 Risk management techniques	
	LO3 Use appropriate project documentation for construction projects	3.1 Working with project documentation 3.2 Resource procurement	
		Total marks for sections:	72 marks
		Integration across units*:	18 marks
		<b>Total marks for exam:</b>	<b>90 Marks</b>

\* *Integration across units.* These marks relate to Assessment Objective 4. These marks are awarded to differentiate between levels of performance by candidates taking the exam. The marks are given for how well a candidate has applied their knowledge, understanding and skills from across the units that make up the qualification in an integrated way to meet the requirements of the exam questions.

### 3. Guidance

#### Vocabulary of the exam: use of 'command' verbs

The exam questions are written using 'command' verbs. These are used to communicate to the candidate the type of answer required. Candidates should be familiarised with these as part of their exam preparation.

The following guidance has been produced on the main command verbs used in City & Guilds Technicals exams.

A more detailed version of this table, which also includes the command verbs used in the assignments is published in *City & Guilds Technical Qualifications Teaching, Learning and Assessment* guide.

Command verb	Explanation and guidance
Analyse	Study or examine a complex issue, subject, event, etc in detail to explain and interpret, elements, causes, characteristics etc
Calculate	Work out the answer to a problem using mathematical operations
Compare (...and contrast) (or <b>describe</b> the similarities/differences)	Consider and describe the similarities (and differences) between two or more features, systems, ideas, etc
Define	Give the meaning of, technical vocabulary, terms, etc.
Describe	Give a detailed written account of a system, feature, etc ( <b>..the effect of...on...</b> ) the impact, change that has resulted from a cause, event, etc ( <b>..the process..</b> ) give the steps, stages, etc
Differentiate between	Establish and relate the characteristic differences between two or more things, concepts, etc
Discuss	Talk/write about a topic in detail, considering the different issues, ideas, opinions related to it
Distinguish between	Recognise and describe the characteristic differences between two things, or make one thing seem different from another
Evaluate	Analyse and describe the success, quality, benefits, value, etc (of an end product, outcome, etc )
Explain	Make (a situation, idea, process, etc) clear or easier to understand by giving details ( <b>..how..</b> ) Give the stages or steps, etc in a process, including relationships, connections, etc between these and causes and effects.

<b>Give example(s) illustrate/</b>	Use examples or images to support, clarify or demonstrate, an explanation, argument, theory, etc
<b>Give a rationale</b>	Provide a reason/reasons/basis for actions, decisions, beliefs, etc
<b>Identify</b>	Recognise a feature, usually from a document, image, etc and state what it is
<b>Justify</b>	Give reasons for, make a case for, account for, etc decisions, actions, conclusions, etc, in order to demonstrate why they suitable for or correct or meet the particular circumstances, context
<b>Label</b>	Add names or descriptions, indicating their positions, on an image, drawing, diagram, etc
<b>List</b>	Give as many answers, examples, etc as the question indicates (candidates are not required to write in full sentences)
<b>Name</b>	Give the (technical) name of something
<b>Propose</b>	Present a plan, strategy, etc (for consideration, discussion, acceptance, action, etc).
<b>Select</b>	Choose the best, most suitable, etc, by making careful decisions
<b>State</b>	Give the answer, clearly and definitely
<b>Summarise</b>	Give a brief statement of the main points (of something)

## Question types

The following explains, and gives examples of, types of questions used in City & Guilds Technical exams. In preparing candidates to take the exam, it is recommended that you familiarise them with the requirements of each question type so that they can be effective and make best use of the time available when sitting the exam.

- An effective candidate will gauge the type and length of response required from the question and the number of marks available (which is given for each question on the exam paper).
- Short answer questions may not require candidates to write in complete sentences. Extended response questions will require a more developed response.
- Candidates should read the exam paper before attempting to answer the questions and should allocate time proportionate to the number of marks available for each question or section.

Question type:	Example question	Mark scheme
<p><b>Short answer questions (restricted response)</b> These are questions which require candidates to give a brief and concise written response. The number of marks available will correspond to the number of pieces of information/examples and the length of response required by the question.</p>	<p>Compare how risk assessments and method statements are used in construction projects. (5 marks)</p>	<p>Marks as shown up to a maximum of <b>five</b> marks.</p> <p>A risk assessment is a systematic process of evaluating the potential risks that may be involved in a projected activity or undertaking (1), who the risk may affect (1) and how it may be controlled (1).</p> <p>A method statement is a document detailing how a particular task or activity is to be carried out (1). A method statement should detail the possible risks associated with a particular part of a project (1) and the methods of control to be used to manage the work safely (1).</p>
<p><b>Structured Response Questions</b> These are questions that have more than one part (eg a), b), etc.). The overall question is made up of linked, short answer questions</p>	<p>a) Identify <b>two</b> types of hazardous substance referred to in the Control of Substances Hazardous to Health (COSHH) Regulations. (2 marks)</p>	<p>a) Any <b>two</b> of the following at <b>one</b> mark each.</p> <ul style="list-style-type: none"> <li>• Chemicals or products containing chemicals.</li> <li>• Fumes.</li> </ul>

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which move the candidate through the topic in a structured way. For example, the question will usually start with a 'recall'/'state'/'describe' question followed by an 'explain' to draw out understanding of the topic. They usually have a shared introductory 'stem', and the number of marks may increase through the question.

- Dusts.
- Vapours.
- Mists.
- Nanotechnology.
- Gases and asphyxiating gases.
- Biological agents.
- Germs such as leptospirosis or legionella.

Specific construction materials will be accepted if they come under any of the above headings.

b) Explain why asbestos is not included in the COSHH Regulations, despite being hazardous.

(2 marks)

b) Asbestos is exceptionally hazardous (1) and requires detailed regulations relating directly to asbestos alone (1).

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### Extended response questions

Extended response questions are those that require the candidate to write a longer written response using sentences and paragraphs. These usually require candidates to discuss, explain, etc. a topic in some detail. The question is often based on a short case study, scenario or other prompt. The level of detail should be gauged from the question and the number of marks available.

### Example question

A couple is seeking to convert their integral garage into an en-suite bedroom in order to accommodate their growing family. The garage is supplied with electricity but has no direct access to the house.

Discuss the works required to complete the project.

(12 marks)

### Mark scheme

Indicative content to include:

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Superstructure of buildings, components and materials, conversion and refurbishment, building services, health and safety practices, sustainable design, access, thermal properties, factors affecting design choices, construction techniques to be used.

**Band 1 (0 – 4 marks)**

The candidate identifies a limited number of relevant works to be undertaken, which includes construction and building services and correctly identifies a limited range of the advantages and disadvantages of the proposed work.

**Example band 1 response**

More services will need to be installed to make sure it provides thermal comfort for the accommodator. Also not only for the thermal comfort but to ensure that an en-suite can be installed. An access point in between the house and the garage will need to be made. An excavation will be need to install the services into the building. Pipes will need to be installed into the wall if the customer want some sort of radiator or heating system. Insulation will have to be installed to help provide thermal comfort for the user. Also for some natural light a couple of windows could be installed but this would involve making more holes on the wall which will also cause for more checks to be done to the wall and the way it was constructed. After all of the main works have been done it's just the fact of decorating and furnishing the bedroom.

**Band 2 (5 – 8 marks)**

The candidate identifies and describes an extensive range of the construction and building services works to be done and explains the competing advantages and disadvantages in broad detail.

**Example band 2 response**

- Direct access to house – the new en-suite bedroom would need to be extended or moved in order to be attached directly to the house. This can be done by simply extending the outer wall closest to the house and attach it to the house.
- Heating – the garage would need a heating supply like a radiator or underfloor heating. The room will need to be properly insulated in order to meet certain key regulations.
- Lighting – the lighting will have to be installed eg light bulbs but also natural lighting like windows.
- Access – the room will need a door to go freely between the house and the garage/new bedroom.
- Cavity walls – again in accordance to regulations the room must be built with cavity walls and cavity wall insulation.
- Foundation – the foundation of the garage must be sturdy enough to undergo such works.
- Drainage – proper drainage will need to be installed on the roof of the new room as to not let water collect or pool and cause a leak.
- Fire safety – the room will need to be safe in case of a fire including secondary exits, fire proofing on walls or doors, correct wiring and insulation.
- Ventilation – the room must be ventilated correctly using windows or doors. You could also include a ventilating system.

**Band 3 (9 – 12 marks)**

The candidate describes a comprehensive range of the construction and building services works to be done and critically compares the advantages and disadvantages associated with the proposed changes.



### Example band 3 response

The main works involved in the conversion of the integral garage into a bedroom are concerned with access, insulation, aesthetics and services. The garage was constructed as a garage and, because form follows function, changes will have to be made.

The garage may lack a door into the house and this will have to be provided. This may entail repositioning existing fixtures and fittings and rerouting existing services such as pipes and cables. This will require some thought. A lintel must be provided over the new door to take the load from the wall above. Any existing doors into the bedroom from the outside of the house should be filled in to ensure security. It is not recommended that a bedroom connects directly to the outside world and the en-suite should be accessed only from within the bedroom and the bedroom only from within the house. A window should be fitted into the new wall where the garage doors were previously, and possibly where any side door was, in order to provide natural lighting.

The garage will not have been insulated to the same standard as the rest of the house because it is not heated directly and is unused by people at rest. Insulation must be provided and this could be expanded polystyrene or mineral wool, installed in the external walls behind a new dry-lined finish to the walls.

Next, the appearance of the garage should be improved to make it look more like a bedroom. This will mean installing internal walls (dry-lined, see above) and possibly a new floor above the existing concrete floor (floorboards or thermoplastic tiles). The services will need to be enhanced to meet the new use of the space. Electricity is provided but there may not be a sufficient number of sockets in the garage and the electricity may not run to where the en-suite bathroom is to go. Both the bedroom and the new en-suite will require heating and the existing heating system must be extended into the converted spaces. The bathroom will require both hot and cold water supplies and connection to the existing drainage system. The bedroom should be connected to telecommunication systems such as telephone and cable. Both rooms, but especially the bathroom, will require ventilation, mainly in order to remove stale smells and water vapour (to avoid condensation).

The last thing which needs to be considered is the lighting. Since the bedroom does not require high levels of task illumination, ambient lighting should be sufficient to allow people to move safely around the room and avoid hurting themselves, especially if supported by bedside lamps connected through the power circuit. The bathroom needs a higher level of illumination but no lights should be connected to the ring main within the bathroom and any on/off switches should either be pull-cords or outside the bathroom by the door. If the house has a gas supply it might be worth connecting this to a gas water heater for the bathroom, but provision must be made for the flue-gases to escape.

## Examination technique

Candidates with a good understanding of the subject being assessed can often lose marks in exams because they lack experience or confidence in exams or awareness of how to maximise the time available to get the most out of the exam. Here is some suggested guidance for areas that could be covered in advance to help learners improve exam performance.

### Before the exam

Although candidates cannot plan the answers they will give in advance, exams for Technical qualifications do follow a common structure and format. In advance of taking the exam, candidates should:

- be familiar with the structure of the exam (ie number and type of questions).
- be aware of the amount of time they have in total to complete the exam.
- have a plan, based on the exam start and finish time for how long to spend on each question/section of the exam.
- be aware of how many marks are available for each question, how much they should expect to write for each question and allow most time for those questions which have the most marks available.

### At the start of the exam session

At the start of the exam, candidates:

- should carefully read through the instructions before answering any questions.
- may find it helpful, where possible, to mark or highlight key information such as command words and number of marks available on the question paper.
- identify questions which require an extended written answer and those questions where all or part of the question may be answered by giving bullets, lists etc rather than full sentences.

### Answering the questions

Candidates do not have to answer exam questions in any particular order. They may find it helpful to consider, for example:

- tackling first those questions which they find easiest. This should help them get into the 'flow' of the exam and help confidence by building up marks quickly and at the start of the exam.
- tackling the extended answer question at an early stage of the exam to make sure they spend sufficient time on it and do not run out of time at the end of the exam.

Candidates should avoid wasting time by repeating the question either in full or in part in their answer.

Candidates should **always** attempt every question, even questions where they may be less confident about the answer they are giving. Candidates should be discouraged however, from spending too long on any answer they are less sure about and providing answers that are longer and give more detail than should be necessary in the hope of picking up marks. This may mean they have less time to answer questions that they are better prepared to answer.

### Extended answer questions

Before writing out in full their answer to extended questions, candidates may find it helpful to identify the key requirements of the question and jot down a brief plan or outline of how they will

answer it. This will help clarify their thinking and make sure that they don't get 'bogged down' or provide too much detail for one part of the question at the expense of others.

## **Towards the end of the exam**

Candidates should always set aside time at the end of the exam to read back through and review what they have written in order to make sure this is legible, makes sense and answers the question in full.

If a candidate finds they are running out of time to finish an answer towards the end of the exam, they should attempt to complete the answer in abbreviated or note form. Provided the content is clear and relevant, examiners will consider such answers and award marks where merited.

Further guidance on preparing candidates to take the exam is given in the City & Guilds publication, [Technical Qualifications, Teaching, Learning and Assessment](#) which can be downloaded free of charge from City & Guilds website.

## 4. Further information

For further information to support delivery and exam preparation for this qualification, centres should see:

### City & Guilds

Qualification homepage: <http://www.cityandguilds.com/qualifications-and-apprenticeships/construction/construction/6720-technical-in-constructing-the-built-environment#tab=information> which includes:

- Qualification handbook
- Synoptic Assignment
- Sample assessments

*Technical Qualifications, Resources and Support:* [www.cityandguilds.com/techbac/technical-qualifications/resources-and-support](http://www.cityandguilds.com/techbac/technical-qualifications/resources-and-support)

### Joint Council for Qualifications

*Instructions for Conducting Examinations:* <http://www.jcq.org.uk/exams-office/ice---instructions-for-conducting-examinations>