

Surname	Centre Number	Candidate Number
First name(s)		2



**GCE A LEVEL – NEW**

1509U30-1



**THURSDAY, 13 JUNE 2024 – MORNING**

**BUILT ENVIRONMENT – A2 unit 3  
Materials, Technologies and Techniques**

2 hours 30 minutes

For Examiner's use only		
Question	Maximum Mark	Mark Awarded
1.	10	
2.	4	
3.	6	
4.	8	
5.	4	
6.	18	
7.	12	
8.	20	
9.	18	
<b>Total</b>	<b>100</b>	

**ADDITIONAL MATERIALS**

In addition to this examination paper, you will require a calculator.

**INSTRUCTIONS TO CANDIDATES**

Use black ink or black ball-point pen. Do not use gel pen or correction fluid.

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. If you run out of space, use the additional page(s) at the back of the booklet, taking care to number the question(s) correctly.

**INFORMATION FOR CANDIDATES**

The number of marks is given in brackets at the end of each question or part-question. You are advised to divide your time accordingly.

The total number of marks available is 100.

You are reminded of the necessity for good English and orderly presentation in your answers.

The quality of your written communication, including appropriate use of punctuation and grammar, will be assessed in your answer to Question 9(b).



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Answer **all** questions.

1. (a) Describe how steel is manufactured and processed before use. [4]

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(b) Describe the measures available to prevent and reduce degradation of steel. [6]

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2. Describe **two** ways that building materials may respond to changes in air temperature. [4]

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5. The bathroom in a property being refurbished requires wall tiles from floor to ceiling. The tiles are 450 mm x 300 mm.

The bathroom is 1.9 m long, 2.3 m wide with a floor to ceiling height of 2.3 m. It includes one door (0.9 m wide x 2.25 m high) and one window (1.25 m wide x 0.6 m high).

Calculate the number of tiles required for the bathroom.

Show all calculations

[4]

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Answer = .....



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(b) Describe the scientific principles of measuring sound.

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(c) Describe the purpose of Building Regulations, Approved Document E.

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(b) Describe methods for measuring light within a building.

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9. (a) Describe **three** forms of renewable energy.

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