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higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

28 November 2023

This marking guideline consists of 6 pages.

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QUESTION 1

1.1
- Warning signs
- Prohibitory signs
- Compulsory signs
- Firefighting information signs
- Informative or general signs (5)

1.2 It indicates hearing protection. (2)

1.3
1.3.1 Block brush.
1.3.2 Corner trowel.
1.3.3 Gauging trowel.
1.3.4 Hawk
1.3.5 Laying-on trowel
(5 × 1) (5)

1.4
- Place the steel square on a flat surface.
- Draw a line along the edges.
- Turn the square around and draw a new line on the other side.
- If the two lines meet at a 90° angle, the square is accurate. (Any 3 × 1) (3)

1.5 Firebricks are blocks of refractory ceramic material used in lining furnaces, kilns, fireboxes and fireplaces.✓ It is made to withstand high temperatures.✓ (2)

1.6
- Acidic firebricks
- Basic firebricks
- Neutral firebricks (3)

[20]

QUESTION 2

2.1 Quicklime is also called calcium oxide. It is the white powdery substance that comes out of a lime kiln after calcination.✓

OR

It has a strong chemical ability to absorb water.✓

Hydrated lime is quicklime combined with water to produce calcium hydroxide.
(Any 2 × 1) (2)

2.2
- Fill two-thirds of a measuring cylinder with damp sand.
- Measure the level of the damp sand.
- Cover the damp sand with water and shake the cylinder.
- Allow the sand to settle and note the level of the saturated sand.
- Subtract the level of the saturated sand from that of the damp sand and calculate the percentage by which the sand has bulked. (5)

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2.3
- Test for cleanliness.
- Test for organic matter. (2)

2.4
- Texture
- Colour
- Mass
- Size (4)

2.5
2.5.1 True
2.5.2 True
2.5.3 False
2.5.4 True
2.5.5 False
2.5.6 True
2.5.7 True

(7 × 1) (7)
[20]

QUESTION 3

3.1
- A datum level is a reference point used to establish the horizontal level for the rest of a building.
- The datum level may be shown by marking something that is already on the land, such as a kerb on the side of a pavement.
- Every measurement of height in the building is relative to this datum level.
- The corners are now built, and the brickwork is filled in up to floor level, which is always two courses above ground level.
- Ground floor level will be indicated by marks on the profile at each corner of a building to ensure that a wall is level.
- The floor level mark is kept on the wall by transferring the mark from the profile onto the wall by means of a datum peg, which is a short piece of timber.
- The brickwork heights that will be added will be obtained by means of a gauge rod.

(Any relevant answers 6 × 1) (6)

3.2 A reference point is any point that serves as standard according to which you will standardise other parts of a building. ✓ (1)

3.3
- Tilting mixer
- Reversing drum mixer
- Pan type mixer
- Non-tilting mixer✓ (4)

3.4
- Transportation and delivery should happen in such a way that segregation does not occur in the mix.
- The time lapse between successful mixing and pouring should not exceed the limit at which the mix starts to set. (2)

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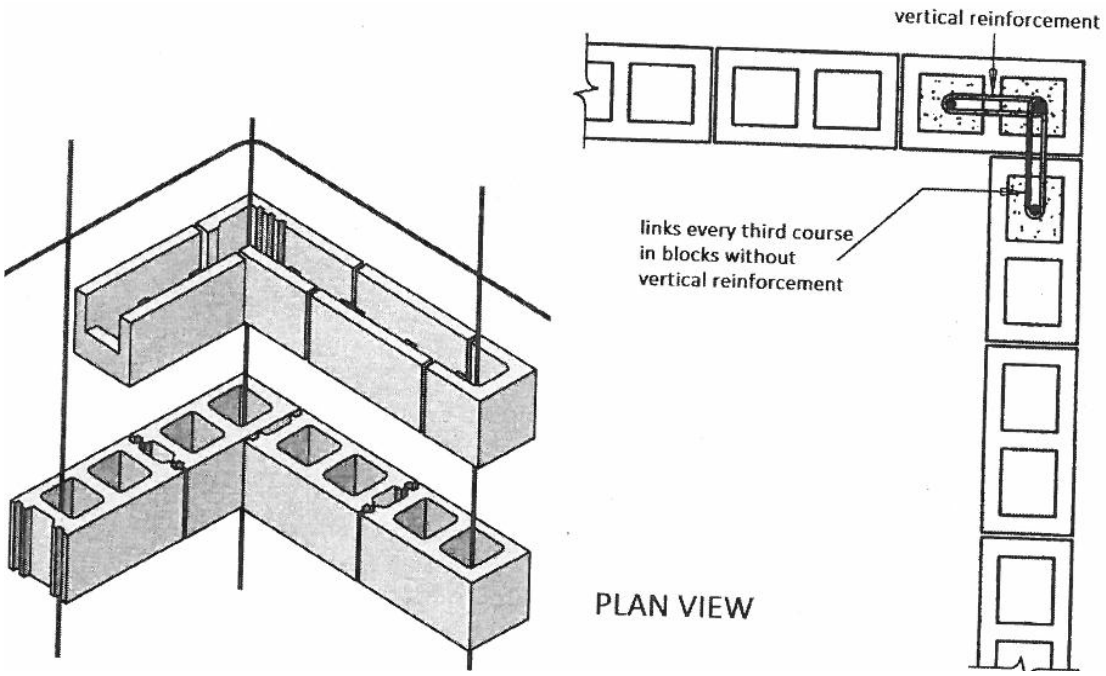
3.5



Sketches = 3
Labelled = 2
Total = 5

3.6 Mortar is a mixture of cement, water and fine aggregate, and is used to join bricks. (2)

[20]

QUESTION 4

4.1. 4.1.1 A header bond consists of header courses only, and is used for decorative brickwork or circular constructions.

4.1.2 An English bond consists of alternate courses of headers and stretchers.

4.1.3 A stretcher bond is one of a few bonds that can be used for half-brick walling. On the face of a wall we see only the long stretcher faces of the bricks except at corners, stopped ends and at cross walls.

(3 × 1) (3)

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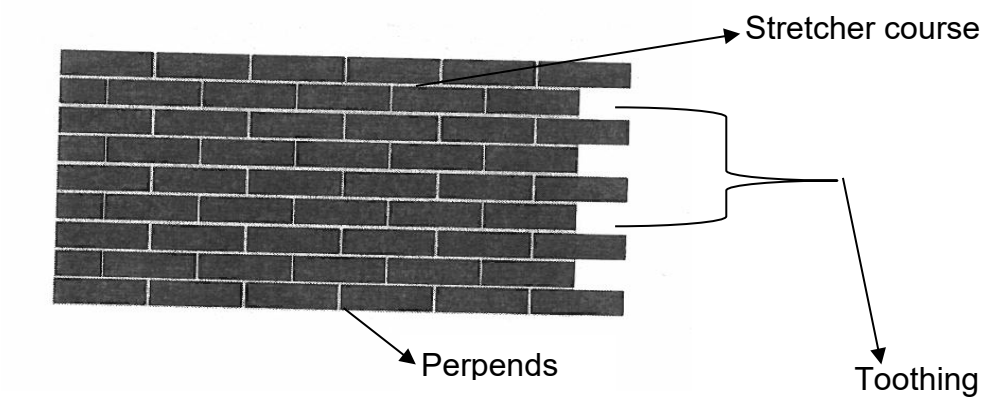
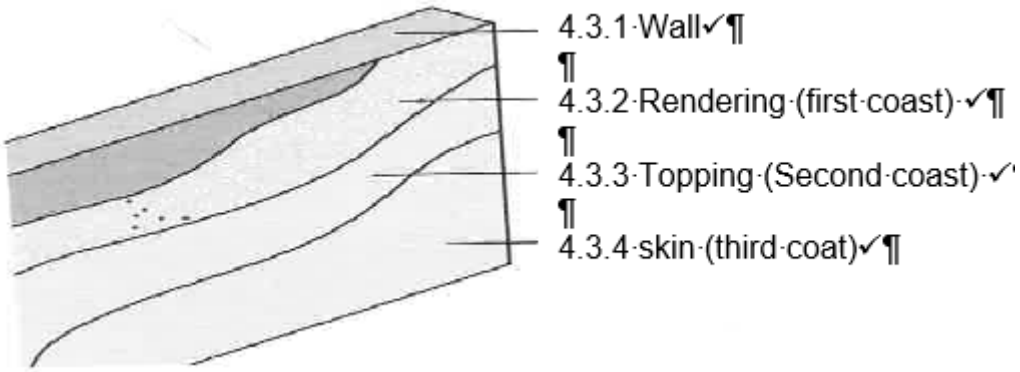
4.2



Sketch = 3
Label = 2
Total = 5 (5)

4.3



(4)

4.4
- Ceramic tiles.
- Porcelain tiles.
- Unglazed tiles.
- Listellos or border tiles.
- Terracotta tiles.
- Glazed tiles. (6)

4.5
- Segmental arch.
- Jack arch.
- Welsh arch.
- Soldier brick arch.
- Semicircular arch. (Any 2 × 1) (2)

[20]

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QUESTION 5

5.1
- Turning piece
- Open lagging
- Close lagging (3)

5.2
- Greek moulding consists of conic sections (the ellipse, parabola and hyperbola).
- Because the Romans used arcs and circles, Roman moulding tend to be more elaborate and decorative. (2 × 2) (4)

5.3 Bio-cement a liquid additive✓ that is mixed with concrete.✓ It prevents the formation of carbon dioxide✓ in concrete to eliminate cracking or failure of the internal reinforcement.✓ (4)

5.4 5.4.1 Internal measurements without door for long side of the wall
3 000 mm – 220 mm – 220 mm
= 2 560 mm ✓✓

Internal measurements without door for short side of the wall
1 500 mm – 220 mm – 220 mm
= 1 060 mm✓✓

Internal measurements of long wall with door
2 560 mm – 900 mm
= 1 660 mm✓✓

Total length of skirting and quarter round moulding
2 560 mm + 2(1 060) mm + 1660 mm
= 6 340 mm✓ (7)

5.4.2 Number of 300 mm lengths needed

= 6 340 mm ÷ 2 000 mm✓
= 3,17 lengths
= 4 lengths✓ (2)

[20]

TOTAL: 100

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