higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

2 AUGUST 2019

This marking guideline consists of 6 pages.

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QUESTION 1

1.1

1.1.1	C
1.1.2	J
1.1.3	K
1.1.4	F
1.1.5	A
1.1.6	L
1.1.7	D
1.1.8	G
1.1.9	E
1.1.10	H

(10 × 1) (10)

1.2
- Setting-out tools
- Plastering/Concreting tools
- Brick-cutting tools
- Jointing tools
- Bricklaying tools
- Tiling tools
- Carpentry tools

(Any relevant 5 × 1) (5)

1.3
- The bubble should respond quickly.
- The vial should be visible from two sides of the level.
- The vial should be straight with two graduation marks indicating the centre position.
- It should be strong enough to withstand any rough handling.
- The spirit level should be as long as possible.
- A level should be checked for accuracy.
- Good quality levels can be adjusted if they are no longer true.

(Any relevant 5 × 1) (5)
[20]

QUESTION 2

2.1 (Accept any relevant answers for 2.1.2–2.1.3)

2.1.1 Concrete is a mixture of river sand, cement/lime, water and stones✓ used for concreting of foundations, columns, staircases, etc.✓ and can be obtained in three main ways namely hand mixed, ready mixed and in a concrete mixer.✓

2.1.2 Mortar is a mixture of sand, water and cement/lime✓ used for bounding of bricks, plastering and filling of cracks✓ and can be obtained by hand mixing or by using a concrete mixer.✓

2.1.3 A cavity wall consists of two skins/leaves✓ with a gap of more than 50 mm between the two skins/leaves.✓ The two skins/leaves are tied together with wall ties.✓

(3 × 3) (9)

2.2 The raw materials needed to produce cement are mined by extracting it from limestone rock, chalk or clay✓ at a quarry and then transported to a cement plant.✓ At the plant, the ores are crushed and milled very finely to produce a fine powder✓ and then sent to the kiln where it is heated to 1 500 °C.✓ It is then rapidly cooled by air to produce clinker.✓ A small amount of gypsum is added to the clinker to regulate how the cement will set.✓ The mixture is then ground finely. Cement additives are added to produce the different types of cement.✓ (Any relevant answer) (7)

2.3 Ordinary Portland cement (1)

2.4
- Rapid-hardening cement
- High-alumina cement
- Ordinary Portland cement
- White cement
- Low-heat cement
- Coloured cement
- Sulphate-resisting Portland cement (Any relevant 3 × 1) (3)

[20]

QUESTION 3

3.1
- Clean the cube.
- Smear release oil very thinly on the inside faces of the moulds.
- Place the cube on a clean, level and firm surface.
- Collect a sample of concrete and scoop the concrete into the moulds in three equal layers. Each layer must be 50 mm deep.
- Compact each layer before placing the next layer of concrete.
- Level off the top with a steel float.
- Mark each cube clearly by writing details.
- Cover the cube with a damp cloth.
- Remove the concrete from the cube after 24 hours.
- Place the concrete in water. (Any relevant 10 × 1) (10)

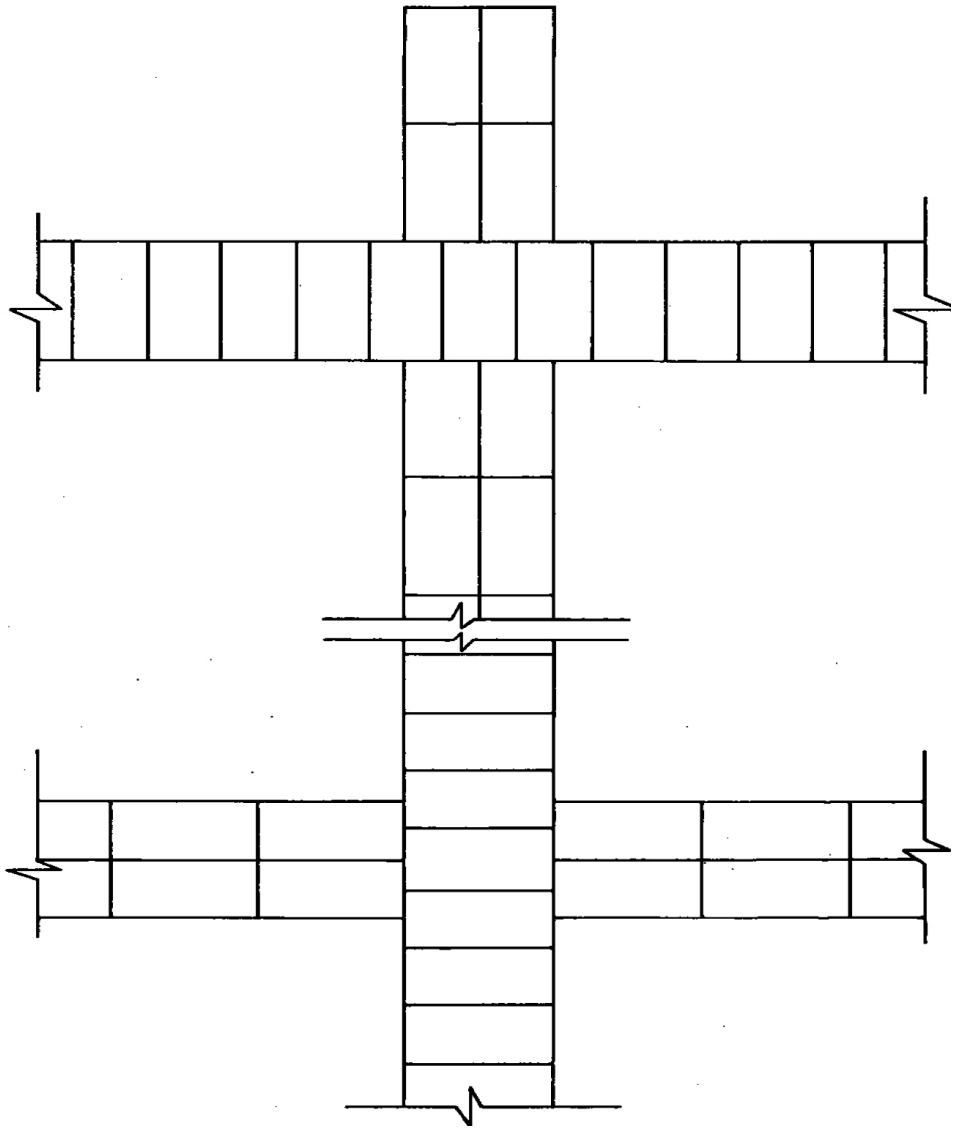
3.2 3.2.1 Slump test (2)

3.2.2
- True/Natural slump✓ – the mould sinks but keeps its shape more or less.✓
- Shear slump✓ – the mould falls sideways.✓
- Collapsed slump✓ – the mould pancakes.✓ (3 × 2) (6)

3.3 No-fines concrete is a mixture of stone/course aggregate, cement and water.✓ No sand is added.✓ (Any relevant answer) (2)

[20]

QUESTION 4



ALTERNATE PLAN COURSE OF A ONE-BRICK CROSS JUNCTION IN ENGLISH BOND
SCALE 1:10

Correct TWO diagrams	12
Stopped ends	2
One-brick drawing	2
Overall neatness	2
Title	1
Scale	1

[20]

QUESTION 5

5.1
- Sailor course
- Stretcher course
- Header course
- Soldier course
- Brick-on-edge stretcher course
- Brick-on-edge header course (roller course) (6)

5.2
- Toothing
- Raking
- Block bonding (Any 2 × 1) (2)

5.3
- English bond
- Stretcher bond
- Flemish bond
- Header bond
- Garden wall bond
- Water bond (Any 4 × 1) (4)

5.4
- Semicircular arch
- Segmental arch
- Elliptical arch
- Rough arch
- Gauged arch
- Jack arch (Any relevant 4 × 1) (4)

5.5 (Accept any relevant answers for 5.5.1–5.5.4)

5.5.1 Intrados is the underside edge of an arch when seen in elevation.

5.5.2 Span is the horizontal distance between the jambs.

5.5.3 Rise is the distance between the springing line and intrados.

5.5.4 Voussoirs are the wedge-shaped brick in an arch.

(4 × 1) (4)
[20]

TOTAL: 100

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