higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BRICKLAYING AND PLASTERING THEORY N1

12 April 2021

This marking guideline consists of 6 pages.

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QUESTION 1

1.1
- Signs that indicate that an order is in force.
- Sings that provide information.
- Signs that warn about a caution, danger or radiation risk. (Any 3 × 1) (3)

1.2 1.2.1 Red – prohibition, danger, firefighting equipment

1.2.2 Yellow – warning

1.2.3 Orange – describing a specific warning

1.2.4 Blue – mandatory to prescribe or inform of a minimum standard (4 × 1) (4)

1.3
- Bricklaying tools
- Setting out tools
- Brick-cutting tools
- Jointing tools (4 × 1) (4)

1.4
- The vial should be visible.
- The bubble tube should be adjustable.
- The bubble should respond quickly.
- Choose the longest level suitable for the task.
- Levels should be strongly made to withstand any rough handling (Any 4 × 1) (4)

1.5
- Fine aggregate/sand
- Cement
- Coarse aggregate/stone and
- Water (4 × 1) (4)

1.6
- Tools should be kept clean.
- Metal boxes help to protect tools.
- Steel tools should be dried and wiped with an oily rag. (Any 1 × 1) (1)

[20]

QUESTION 2

2.1 Slump test (2)

2.2 Natural building stone is naturally occurring rock cut, shaped or selected for use in building construction. (2)

2.3
- Collect a soil sample, and half fill a glass jar with sand.
- Pour in clean water until the jar is three quarters full.
- Shake the jar well for five minutes and place it somewhere where it can remain undisturbed for 1 to 2 hours to settle.
- If one teaspoonful salt is added to the water, it will quicken the process and silt will settle in a layer on top of the sand layer.
- Sand of good quality should have less than 8% clay present. (5)

2.4 No-fines concrete refers to concrete made of stone, cement and water without sand. (2)

2.5 It allows moisture or water to escape from a building or wall. (2)

2.6
2.6.1 C
2.6.2 F
2.6.3 D
2.6.4 A
2.6.5 B

(5 × 1) (5)

2.7 The purpose of using the 3-4-5 method is to ensure that the corners of a building are square. (2)

[20]

QUESTION 3

3.1
3.1.1 A gauge rod is used by a bricklayer to give the vertical measurements for the height of windowsill and door heads.

3.1.2 An erf is a section of the land sometimes known as a plot or a stand.

3.1.3 The datum level is the first level setting from which all other vertical measurements are taken.

(3 × 1) (3)

3.2 A building line is determined by the local authority and sets out the distance from any road servitude.✓ No building may be built beyond that line, except boundary fences or walls. ✓ (2)

Boundary lines are the same; they identity the outer edges of a shape or plot.✓ It is the line or plane indicating the limit or the extent of a plot. ✓ (2)

3.3 Concrete is a mixture of fine aggregate, coarse aggregate, cement and water. (2)

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3.4
- Wheelbarrows or buckets
- Lorries or trucks
- Dumpers
- Belt conveyers
- Chutes
- Pumps and pipelines (Any 4 × 1) (4)

3.5 Pilaster blocks are column structures that are normally part of a wall but designed was a load-bearing part of the structural design.

OR

Often, it is reinforced to accommodate bearing the load, but it is constructed in such a way that it is pleasing to the eye.

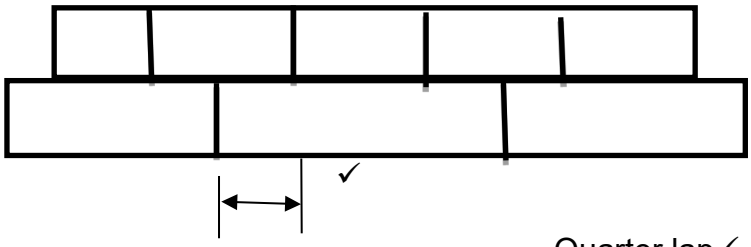
OR

Are used to strengthen and stabilise walls to create corners and piers to locate control joints and to create certain architectural effects.

(Any one of the above) (2)

3.6
- Smooth face
- Polished face
- Honed face
- Split face (Any 3 × 1) (3)

3.7



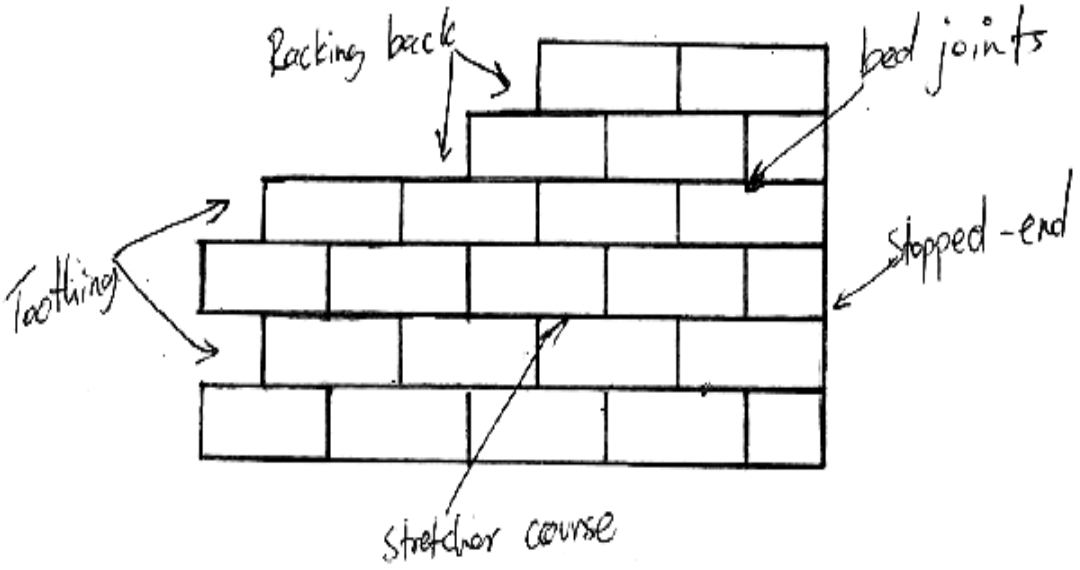
Quarter lap✓ (2)

[20]

QUESTION 4

4.1
- Header bond
- Stretcher bond
- English bond
- Flemish bond (Any 3 × 1) (3)

4.2



Correctness	2
Labelled	3
TOTAL	5

(5)

4.3 First coat rendering is known as rendering or undercoat. (1 × 4) (2)

4.4
4.4.1 True
4.4.2 True
4.4.3 True
4.4.4 False
4.4.5 True
4.4.6 True

(6 × 1) (6)

4.5 Walls are plastered to strengthen and seal✓ the interior and exterior walls of a building with a cement- or lime-based plastering mortar that dries quickly.✓ (2)

4.6
- According to the method of cutting or fixing the bricks and cement or clay, for example, rough arches, axed arches and gauge arches.
- According to the shape of the arch, for example, Gothic camber, semi-circular and segmental arches.
- According to the number of centres from which the arches are set out.

(Any 2 × 1) (2)

[20]

QUESTION 5

5.1
- The key brick, block or stone is the centre of the arch.
- Each ring is treated as a separate arch.
- When constructing a gauge or axed arch the voussoirs are marked on the intrados.
- In ringed arches the voussoirs are laid as a brick-on-edge course.
- When constructing the template used to cut the bricks to the required shape in an axed arch it is important to note that the widest part of the template must not exceed 73 mm.
- All the bed joints radiate to the centre or striking point.
- Voussoirs of the same ring must be equal in size. (Any 3 × 1) (3)

5.2 Greeks' mouldings✓ are formed of conic sections.✓ (2)

Romans' mouldings✓ use arcs and circles.✓ (2)

5.3
- A health hazard and therefore safety precautions need to be taken when working with them
- Are costly
- Require heat to cure properly
- Have a long curing period
- Have poor UV-resistance (Any 4 × 1) (4)

5.4 Wastage is the quantity that cannot be used in completing the task due to damage or breakage. (1 × 2) (2)

5.5 5.5.1 Area = L x B
= 20 m x 1,6 m ✓
= 32 m^2 ✓ (2)

5.5.2 Number of bricks = 54 x 32 ✓
= 1 728 ✓ (2)

5.6 Volume = l x w x h✓
= 2 500 x 3 000 x 200✓
=150 000 000 mm✓

OR

Volume = l x w x h ✓
= 2,5 x 3 x 0,2✓
= 1,5 mm✓

Volume of a concrete slab (3)

[20]

TOTAL: 100

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