higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

# MARKING GUIDELINE

## NATIONAL CERTIFICATE (VOCATIONAL)

## MASONRY
## NQF LEVEL 3

## 27 November 2023

**This marking guideline consists of 6 pages.**

Copyright reserved

## QUESTION 1

1.1
1.1.1 False
1.1.2 True
1.1.3 True
1.1.4 True
1.1.5 False
1.1.6 True
1.1.7 True
1.1.8 True
1.1.9 False
1.1.10 True

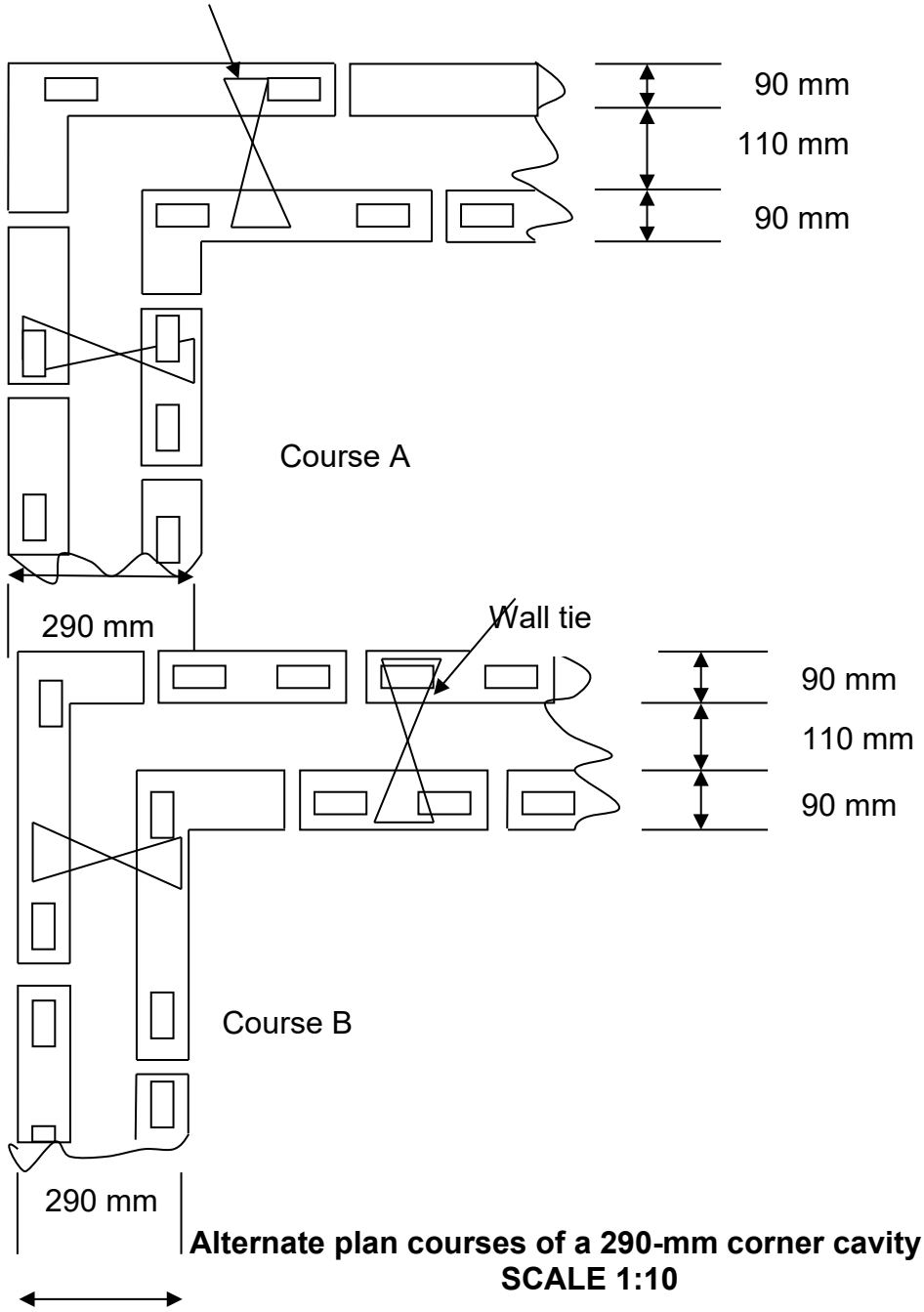
(10 × 1) (10)

1.2
- Temporary openings called cleanout holes can be used to remove mortar droppings in the bottom of a cavity.
- Timber battens can be used to clean the inside of the wall of droppings and debris.
- Openings can be made low down the wall.
- The cavity should be cleaned on a daily basis so that the mortar droppings do not set hard.

(Any relevant answers accepted) (4)

1.3 Damp-proof course (1)

1.4




**Alternate plan courses of a 290-mm corner cavity wall**
**SCALE 1:10**

| | |
|---|---|
| Correctness of course A/B | 3 marks each course = 6 marks |
| Overall neatness | 2 marks each course = 4 marks |
| Labelling/Dimensions | 3 marks each course = 6 marks |
| Wall ties inserted | 1 mark each course = 2 marks |
| Title of overall drawing | 1 mark |
| Scale used below title | 1 mark |
| **TOTAL MARKS** | **20 MARKS** |

**[35]**

## QUESTION 2

2.1 (Relevant alternate answers accepted for 2.1.1–2.1.2)

2.1.1 A test used to determine the stiffness of mortar✓ by pushing the thumb slightly with pressure against a finished section of a wall✓ (2)

2.1.2 Used to improve the structural performance of masonry walls by providing additional resistance to lateral loads;✓ are usually helical bars or steel rods✓ (2)

2.2 Place the straight edge on two masonry units of the same measurements.✓ Take a long spirit level or another straight edge and place it on the top of the straight edge✓ and adjust the straight edge upwards or downwards✓ until the bubble is in the centre of the vial of the spirit level.✓ Measure the distance between the top of the straight edge and the bottom of the spirit level.✓ If the distance is greater than 6 mm, the foundations should be levelled, and if it is less than 6 mm, the checks can be completed.✓

(Any relevant answer accepted) (6)

2.3 The usual way of reinforcing walls is with the use of bed joint reinforcement.✓ Bed joints are the horizontal joints between courses built with masonry and mortar.✓ However, in hollow masonry it is better to reinforce the hollow blocks horizontally and vertically or to fill the cavities in a cavity wall with concrete.✓ These methods strengthen the masonry and control any cracking in the wall.✓ Hollow units lie on a rather thin strip of mortar.✓ These hollow walls are strengthened with vertical reinforcements and concrete infill; sections are created that act like composite columns or ring beams.✓ Only units that will be used in lintels are this shape.

(Any relevant answer accepted) (6 × 1) (6)

2.4 190 mm for the height of the unit ✓+ 10 mm for the mortar between the units✓ (2)

2.5
- Concave
- V
- Weathered
- Flush
- Raked
- Struck

(Any relevant answers accepted) (6 × 1) (6)

2.6 When laying masonry units, always cut off any mortar that sticks out from the joint; never scrape the mortar on the face of the unit.✓ Should smears of mortar droppings on the face of masonry occur, allow it to dry✓ and then brush it off✓ and wash the surface of the masonry unit.✓ Cover the tops of unfinished walls.✓ Turn scaffold boards at the end of each day to prevent possible rain from splashing mortar or dirt onto the masonry wall.✓

(Any relevant answer accepted) (6 × 1) (6)

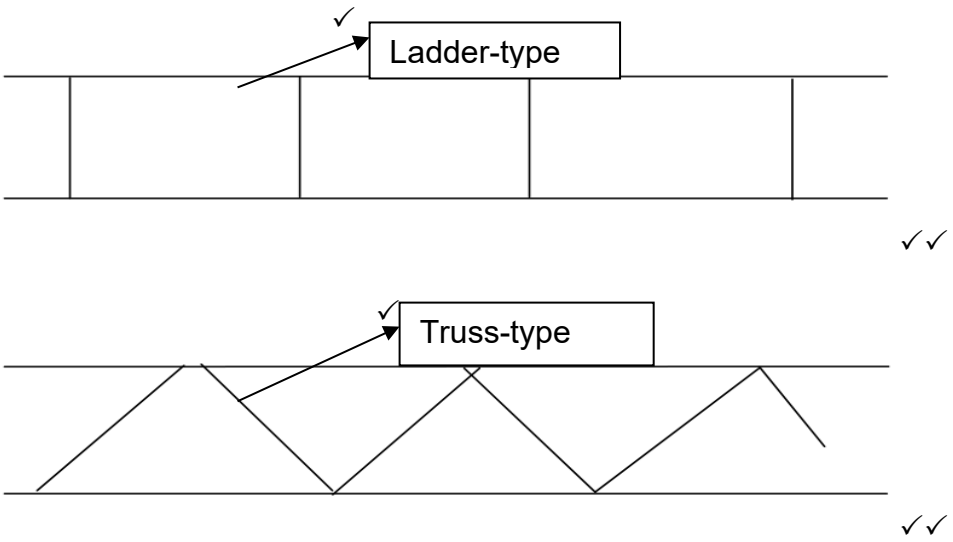
**[30]**

## QUESTION 3

3.1
3.1.1 Soffit
3.1.2 Bed joints
3.1.3 Arch ring
3.1.4 Rise
3.1.5 In situ concrete
3.1.6 Wedges
3.1.7 Pre-cast concrete

(7 × 1) (7)

3.2




(Relevant alternate sketches accepted) (6)

3.3 Make the opening in the hollow unit before laying the unit into the wall✓ and use a masonry saw to cut two vertical slots at the bottom of the exposed face of the block.✓ Remove the cut-off piece✓ and fix the plug box into the hole,✓ then insert mesh✓ under the unit to support the mortar. Use the mortar to hold the box in position.✓ Conduits can be passed through the hollow units connected to the plug box.✓ (Any relevant answer accepted) (7)

3.4
- The mortar must still be thumbprint hard when you rake and rule mortar joints.
- Use a raking tool to rake out the joints.
- Remove the excess mortar.
- For a concave joint, use a round rule (jointer).
- For a raked or square joint, use a square rule.

(Any relevant answer accepted) (5)

3.5 Allow large mortar droppings to harden slightly and remove it with the aid of a trowel, putty knife or chisel.✓ Rub concrete surfaces with another piece of concrete masonry and then rub the surface with a stiff fibre bristle brush.✓ If required, chemical cleaning agents can be used with instructions being followed.✓ If acid is used to clean concrete masonry, try a small panel to check that it works✓ and if so, it can be applied on larger areas.✓ (Any relevant answer accepted) (5 × 1) (5)

3.6
- Use roof anchors made from galvanised iron.
- Hook the anchors at the bottom end.
- Ensure that the anchors measurements are correct.
- Embed the anchors in the core of the hollow units.
- Fill the core of the hollow unit with concrete.
- Support the anchors within the wall with expanded metal closures to hold the anchors in position. (Any relevant answer accepted) (5 × 1) (5)

**[35]**

**TOTAL: 100**

Copyright reserved