higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

MASONRY
NQF LEVEL 3

7 December 2020

This marking guideline consists of 5 pages.

Copyright reserved

QUESTION 1: GENERAL

1.1 False
1.2 False
1.3 True
1.4 False
1.5 True
1.6 False
1.7 True
1.8 True
1.9 False
1.10 False

(10 × 1) **[10]**

QUESTION 2: CAVITY WALL CONSTRUCTION

2.1
- At door and window frames
- Below door frames
- Bottom of the wall above ground level
- Below windowsills
- Above window openings
- At door and window jambs (6 x 1) (6)

2.2 Clean-out holes or temporary openings✓ are formed by leaving out every fourth unit at the first course of the wall.✓ As the construction continuous, the droppings are removed by using a long pole to scratch it out through the clean-out holes.✓ This must be done daily to prevent the mortar from setting, which makes it difficult to remove.✓ Care should be taken not to damage the DPC.✓ At the completion of the construction of the wall/building, the clean-out holes are closed✓ by replacing the units and finishing off the construction.✓ (7)

2.3 NO SKETCH WAS PROVIDED (10)

2.4
- Can keep driving rain from penetrating the inner wall surface.
- Good thermal insulation to keep the building warm in winter and cool in summer.
- No need for external rendering.
- Enables the use of cheaper alternative materials for inner construction.
- A nominal 225-mm cavity wall has a higher sound insulation value than a standard one-brick wall (5)

2.5 It is used to connect leaves of masonry together for mutual support.

(2)
[30]

QUESTION 3: BASIC MASONRY WALL CONSTRUCTION WITH HOLLOW UNITS

3.1
- Full unit – most of the walls
- ¾ unit – walls
- ½ unit – intersections, returns
- ¼ unit – door frames, window frames and lintels
- Sill unit – windowsills
- Lintel unit – lintels
- Bond unit – lintels/ring beams
- Sash unit – window frames (Any 6 × 2) (12)

3.2
- Rule the horizontal joints first by using a long jointer.
- Keep the jointer in place and cut away excess mortar with a trowel.
- Polish the upper edge of the joint.
- Place the tool on the joint, apply pressure.
- Move it to the front and back to form the joint.
- Use a short jointer for the vertical joint by placing it on the mortar joint.
- Apply pressure and move it up and down to form the vertical joint.
- Remove excess mortar with a trowel.
- Lightly brush the wall to remove small droppings. (Any 8 × 1) (8)

3.3
- Take two bricks of equal height together with a 2,5-m long straightedge course.
- Put two bricks at 2-m interval.
- Place the straightedge on top of the bricks with the spirit level on top of the straightedge.
- Continue to move bricks at 2-m intervals. (4)

3.4 Lay the units, tap them in position and remove or cut all access mortar that sticks out from the joint with a trowel.✓ Prevent smearing of the mortar against the masonry.✓ If mortar was smeared or dropped against the wall, allow it to dry a little,✓ then brush it off lightly✓ and wash the wall with clean water.✓ Protect the base of the wall from rain-splashed mud and mortar droppings✓ by turning scaffold boards on edge and placing them against the wall.✓ cover the tops of unfinished walls with plastic sheeting to keep water from entering.✓ (Any 6 × 1) (6)

[30]

QUESTION 4: ADVANCED MASONRY WALL CONSTRUCTION

4.1
- Voussoirs
- Key brick
- Ring
- Extrados
- Intrados
- Soffit
- Abutments
- Skewbacks
- Springing points
- Springing line
- Crown
- Haunch
- Span
- Rise (Any 10 × 1) (10)

4.2
- Dilute hydrochloric acid with water or a special masonry cleaner. (The dilution should be 5% hydrochloric acid and 95% water.)
- Always soak the masonry with clean water before you apply the acid dilution.
- Use the diluted acid to clean the mortar droppings and smears off the brickwork.
- Rinse the brickwork thoroughly so that no acid remains on it. (4)

4.3 NO SKETCH WAS PROVIDED (6)

4.4
- Bond block
- Standard bond block
- Standard lintel block (3)

4.5 Brick force is a light welded steel fabric,✓✓ made of two hard-drawn wires held apart by perpendicular or diagonal cross wires.✓✓ (4)

4.6
- Bed joints are the horizontal joints between courses built with masonry and mortar.
- 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.
- Hollow units lie on a rather thin strip of mortar.
- We strengthen these hollow walls with vertical reinforcements and concrete infill.
- We create sections that act like composite columns or ring-beams.
- Only units that you will use in lintels are the shape of the letter U.
- These methods strengthen the masonry and control any cracking in the wall. (Any 3 × 1) (3)

[30]

TOTAL: 100

Copyright reserved