



**higher education
& training**

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

BUILDING AND CIVIL TECHNOLOGY N3

7 AUGUST 2019

This marking guideline consists of 6 pages.

QUESTION 1

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

(10 × 1) (10)

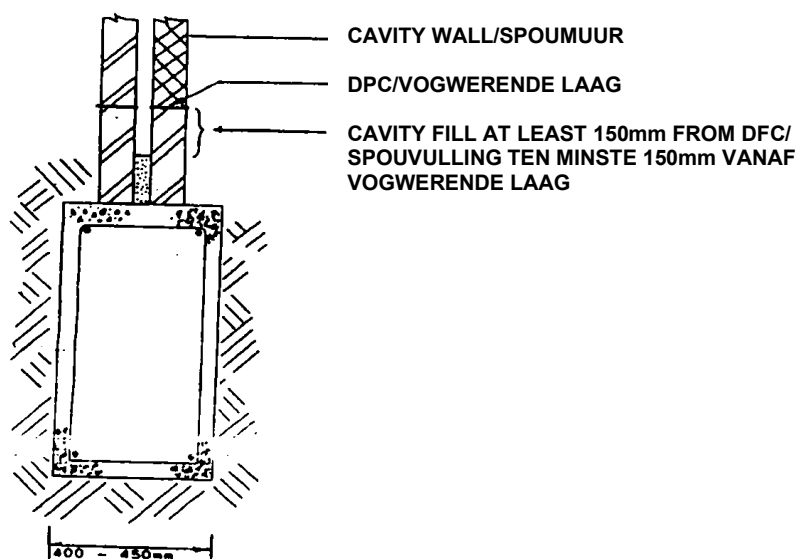
- 1.2
- Appropriate vocational skill, knowledge and experience
 - Ability to use skills and knowledge in practice
 - Desire for continuous personal improvement in all areas
 - Ability to acquire experience and build on it
 - Ability to allocate duties and responsibility to staff
 - Ability to demonstrate how the work should be done
 - Ability to supervise, encourage, and correct whenever necessary
 - Willingness to accept full responsibility for own actions
 - Appreciation of obligations to management, superiors and workers

(Any 6 × 1) (6)

[16]

QUESTION 2

2.1



Mark allocation

Correctness	2
Labelling	4
Neatness	2
Total	8

(8)

2.2 Stepped foundation can be neatly marked out from the original foundation heights.✓ On a slope, it is advised to step the foundations to save an unnecessary wastage of concrete.✓ When a step in the foundation is planned, care should be taken not to weaken the joint in the foundation strip.✓ (3)

- 2.3
- All materials used must be in good condition and without any defects.
 - Timber should not have bark or be painted so that defects are hidden.
 - Guard rails and toe-boards must be fixed to working platforms higher than 2 m.
 - All scaffolds must be properly braced and tied to a building capable of holding it.
 - A suitable way for ascending and descending the scaffold must be provided.
 - Ledgers must be fixed to standards by load-bearing couplers and they must be level. The vertical distance between ledgers must not exceed 2m.
 - After erection scaffolds must be inspected by a competent person.
 - Scaffolds must be inspected by a competent person after erection, before being used, and after rainy weather. They must also be inspected at least once every week.
 - The ground on which the scaffold will stand must be levelled and compacted to make it firm enough to carry any load. Sole & base plates must be used. Scaffold boards are ideal sole plated.
 - All scaffolds must be properly braced and tied to a building that is capable of holding it
- (Any 5 × 1) (5)

[16]

QUESTION 3

- 3.1
- Quantity of water used
 - Grading of aggregate
 - Ratio of aggregate
 - Duration of mixing process
 - Compaction (agitation) of mixture
 - Weather condition during curing
 - Method of placing
- (Any 4 × 1) (4)
- 3.2
- Highly absorbent
 - Long drying time
 - Lot of cement used in drying mixture
 - Special techniques for mixing
 - Shrinks a lot
- (Any 3 × 1) (3)
- 3.3
- Cheap
 - Light weight
 - Dries rapidly
 - Allows no capillary action
 - Low degree of strength
 - Excellent thermal insulation
 - Does not easily strip from work
 - Exerts low pressure on form work during placing
 - Little shrinkage when it dries
 - Highly permeable
- (Any 7 × 1) (7)
- 3.4
- 3.4.1 Damp-proof/Water resistant
- 3.4.2 Dry
- (2 × 1) (2)
- [16]**

QUESTION 4

- 4.1
- Guarantees large quantities of high-quality timber
 - Ensures that furniture will be according to present standards
 - Ensures that consumer gets value for money
 - Helps manufacturers to save on costs of wood
 - Better utilisation of resources by allowing the use of invasive trees and inferior timber like pine in the furniture industry
- (5)
- 4.2
- 4.2.1 Face weld
- 4.2.2 Reinforcement thickness
- 4.2.3 Fusion face
- 4.2.4 Throat thickness
- 4.2.5 Seal run
- (5 × 1) (5)

- 4.3 4.3.1 GT
 4.3.2 WP
 4.3.3 VP
 4.3.4 IC
 4.3.5 S
 4.3.6 SP

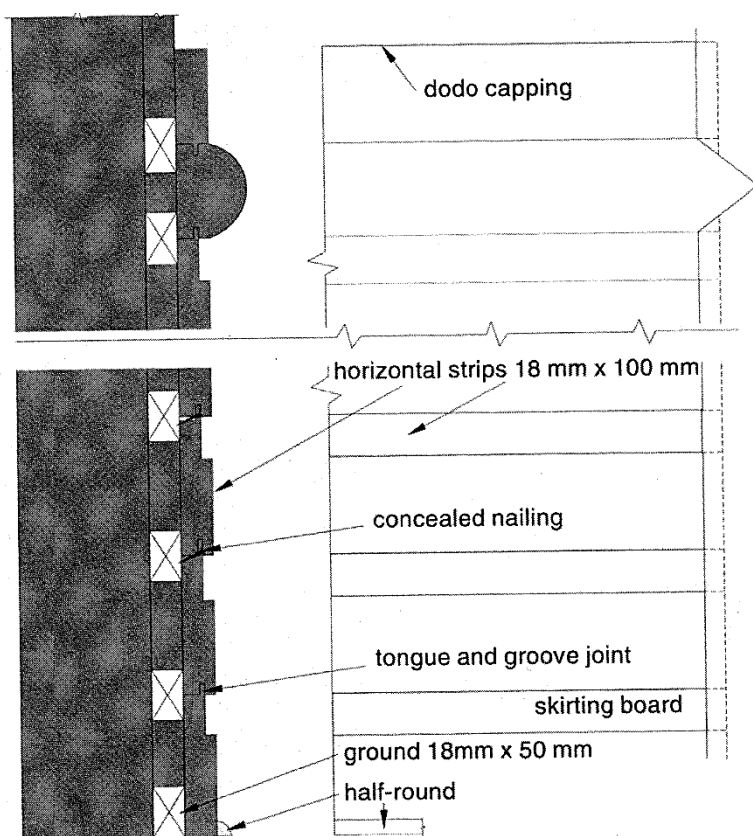
(6 × 1) (6)
[16]

QUESTION 5

- 5.1
- Main distribution box
 - Internal distribution board
 - Earth-leakage relay
 - Heating appliances
 - Wall plug sockets
 - Lights

(Any 5 × 1) (5)

5.2

**Mark allocation**

Correctness	2
Labelling	4
Neatness	2
Total	8

(8)

- 5.3
- Oil paint
 - Emulsion (PVA) paint
 - Synthetic paint
 - Cellulose paint
 - Water paint
- (Any 3 × 1) (3)
[16]

QUESTION 6

- 6.1 6.1.1 Area = $\frac{11\,500}{100} \checkmark$
 = 115 m² ✓
- 6.1.2 Labour cost = 115 × 275 ✓
 = R31 625 ✓
- (2 × 2) (4)
- 6.2 6.2.1 Amount of bricks required = 180 × 100 ✓
 = 18 000 bricks ✓
- 6.2.2 Amount of sand required = 18 000 ÷ 1 000 ✓
 = 18 tons ✓
- (2 × 2) (4)
- 6.3 Concrete foundation = 25 × 0,600 × 0,25 ✓
 Amount of concrete = 3,75 m³ ✓
- Cost of concrete = 3,75 × 475 ✓
 = R1 781,25 ✓
- (4)
- 6.4 6.4.1 Notch trowel
 6.4.2 Pincers
 6.4.3 Tile cutter
 6.4.4 Metal spreader
 6.4.5 Tile cutter
- (5 × 1) (5)
- 6.5
- Use a minimum slope of 1:50 for proper drainage.
 - Do not build on low areas in which water will accumulate.
 - Always slope paving away from buildings.
- (3)
[20]
- TOTAL: 100**