



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

**T270(E)(N22)T
NOVEMBER 2010**

NATIONAL CERTIFICATE

BUILDING DRAWING N3

(8090023)

**22 November (X-Paper)
09:00 – 13:00**

REQUIREMENTS: A2 drawing paper

This question paper consists of 5 pages.

**DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
BUILDING DRAWING N3
TIME: 4 HOURS
MARKS: 100**

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
2. Read ALL the questions carefully.
3. Number the answers correctly according to the numbering system used in this question paper.
4. Use BOTH sides of the drawing paper.
5. ALL the drawings are to be fully dimensioned and neatly finished off with descriptive titles and notes to conform with the SANS Recommended Practice for Building Drawings.
6. Write neatly and legibly.

QUESTION 1

Draw to scale 1:10, the following TWO sectional views to show the constructional difference with regard to damp-proof layer, cavity construction, weeping holes, hard core, foundation walls and floor finishes.

- | | | |
|-----|---|------|
| 1.1 | A vertical section through a cavity wall and foundation | (10) |
| 1.2 | A vertical section through a solid wall and foundation | (10) |

PTO

Use the following specifications for both sectional views:

Walls:	Cavity wall 270 mm Solid wall 220 mm
Plaster:	Cavity wall 19 mm internal only Solid wall 19 mm both sides
Weeping holes:	In cavity wall only
Floor screed:	25 mm to both floors
Skirting:	Cavity wall 75 mm x 22 mm meranti Solid wall 75 mm high PVC
Concrete floor:	75 mm on both floors
Foundations:	Cavity wall 810 mm x 300 mm strip foundation Solid wall 660 mm x 220 mm strip foundation
Natural ground level:	Not less than 150 mm below DPC to both floors

[20]

QUESTION 2

The hearth of an upper floor is supported with the aid of a trimmer arch. The chimney breasts projects 300 mm into the room and the hearth floor projects a further 500 mm to the inside of the room up to the trimmer joist.

Draw to scale 1:10, a vertical section through the centre of the hearth using the following specifications:

Arch:	Brick on edge
Trimmer joist:	220 mm x 75 mm
Floor joist:	220 mm x 50 mm
External wall to upper room:	220 mm
Projection of wall to bottom room:	330 mm
Bearer:	50 mm x 50 mm
Hardwood kerb:	50 mm x 22 mm
Flooring boards:	100 mm x 22 mm

[20]

PTO

QUESTION 3

Draw to scale 1:10, a vertical section through a parapet gutter, part of the parapet wall, part of the roof and part of the suspended ceiling.

Use the following specifications:

- Roof covering : Roof pitch 30 degrees
- : Rafter and tie beam 150 mm x 38 mm
- : Fibre cement roofing slates
- : Parapet gutter 300 mm wide
- : Parapet wall 330 mm up to the wall plate level then reduced to 220 mm from the wall plate to the coping stone height
- : Saddle-back coping stone
- Suspended ceiling: 4 mm thick fibre cement ceiling board suspended 375 mm from the tie beam by means of 38 mm x 38 mm hangers

[20]

QUESTION 4

Draw to scale 1:10, the TWO alternate plan layers of a straight wall (no returns or corners) built in English bond. The wall is two bricks in thickness and eight-and-a-half bricks in length.

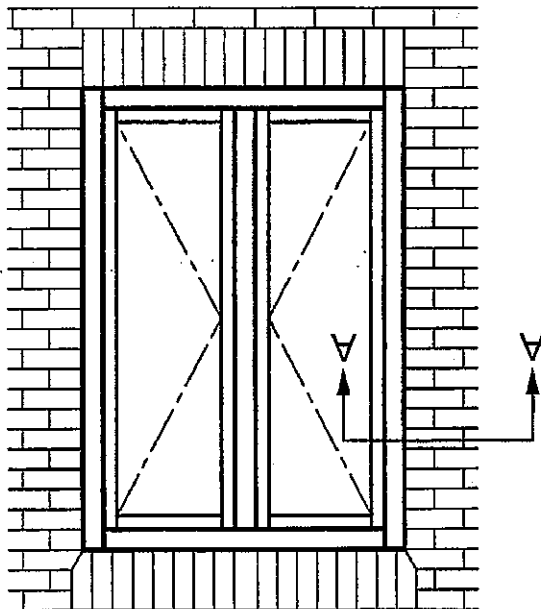
Show only ONE stopped end on the left-hand side of the wall.

[19]

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QUESTION 5

FIGURE 1 below, shows a front view of a wooden window built into a 270 mm thick cavity wall. The wall is built with face brick on the outside and ordinary stock bricks on the inside. The wall is plastered on the inside. Draw to scale 1:5, a horizontal section as shown at A-A showing ALL the constructional details.

**FIGURE 1****[10]****QUESTION 6**

Draw to scale 1:10, a vertical longitudinal section through at least THREE complete steps of a timber staircase.

Use the following specifications:

Closed stringer: 450 mm x 32 mm
Tread: 300 mm
Riser: 180 mm
Carriage: 100 mm x 50 mm

Overall thickness of treads and risers are 32 mm.
Rough brackets, own discretion.

QUESTION 7

Briefly describe the procedure that should be followed with regard to the preparation and application of paint to steel or iron.

[6]**TOTAL: 100**

