



higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

T210(E)(J19)T

NATIONAL CERTIFICATE

BUILDING DRAWING N2

(8090012)

19 July 2018 (X-Paper)

09:00–13:00

REQUIREMENTS: ONE A2 drawing sheet

Calculators and drawing instruments may be used.

This question paper consists of 5 pages.

DEPARTMENT OF HIGHER EDUCATION AND TRAINING
REPUBLIC OF SOUTH AFRICA
NATIONAL CERTIFICATE
BUILDING DRAWING N2
TIME: 4 HOURS
MARKS: 100

INSTRUCTIONS AND INFORMATION

1. Answer ALL the questions.
 2. Read ALL the questions carefully.
 3. Number the answers according to the numbering system used in this question paper.
 4. ALL drawings must be drawn to the required scale.
 5. Use both sides of the DRAWING SHEET.
 6. ALL drawings, including the candidate's information, must be done in pencil.
 7. Ink pens are not allowed.
 8. ALL drawing work must comply with the relevant SANS (SABS) recommended codes.
 9. Use your own discretion where dimensions are not given.
 10. ALL abbreviations and symbols must comply with the latest National Building Regulations and ALL relevant SANS (SABS) codes.
 11. A balanced layout is very important and candidates will be penalised for poor planning.
 12. Sketches and/or diagrams must be neat, reasonably large, in proportion and fully labelled.
 13. ALL labelling must be written in capital letters.
 14. Provide an appropriate title and scale to ALL drawings.
 15. Write neatly and legibly.
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QUESTION 1: FOUNDATIONS AND FLOORS

The external walls of a dwelling are built with 190 mm-thick concrete blocks on top of a one-brick thick foundation wall built with face bricks. The external walls are plastered on both sides. The floor slab is finished off with 20 mm screed and 225 mm × 75 mm × 22 mm parquet blocks on top of the screed.

Draw, to scale 1 : 10, a vertical section through the foundation, floor and external wall, to show the construction details. Label ALL components and show the necessary dimensions.

SPECIFICATIONS:

- 600 mm × 250 mm concrete foundation
- 220 mm foundation wall
- 190 mm concrete block external wall
- 100 mm floor slab six courses above the concrete foundation
- 150 mm hard core
- 20 mm screed
- 225 mm × 75 mm × 22 mm parquet blocks
- 76 mm × 22 mm skirting
- 19 mm plaster (internally and externally)
- Ground level 300 mm above the concrete foundation

[22]

QUESTION 2: BRICKWORK

A one-brick wall built in English bond is four courses high and six bricks long. One end is a stopped end and the other end is toothed.

Draw, to scale 1 : 10, the front view and the alternate plan courses of a one-brick wall built in English bond. The drawings must be aligned below each other, labelled and dimensioned.

The following labels must be indicated: stretcher, header, toothed end, stopped end and queen closer.

[16]

QUESTION 3: DOORFRAMES

A solid doorframe with a one-panel door that opens outward is to be built flush with the interior surface of a one-brick external wall plastered on both sides. The plywood panel for the door is held in position by means of a planted mould.

Draw, to scale 1 : 2, the horizontal section through the wall, frame jamb, door stile and part of the plywood panel.

Label all component as per given specifications.

SPECIFICATIONS:

- 220 mm wall
- 100 mm × 75 mm frame jamb
- 110 mm × 44 mm door stile
- 19 mm plaster both sides
- 22 mm quadrant
- 10 mm plywood
- Planted mould
- 75 mm × 19 mm architrave

[15]

QUESTION 4: JOINERY

A three-light door, 2 030 mm high, 820 mm wide and 44 mm thick is constructed with a 110 mm-wide top rail, 110 mm-wide stiles and 220 mm-wide bottom rail. The door is divided into three equal vertical obscure glass panels by muntins 75 mm wide.

Draw, to scale 1 : 10, the front elevation of the three-light door. Label all components as per given detail.

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QUESTION 5: ROOFS

A roof with a pitch of 30° and an overhang of 300 mm is supported by a 190 mm-thick concrete block external wall and covered with corrugated fibre cement sheets. The wall is plastered on both sides. The ceiling is constructed of a 6 mm gypsum ceiling board fixed to 38 mm × 38 mm branderling which are nailed directly onto the tie beam.

Draw, to scale 1 : 10, a vertical section through the eaves and part of the ceiling to show construction details. Insert the dimension of the overhang.

The drawing must include the following specifications with labels:

SPECIFICATIONS:

- 190 mm concrete block external wall
- 19 mm plaster
- 114 mm × 38 mm wall plate
- 114 mm × 38 mm rafter
- 114 mm × 38 mm tie beam
- Corrugated-fibre cement sheet
- 230 mm × 32 mm fascia board
- 75 mm × 50 mm purlin
- 100 mm square gutter
- 38 mm × 38 mm bracing spaced at 400 mm centres
- 6 mm Rhino board ceiling
- 10 mm fibre-cement board
- Cornice

[23]

QUESTION 6: MASONRY

Make a neat, labelled drawing to show the construction of squared rubble built uncoursed.

The drawing must show the following with labels:

- Coping
- Riser
- Leveller or trough
- Sneck

[10]

TOTAL: 100