higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

CARPENTRY AND ROOF WORK
NQF LEVEL 3

27 November 2023

This marking guideline consists of 5 pages.

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QUESTION 1

1.1
1.1.1 C
1.1.2 F
1.1.3 E
1.1.4 B
1.1.5 A

(5 × 1) (5)

1.2
- Wind conditions in the area
- Quality of the craftsmanship
- Load that the roof must support
- Materials used to erect the roof
- Size of the roof (5)

1.3 A rational design is designed by a competent person involving a process of reasoning and calculation, which may include a design based on a standard or other suitable document. (2)

1.4
- Preparation
- Getting started
- Fixing the wall plate
- Setting out and marking the wall plate
- Assembling the girder trusses
- Raising the trusses
- Erecting the trusses
- Installing permanent bracing
- Fixing the fascia
- Fixing the roof anchors
- Fixing the tilting batten
- Fixing the underlay
- Spacing and fixing the battens (13)

1.5
- When a roof is more complicated than a simple gabled roof
- When a roof has a span larger than 8 m (2)

1.6
- To ensure safe construction
- To communicate and aim for similar goals
- To certify work that is structurally sound (3)

[30]

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QUESTION 2

2.1 2.1.1 Geyser, roof materials, roof tiles and ceilings
2.1.2 Birds, rain, wind and roof carpenter
(2 × 2) (4)

2.2 A roof truss is made of a number of pieces of timber joined together in a triangular pattern to form a sturdy frame to carry the roof covering and any other loads that it is designed for. (2)

2.3
- Provides cover/protection for people and their assets
- Gives stability to a building
- Beautifies structures (3)

2.4 A competent person is qualified by virtue of his/her training and experience to design, erect, manufacture and inspect a roof structure. (2)

2.5 The valley should be able to collect and let the water flow down the slope from two intercepting roof planes (2)

2.6
- Concealed valley
- Inverted roll-top ridging valley
- Lined softal valley
- Bastard valley
- Open valley (Any 3 × 1) (3)

2.7 Pitch/Gradient = $\frac{\text{Change in vertical distance}}{\text{Change in horizontal distance}}$ (1)

2.8 To drive the nail completely into the timber when erecting a truss as part of final work (2)

2.9
- Preparation and getting started
- Fixing wall plates and setting out
- Raising and erecting the trusses
- Fixing the hoop-iron straps
- Installing the runner
- Straightening the top chords and fixing the fascia
- Fixing the valley planks/boards
- Fix the web bracing
- Fix the roof anchors
- Fixing the underlay and battens (10)

2.10
- It makes the bearing surface level.
- It acts as bearing surface for the roof trusses.
- It helps to spread the load evenly to the foundation. (Any ONE) (1)

[30]

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QUESTION 3

3.1
- SANS 10400
- SANS 10243
- NHBRC
- Local municipality
- ITC Roof and Roof Erectors Handbook (5)

3.2
3.2.1 True
3.2.2 True
3.2.3 True
(3 × 2) (6)

3.3
- Extra costs to repair
- Delays in occupancy
- Suffering inconvenience
- Difficult to sell the house in feature (4)

[15]

QUESTION 4

4.1
4.1.1 metal roof tiles
4.1.2 metal, fibre-cement sheets
4.1.3 concrete tiles, clay tiles, fibre-cement tiles, natural slates
(3 × 1) (3)

4.2
4.2.1 G
4.2.2 F
4.2.3 E
4.2.4 D
4.2.5 C
4.2.6 B
4.2.7 A
(7 × 1) (7)

4.3
- Downwind planes
- Ridges
- Verges
- Eaves (4)

4.4 The frame of the roof is designed according to a specified type of roofing material and any other materials might not be suitable for that designed roof frame. (2)

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4.5
- Centre-to-centre spacing of trusses
- Rafter spacing
- Roof slope
- Waterproofing end laps
- Number of bolts and connectors
- Roof member span
- Batten/purlin size and spacing
- Timber grade
- Roof member sizing (9)

[25]

TOTAL: 100

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