higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

PLUMBING
NQF LEVEL 2

28 November 2023

This marking guideline consists of 5 pages.

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QUESTION 1: INTRODUCTION TO PLUMBING

1.1 At the last stage of water purification and tests show that it is safe for human consumption✓the water is stored in storage tanks ✓until needed and pumped to our houses and buildings..✓ (3)

1.2 Filtration is a process to filter water to purify or treat it and to remove unwanted impurities. (2)

1.3 They used large open pipes and stone bridges called aqueducts to transport the water. (2)

1.4
- Planning for the job
- Briefing the plumber
- Waiting in readiness
- Overseeing the project (4)

1.5 Blackwater (1)

1.6 Sludge is the soft, thick substance ✓left behind ✓when waste or sewage has been cleaned and treated. ✓ (3)
[15]

QUESTION 2: PLUMBING PRINCIPLE AND CODE OF PRACTICE

2.1 To generate pressure so that the gravity can be used to get the water to flow. (2)

2.2
- It can be pulled.
- It can be pushed. (2)

2.3 $P = D \times g \times h$✓
$= 1\,000 \times 9{,}81 \times (1{,}2 + 8)$ ✓
$= 1\,000 \times 10 \times 9{,}2$✓
$= 92\,000$ Pa✓
$= 92$✓ kPa✓ (6)

2.4
2.4.1 Part 1
2.4.2 25
2.4.3 French drain
2.4.4 Head
2.4.5 Desalination
(5 × 1) (5)
[15]

QUESTION 3: MATERIALS, TOOLS AND EQUIPMENT

3.1 Spirit level / Plumb bob (1)

3.2 3.2.1 A ladder is a piece of equipment used for climbing✓ up and down to and from high places.✓

3.2.2 A scaffold is a platform✓ on poles that allows people to work in places that are high above the ground.✓

(2 × 2) (4)

3.3
- Clear the platform of all materials, tools and equipment.
- Take the board down.
- Then take out the locating pin.
- The board rest will slide down to the bottom.
- Lift the collapsible stay to fold up the trestle. (5)

[10]

QUESTION 4: WATER-PIPE ASSEMBLY

4.1
- Blowtorch
- Lighter
- Sandpaper/steel wool
- Flux
- Cloth
- Solder wire
- Pipe cutter
- Connectors
- Copper pipe (Any 7 × 1) (7)

4.2
- Class 460/1
- Class 460/2
- Class 460/3 (3)

4.3
4.3.1 True
4.3.2 True
4.3.3 False
4.3.4 True
4.3.5 True
4.3.6 False
4.3.7 False

(7 × 1) (7)

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4.4
- Select all the tools, materials and equipment needed to solder copper pipes.
- Remove all the dirt from the pipe with sandpaper.
- Put a thin coating of flux onto the end of the pipe.
- Measure how much solder is needed and clamp the pipe into a vice on a workbench.
- Slot the elbow or another connector over the pipe.
- Heat the pipe using a gas flame.
- Put the end of the solder wire at the joint.
- After finishing and being certain that the solder has been drawn in all around, remove any excess flux and solder by wiping around the ends of the joints with a clean cloth.
- Collect and clean all the tools and equipment used and clean the working area. (Any 8 × 1) (8)

[25]

QUESTION 5: CUTTING AND JOINING OF METALS

5.1 5.1.1 The section of brickwork that can be seen above the roof through which the smoke escapes from the chimney

5.1.2 A low wall at the edge of a high roof that helps to protect the roof, especially used with a flat roof

5.1.3 The portion of the roofing that is turned up against a vertical surface, such as a wall or chimney face

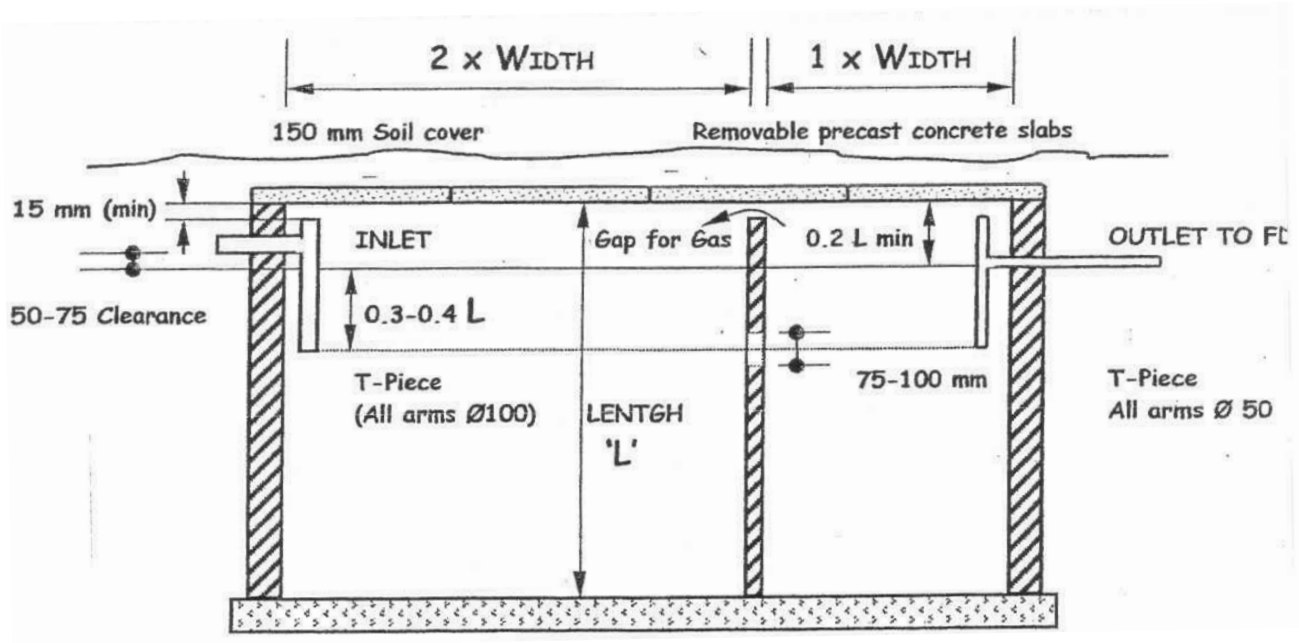
(3 × 2) (6)

5.2
- Lap
- Square butt
- Square V-butt
- Double V-butt (4)

[10]

QUESTION 6: SETTING OUT BELOW-GROUND DRAINAGE SYSTEMS

6.1



(10)

6.2
6.2.1 Rodding eye
6.2.2 Inspection eye
6.2.3 Vent pipe
6.2.4 Gully
6.2.5 Wash hand basin
6.2.6 Water closet

(6 × 1) (6)

6.3
6.3.1 1:40
6.3.2 1:60
6.3.3 1:90
6.3.4 1:120

(4 × 1) (4)

6.4
- Clean and sieved building sand
- Selected granular material
- Concrete bedding
- Non-organic material

(4)

6.5 North (1)

[25]

TOTAL: 100

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