higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE (VOCATIONAL)

PLUMBING
NQF LEVEL 2

17 November 2022

This marking guideline consists of 6 pages.

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QUESTION 1

1.1
- Planning for the job
- Briefing the plumber
- Waiting in readiness
- Overseeing the project (4)

1.2
- The collection dam
- Water screening
- The mixing tank
- The sedimentation tank
- Carbonation
- Filtration
- Chlorination
- The storage tank (Any 6 × 1) (6)

1.3
1.3.1 False
1.3.2 False
1.3.3 False
1.3.4 True
1.3.5 True
(5 × 1) (5)
[15]

QUESTION 2

2.1 P = D × g × h✓
= 1 000 × 9,81 × 2,5✓
= 24,525✓ Pa **OR** 24,525 kPa✓ (4)

2.2 P = D × g × h✓
= 1 000 × 9,81 × (1,3 + 7) ✓
= 1 000 × 9,81 × 8,3✓
= 81423 pa✓
= 81,424✓ kPa✓ (6)

2.3
- How to do a task properly
- To know that the work they are doing is safe
- To know the type and quality of equipment that the plumber must use (3)

2.4 It is the loss of water pressure due to the friction against the inside walls of the pipe through which the water flows. (2)
[15]

QUESTION 3

3.1
3.1.1 F
3.1.2 D
3.1.3 A
3.1.4 C
3.1.5 B

(5 × 1) (5)

3.2
- Tape measure
- Spirit level
- Hacksaw
- Hammer
- Screwdriver

(Any applicable 5 × 1) (5)
[10]

QUESTION 4

4.1 The inside of the pipe has to be reamed or filed✓ to get rid of any rough burrs✓ that form when the pipe is cut. (2)

4.2
- Rubber-O-ring couplings
- Glue called PVC-weld or solvent cement
- Electro compression fitting
- Brass compression fittings

(Any 3 × 1) (3)

4.3
4.3.1 False
4.3.2 True
4.3.3 True
4.3.4 False
4.3.5 True
4.3.6 True
4.3.7 True
4.3.8 False
4.3.9 False
4.3.10 False

(10 × 1) (10)

4.4 4.4.1
- Check whether all the tools, material and equipment that one needs to make the soldering joint is available.
- Ensure that both ends of the copper pipe or pipes are cut off squarely.
- Remove all dirt and clean both ends of the copper pipes to be soldered by using steel wool, sandpaper or a flat file.
- Take the capillary fitting to be used to make the joint and clean the insides of both ends of the fitting by using steel wool, sandpaper or a round file. (4)

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4.4.2
- Put a thin coating of soldering flux-paste onto the ends of each pipe and on the insides of both ends of the capillary fitting to be used.
- Place the capillary fitting over one end of the copper pipe and ensure that is pushed in until is stops. Now take the other end of the pipe that is prepared and slip it into the open end of the capillary fitting until it stops.
- By using a gas flame, heat both ends of the capillary fitting where the pipe enters the fitting.
- As soon as the joint and the pipe are hot enough, place the end of the soldering wire at joint. It will start to melt and flow into and around the joint. Repeat the process on both sides of the joint. (4)

4.4.3
- After having finished and one is satisfied that the solder has been drawn in all round, remove any excess flux and solder by whipping around the ends of the joint with a clean cloth.
- Collect and clean all tools and equipment used as well as the working area. (2)

[25]

QUESTION 5

5.1
- Cover flashing
- Apron flashing
- Stepped flashing
- Raked flashing
- Eaves flashing
- Soakers
- Vent pipe flashing (Any 5 × 1) (5)

5.2
- Oxygen
- Acetylene (2)

5.3
- Tin snip
- Cold chisel + hammer
- Guillotine (3)

[10]

QUESTION 6

6.1
- The pipe must be as straight as possible
- Pipes must be properly supported so that they don't sag
- Pipes must be laid so that the water will flow down and through them easily
- The joints and connections as well as the inspection covers must be watertight.
- Drain should never run under a building.
- There should be enough pipes to lead the waste to the system (6)

6.2
- At the beginning of the drainage area
- Where a pipe bends
- Where a pipe joins another pipe
- If the pipe is very long (4)

6.3 Slope = distance × gradient
= 15 000 mm × 1/40
= 375✓ mm ✓ (5)

6.4
6.4.1 110 mm drainage pipe
6.4.2 Bottle trap
6.4.3 Junction
6.4.4 Gulley trap
6.4.5 Bend
6.4.6 Gulley head
6.4.7 Gulley concrete
6.4.8 Rodding eye
6.4.9 Double socket
6.4.10 Pan connector/pan collar

(10 × 1) (10)
[25]

TOTAL: 100

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