

higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

APRIL EXAMINATION

PLUMBING THEORY N1

24 MARCH 2014

This marking guideline consists of 5 pages.

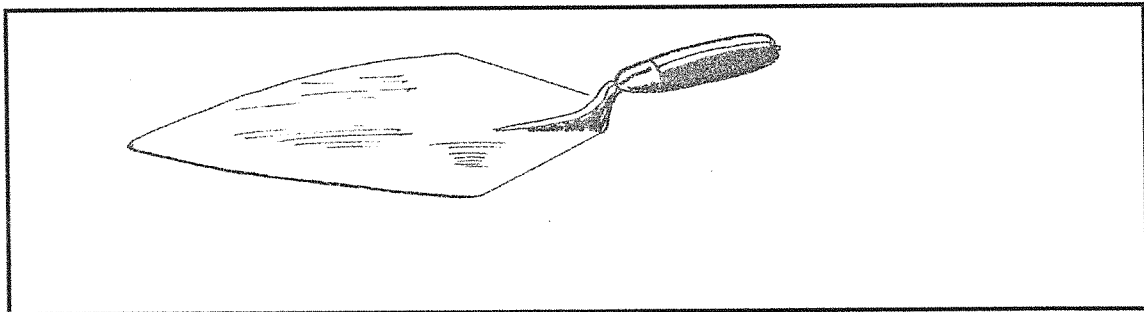
QUESTION 1

- 1.1
- Review the effectiveness of health and safety measures.
 - Identify potential hazards at the work place.
 - Audit major incidents.
 - Investigate any complaints by employees.
 - Make presentations to the employer or Health and Safety committee regarding matters arising from above points.
 - Make presentations to the employer on general matters affecting the health and safety of employers.
 - Inspect the workplace, including any article, substance, plant, machinery or health and safety equipment at the workplace with a view to the health and safety of employees, at such intervals as may be agreed upon with the employer.
- (Any 2 × 2) (4)
- 1.2
- 1.2.1 To prevent an excessive mass causing the sides of trenches to collapse
- 1.2.2 Suitable material such as stout timber or steel plates should be used to shore up the inside of excavations
- (2 × 2) (4)
- 1.3 For treatment of minor injuries and should contain sufficient and suitable equipment
- (2)
[10]

QUESTION 2

- 2.1
- To prevent the tube ends to sink into the ground
 - To distribute the load of scaffolding over a larger area
- (4)

2.2

**BUILDER'S TROWEL**

(4)

- 2.3
- Portable drilling machine – for drilling holes in different materials
 - Grinding machine (bench grinder) – grinding metals such as drill bits, chisels, etc.
 - Angle grinder – used to cut or grind materials using different disc types for different materials
 - Threading machine – to cut threads and ream pipes.
 - Arc welding machine – used to weld metal together by means of an arc
 - Generators – to generate electricity for power tools on the building site where no electricity is available
 - Plate compactor or rammer – used to compact trench beds and excavations
 - Manual metal arc – to weld pieces of metal together by means of flash of light formed by the flow of electricity between two points
 - Spot-welding machine – joining pieces of metal by welding them on spots
 - Emery grinding machine – to grind and sharpen tools on it (Any 2 × 1)

(2)
[10]**QUESTION 3**

- 3.1 3.1.1 Behaviour of metal when exposed to atmosphere, acid or sewage
- 3.1.2 The opposite of hardening the grain structure of a metal becomes finer which reduces brittleness
- 3.2 3.2.1 Water
- 3.2.2 Gas
- 3.2.3 Electricity
- 3.2.4 Telecommunication

(2 × 2) (4)

(4 × 2) (8)
[12]**QUESTION 4**

- 4.1 • Arc welding: a process consisting of using an oxyacetylene flame to heat two pieces of metal together to a molten state. At the joint the metals are running together or are fused into one piece.
- Gas welding: the process of fusing metal together using the flow of electricity between metal and electrode. By a flash of light formed by the flow of electricity between two points.
- 4.2 An electrode is a piece of wire covered with flux.
- 4.3 • Maroon – acetylene gas
- Black – oxygen

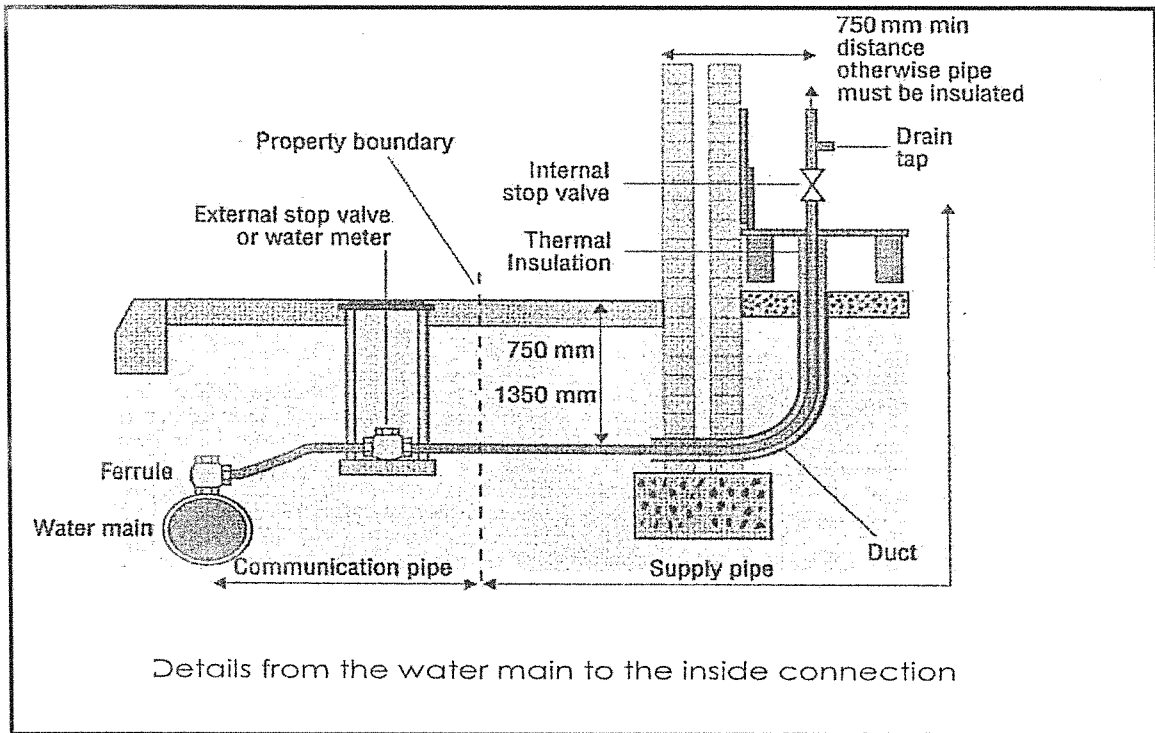
(2 × 2) (4)

(2)

(2)
[8]

QUESTION 5

5.1



COLD-WATER SUPPLY TO A DWELLING

(8)

5.2 Potable water is the water that is safe to drink.

(2)

[10]

QUESTION 6

SANS (SABS) symbols	
Pressure control valve	
Combined pressure control and expansion control valve	
Float valve	
Vacuum control valve	
Temperature and pressure (TP) safety valve	

(5 × 2) [10]

