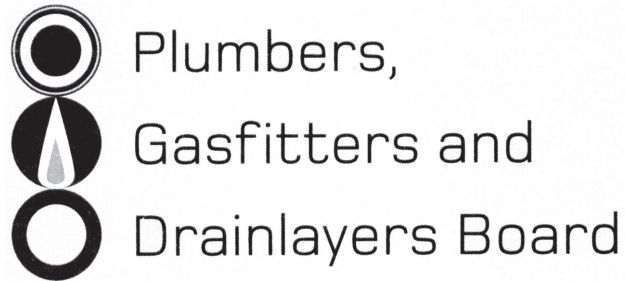


No. 9198



REGISTRATION EXAMINATION, NOVEMBER 2014
CERTIFYING DRAINLAYER

ANSWER SCHEDULE

ANSWER 1

- (a) 150 mm (2 marks)
- (b) Reflux valve must be within a chamber. (1 mark)
Chamber diameter must correspond to depth of chamber. (1 mark)
Inspection × 2 (inlet and outlet). (1 mark)
Flexible joint. (1 mark)

(4 marks)

Total 6 marks

ANSWER 2

Any FIVE (1 mark each)

- Excavate trench.
- Box and pour base with concrete.
- Position packers into concrete at correct gradient and correct distance apart.
- Install drain.
- Install wing walls.
- Pour haunching.
- Test pipe for leakage.
- Back fill and tidy up work area.

Total 5 marks

ANSWER 3

Drains connect to NUO connection point.

Drains for all downstairs fixtures provided.

Drain connection(s) point(s) for upstairs fixtures provided.

Gully dish for overflow relief included.

Correct number and location of inspection points.

Total 10 marks

ANSWER 4

(a) Vents required on A (40 mm), C (50 mm), D (50 mm) and F (40 mm). (1 mark each)

(b)

| Drain | Min diameter | Min gradient |
|-------|--------------|--------------|
| A | 65 | 2.5% |
| B | 80 | 1.65% |
| C | 100 | 1.65% |
| D | 65 | 1.65% |
| E | 65 | 2.5% |
| F | 100 | 1.65% |

(1 mark each)

(½ mark each)

(9 marks)

Total 13 marks

ANSWER 5

(a)

- Inspection at wall face.
- Inspection on 90° corner.
- Flexible joint between chamber and inspection bend.
- Four Ys.

(1 mark each, 4 marks)

(b) Sketch to be cross sectional.

- Rectangular chamber.
- Lid.
- Four openings.
- Benched or inspection openings.

(2 marks)

Total 6 marks

ANSWER 6

(a) Carpark – $0.01 \times 20 \times 10 \times 80 = 160 \text{ m}^2$
Courtyard – $0.01 \times 5 \times 10 \times 80 = 40 \text{ m}^2$

(b) A – Type 2.
B – Type 2.
C – Type 1.

ANSWER 7

- (a) Any TWO (1 mark each)
- The underground service may not be metallic and the locator cannot detect them.
 - Hum detectors only pick up live electricity cables that have a current flowing through them.
 - The locator may not be able to distinguish between two services running closely together and indicate them as a single service.
 - There could be interference from other metallic objects in the area.
 - The surface area of the service may not be large enough for the locator to detect.
 - The locators often do not accurately indicate the depth of the service.
 - The locator may detect a different service to the service required. (2 marks)
- (b)
- Plans.
 - Hand digging until services are positively located. (2 marks)
- (c)
- A 300 mm.
B 100 mm.
C 600 mm. (3 marks)
- Total 7 marks**

ANSWER 8

- (a)
- (i) A soil that has the ability to pass rapidly into suspension in water.
 - (ii) The distance that an on-site system shall be situated from any facility, boundary or body of water.
 - (iii) The rate at which liquid infiltrates a particular soil.
 - (iv) An area set aside for future use for land application to replace original land application area when required.
 - (v) Expected waste water volumes allowing for peak occupancy and usage for the system to be designed to manage. (5 marks)
- (b)
- Where practical, they are exposed to prevailing winds and not shaded from sunlight, or are placed where nearby plants can help evapotranspiration of the effluent.
 - They do not affect, or are not affected by and comply with requirements for setback distances from buildings, property boundaries, retaining walls, embankments, swimming pools, and so on.
 - Any above-ground irrigation system complies with the relevant regulatory authority's guidelines.
 - Below-ground installations can be identified on the surface.
 - They comply with performance requirements set by this Standard and the relevant regulatory authority for:
 - (i) clearance from ground water
 - (ii) coping with flooding; and
 - (iii) avoiding pollution of any watercourse, canal, dam, or water body. (5 marks)

(c) Sketch to include any FIVE (1 mark each)

- Sand fill.
- Top soil cover.
- Protective fabric.
- Pipe.
- Vent.

(5 marks)

Total 15 marks

ANSWER 9

Drawing to show:

- | | |
|---|-----------|
| Correct location of vent | (1 mark) |
| ORG included | (1 mark) |
| Correct locations of inspection points (drains) | (2 marks) |
| Inspection point at septic tank | (1 mark) |
| Fresh air inlet | (1 mark) |
| Distribution box OR effluent dosing system | (1 mark) |
| Effluent lines following contours of ground | (2 marks) |

Total 10 marks

ANSWER 10

- (a) Every employer must provide reasonable opportunities for their employees to participate effectively (in on-going processes) for improvement of health and safety in the employees' places of work. (1 mark)
- (b) This applies if 1 or more of the employees require the development of a system or an employer has 30 or more employees. (1 mark)
- (c)
- An Improvement Notice.
 - A Prohibition Notice.
 - An Infringement Notice.

(3 marks)

Total 5 marks

ANSWER 11

- (a) (i) To completely remove the hazard from the worksite. (1 mark)
(ii) To provide a barrier between workers and the hazard. (1 mark)
(iii) To wear PPE or use equipment that will reduce the likelihood of injury should an accident occur. (1 mark)
- (b) Trench collapse due to removal of ground water and fine soil particles.
Inhalation of exhaust fumes from pump. (2 marks)
- (c) Any TWO (1 mark each)
- Inhalation (breathing into the lungs).
 - Ingestion (swallowing).
 - Absorbed through the skin. (2 marks)
- (d) Any TWO (1 mark each)
- Dermatitis
 - Breathing difficulties
 - Light-headedness
 - Eye damage (2 marks)
- (e) • Gloves
• Glasses (1 mark)

Total 10 marks

SECTION B

1. B 30 minutes
2. E 24 hours
3. E 200
4. C 8
5. E 50 years
6. C 15 years
7. D 500
8. A A tank designed to hold stormwater until it can be discharged into the network utility operators system.
9. B A tank designed to hold stormwater for reuse as a water supply on the property.

Total 9 marks

