higher education & training

Department:
Higher Education and Training
REPUBLIC OF SOUTH AFRICA

MARKING GUIDELINE

NATIONAL CERTIFICATE

SPECIALISED ELECTRICAL INSTALLATION CODES

(Second paper)

21 November 2022

This marking guideline consists of 5 pages.

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QUESTION 1

1.1 Means at or about zero potential✓ and isolated from any live system.✓ (2)

1.2 Every user or lessor of an electric fence system shall have an electric fence system certificate✓ in the form of Annexure 1 in respect of such electric fence system,✓ provided that such certificate shall be transferable.✓ (3)

1.3 The registered person shall refuse to issue the certificate of compliance✓ provided that if such fault or defect in the opinion of the registered person constitutes an immediate danger to persons✓ in the case where electricity is already supplied,✓ he or she shall forthwith notify the user or lessor, as the case may be in writing.✓ (4)

1.4 He shall ensure that an electric fence system certificate is issued for that work. (1)

1.5 True (1)
[11]

QUESTION 2

2.1 A certificate with a unique number✓ obtainable from the chief inspector, or a person appointed by the chief inspector,✓ in the form of Annexure 1,✓ and is issued by a registered person✓ in respect of an electrical installation or part an electrical installation.✓

OR

A certificate of compliance issued under the Electrical Installation Regulations, 1992.✓ (6)

2.2 The person shall ensure that a valid certificate of compliance is issued for that work. (1)

2.3 He or she shall forthwith take steps to disconnect the supply✓ to the circuit in which the fault or defect was detected✓ and notify the chief inspector thereof.✓ (3)

2.4 No person shall connect or permit the connection of any completed or partially completed electrical installation✓ to the electricity supply unless it has been inspected and tested✓ by a registered person and a certificate of compliance for that electrical installation has been issued.✓ (3)
[13]

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QUESTION 3

3.1 Master Installation Electrician (MIE) (1)

3.2 Master Installation Electrician (MIE) (1)

3.3
- Electrical contractor,✓ or
- Any person in control of an installation electrician,✓ or a master installation electrician.✓ (3)

3.4 No person should commence installation work which requires a new supply, increase or modification of the electricity supply capacity✓ unless the supplier has been notified thereof in the form of an Annexure 4✓ notice of commencement of the electrical installation regulation.✓ (3)

3.5 Any person who undertakes to perform electrical installation work on behalf of any other person✓ but excluding an employee of such first-mentioned person.✓ (2)

[10]

QUESTION 4

4.1 They shall comply with the installation and certification requirements✓ for electrical installations in hazardous locations.✓ (2)

4.2
- Two-way radios or portable/mobile/cellular telephones or pagers
- Insulation resistance meters ("Meggers")
- Current-injection devices; and
- Flash lights (4)

4.3 They shall be continuity-bonded✓ with no less than two strands of 16 mm^2 copper or equivalent wire✓ using a suitable method for a permanent electrical connection.✓ (3)

4.4
- Vehicle dip hatches shall remain closed
- All the valves in the vehicle's product pipelines shall remain closed
- There shall be no open product pipe work
- There shall be no fuel leaks
- Loaded vehicles shall not be taken into a workshop (5)

[14]

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QUESTION 5

5.1 It is to assist the users of explosion-protected electrical equipment✓ in the installation, inspection and maintenance of electrical equipment✓ in explosive atmospheres underground in mines.✓ (3)

5.2 It is to provide guidance to manufacturers of explosion-protected equipment and machinery✓ on the design of such equipment.✓ (2)

5.3 It should be carried out with due reference to the mine-specific hazard identification✓ and risk assessment of equipment and its installation.✓ (2)

5.4 Extent to which measures are applied to an enclosure of electrical equipment✓ to provide for:

- the protection of persons against inadvertent contact with,✓or approach to, live parts✓and against contact with moving parts inside the enclosure,✓ and
- the protection of equipment inside the enclosure✓against the ingress of solid foreign bodies✓ and the harmful ingress of water and dust.✓ (7)

[14]

QUESTION 6

6.1 They shall only be recharged in a non-hazardous area,✓ unless this is covered by the certificate✓ and the manufacturer's instructions permit charging in a hazardous area.✓ (3)

6.2 Protection against corrosion of flameproof joints shall be maintained in accordance with the manufacturer’s documentation.✓ The use of gaskets is only permissible when specified in the manufacturer’s documentation.✓ (2)

6.3 6.3.1 True
6.3.2 True
(2 × 1) (2)

6.4 Only corrosion inhibiting grease, such as petroleum jelly or soap-thickened mineral oils, may be applied to joint surfaces before assembly.✓ The grease, if applied, shall be of a type that does not harden because of ageing,✓ does not contain an evaporating solvent,✓ and does not cause corrosion of the joint surfaces.✓ (4)

6.5 Care should be taken to ensure the retention of the non-setting characteristics✓ and to allow subsequent separation of the joint surfaces.✓ (2)

[13]

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QUESTION 7

7.1 False
7.2 True
7.3 True
7.4 True
7.5 False
7.6 True
7.7 False
7.8 False
7.9 False
7.10 True

(10 × 1) **[10]**

QUESTION 8

8.1 Ex 'm'; 'o' and 'q'. (1)

8.2 Where replacement bolts are used, they shall be of the same type,✓ diameter, pitch and length✓ and at least the same tensile strength as specified for the original equipment.✓ (3)

8.3
- The same rating
- The same or higher breaking capacity
- The same time/current characteristic
- The same type of construction
- The same physical size (5)

8.4 (a) only
(b) reclamation
(c) standard
(d) evidence
(e) certificate
(f) specifications (6)
[15]

TOTAL: 100

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