COSVR325
Inspect and test lightning protection systems

Overview

This standard is about

1 interpreting information
2 adopting safe and healthy working practices
3 selecting materials, components and equipment
4 preparing for inspecting, testing and reporting on the operational integrity of lightning protection systems

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Performance criteria

You must be able to:

P1 interpret the given information relating to the work and resources to confirm its relevance

P2 comply with the given, relevant legislation and official guidance to carry out your work and maintain safe and healthy work practices

P3 select the required quantity and quality of resources for the methods of work

P4 comply with organisational procedures to minimise the risk of damage to the work and surrounding area

P5 comply with the given contract information to carry out the work efficiently to the required specification

P6 complete the work within the allocated time, in accordance with the programme of work

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Knowledge and understanding

Performance Criteria 1

Interpretation of information

You need to know and understand:

K1 the organisational procedures developed to report and rectify inappropriate **information** and unsuitable **resources**, and how they are implemented

K2 the types of **information**, their source and how they are interpreted

K3 the organisational procedures to solve **problems** with the **information** and why it is important they are followed

Performance Criteria 2

Safe work practices

You need to know and understand:

K4 the level of understanding test engineers must have of **information** for relevant, current **legislation and official guidance** and how it is applied

K5 how **emergencies** should be responded to and who should respond

K6 the organisational **security procedures** for tools, equipment and personal belongings

K7 what the accident reporting procedures are and who is responsible for making the report

K8 why, when and how **health and safety control equipment** should be used

Performance Criteria 3

Selection of resources

You need to know and understand:

K9 the characteristics, quality, uses, sustainability, limitations and defects associated with the **resources** and how defects should be rectified

K10 how the **resources** should be used and how any **problems** associated with the **resources** are reported

K11 the organisational procedures to select **resources**, why they have been developed and how they are used

K12 the **hazards** associated with the **resources** and **methods of work** and how they are overcome

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	Performance Criteria 4
	Minimise the risk of damage
You need to know and understand:	K13 how to **protect work** from damage and the purpose of protection
	K14 why **disposal of waste** should be carried out safely and how it is achieved
	Performance Criteria 5
	Meet the contract specification
You need to know and understand:	K15 how **methods of work**, to meet the specification, are carried out and **problems** reported
	K16 how **maintenance** of tools and equipment is carried out
	Performance Criteria 6
	Allocated time
You need to know and understand:	K17 what the **programme** is for the work to be carried out in the estimated, allocated time and why deadlines should be kept

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Additional Information

Scope/range related to performance criteria

Performance Criteria 1

1 interpretation of drawings, specifications, schedules, method statements, risk assessments and manufacturers' information related to the work to be carried out

Performance Criteria 2

2 avoidance of risk by complying with the given information relating to the following

- 2.1 methods of work
- 2.2 safe use of health and safety control equipment
- 2.3 safe use of access equipment
- 2.4 safe use and storage of materials, tools and test equipment
- 2.5 specific risks to health

Performance Criteria 3

3 selection of resources associated with own work

- 3.1 materials, components and fixings/anchors
- 3.2 tools and equipment

Performance Criteria 4

4 protection of the work and its surrounding area from damage

5 minimise damage and maintain a clean work space

6 disposal of waste in accordance with current legislation

Performance Criteria 5

7 demonstration of work skills to inspect, test, measure, calibrate, calculate, record and report

8 use, check and maintain hand tools, test instruments, powered tools and ancillary equipment

9 inspect the components of lightning protection systems in the following ways to given working instructions

- 9.1 visual
- 9.2 detailed

Performance Criteria 6

10 completion of own work within the estimated, allocated time to meet the needs of other occupations and/or client

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Scope/range related to knowledge and understanding

Disposal of waste

1 environmental responsibilities, organisational procedures, manufacturers' information, statutory regulations and official guidance

Emergencies

2 test engineer's response to situations in accordance with organisational authorisation and personal skills when involved with

- 2.1 fires, spillages, injuries
- 2.2 emergencies relating to occupational activities

Hazards

3 those identified by risk assessment, method of work, manufacturers' technical information, statutory regulations and official guidance

Health and safety control equipment

4 identified by the principles of protection for occupational use, types and purpose of each type, work situations and general work environment

- 4.1 collective protective measures
- 4.2 personal protective equipment (PPE)
- 4.3 respiratory protective equipment (RPE)
- 4.4 local exhaust ventilation (LEV)

Information

5 lightning protection system layout drawings, specifications, schedules, method statements, risk assessments, manufacturers' information, earth records, regulations and official guidance associated with lightning conductor work

Legislation and official guidance

6 this relates to the operative's responsibilities regarding potential accidents and health hazards whilst working in the workplace, below ground level, in confined spaces, at height, with tools and equipment, with materials and substances, with movement/storage of materials and by manual handling and mechanical lifting

Maintenance

7 test engineer's care of hand tools, test instruments, power tools and ancillary equipment

Methods of work

8 application of knowledge for safe and healthy work practices, procedures and skills relating to the method/area of work and materials used to:

- 8.1 identify the lightning protection system (including surge/transient protection)
- 8.2 liaise with the person responsible for the system
- 8.3 confirm the means of access to carry out the work
- 8.4 survey and carry out visual inspection of the lightning protection system
- 8.5 identify the geology (nature of soil, special earthing arrangements)
- 8.6 identify type and position of earth electrodes
- 8.7 use test instruments and ancillary equipment
- 8.8 carry out tests for continuity, resistances, impedance
- 8.9 measure earth resistance using recognised test procedures
- 8.10 identify deterioration and damage
- 8.11 identify alterations, additions and repairs to the system
- 8.12 visually inspect fall protection equipment
- 8.13 ensure test instruments and measuring equipment is calibrated
- 8.14 use hand tools, power tools and ancillary equipment
- 8.15 work at height
- 8.16 use access equipment
- 8.17 complete and update documentation and log book including earth records and lightning protection system drawings
- 8.18 write reports

9 team work and communication

10 needs of other occupations associated with the inspection and testing of lightning protection systems

Problems

11 those arising from information, resources and methods of work

- 11.1 own authority to rectify
- 11.2 organisational reporting procedures

Programme

12 types of progress charts, timetables and estimated times

13 organisational procedures for reporting circumstances which will affect the work programme

Protect work

14 protect work against damage from general workplace activities, other occupations and adverse weather conditions

Resources

15 materials, components and equipment relating to types, quantity, quality, sizes and the sustainability of standard and/or specialist:

- 15.1 test instruments and equipment
- 15.2 measuring instruments and ancillary equipment
- 15.3 hand tools, power tools and ancillary equipment

16 methods of calculating quantity, length, area and wastage associated with the method/procedure to inspect and test lightning protection systems

Security procedures

17 site, workplace, company and test engineer

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Developed by	ConstructionSkills
Version number	1
Date approved	February 2012
Indicative review date	February 2017
Validity	Current
Status	Original
Originating organisation	ConstructionSkills
Original URN	COSVR325
Relevant occupations	Engineering Technicians
Suite	Accessing Operations and Rigging (Construction)
Key words	Lightning-conductor; Inspect; Installations; Air-terminations; Earth-terminations; Continuity; Resistances