

Overview

This standard is for those who inspect, test and commission Electric Vehicle Charging Point (EVCP) systems and equipment.

The person carrying out this work must be able to comply with the processes and procedures for initial verification and periodic inspection and testing of an EVCP system in accordance with the current versions of the appropriate industry standards and regulations, the specification, industry recognised working practices, the working environment and the natural environment.

They must also be able to comply with the processes and procedures for the commissioning and handing over of an EVCP system.

They must know, understand and apply the correct methods and procedures for the inspection and testing of EVCP systems and equipment, including the:

- identification and use of the correct test instruments
- completion of the relevant documentation
- recording of relevant data and information
- identification and consideration of the customer's need for EVCP systems and equipment configuration
- planning of the resources required to carry out the commissioning process

Performance criteria

You must be able to:

1. confirm a programme of work with the relevant others in accordance with organisational procedures
2. confirm before work starts that the work location and work area can be accessed safely and has been checked for the risk to other personnel on the site, and take appropriate action if a risk is present
3. determine and obtain the resources and other equipment, accessories and consumables required to undertake inspection, testing and commissioning of EVCP systems and equipment
4. confirm that the resources and other equipment, accessories and consumables are fit for purpose and have a current calibration certificate
5. comply with industry practices and organisational procedures to ensure the co-ordination of site services and the activities of other trades affected by inspection, testing and commissioning of EVCP systems and equipment
6. confirm the existing electrical supply is suitable for the EVCP system
7. identify the correct means of electrical isolation prior to commencing the inspection, testing and commissioning processes
8. complete safe isolation as and when required to ensure the safe inspection, testing and commissioning of electrical cables, conductors and/or wiring system and the associated equipment, accessories and components
9. conduct a visual inspection on the enclosures for cables, conductors and wiring systems to confirm they are located and secured correctly and are electrically and mechanically sound
10. conduct a visual inspection on the electrical cable, conductor and wiring systems to confirm they are located and secured correctly and electrically and mechanically sound
11. conduct a visual inspection on the equipment, accessories and components to confirm they are located and secured correctly and identified and/or labelled correctly
12. perform the appropriate tests that ensure safe and efficient operation of the EVCP system
13. perform tests in the correct sequence for initial verification testing that ensure safe and efficient operation of the EVCP system

14. perform appropriate tests for periodic inspection testing
15. confirm that conditions are suitable for commissioning to take place
16. carry out the commissioning process
17. record and assess information in accordance with organisational procedures
18. ensure that the results are recorded in the appropriate information systems and passed to the relevant others
19. ensure that the EVCP system and equipment is ready for hand over to the customer/client
20. identify and explain any variations
21. obtain customer/client acceptance of the EVCP system and equipment in accordance with organisational procedures
22. complete and safely store all relevant documentation
23. communicate information to relevant others at the appropriate time
24. resolve issues and problems within your area of responsibility and report those that cannot be resolved
25. implement organisational procedures for the safe transport and/or disposal of waste material, substances and liquids in accordance with suppliers' and manufacturers' instructions

Knowledge and understanding

You need to know and understand:

1. how to confirm a programme of work with the relevant others
2. the operation, applications, advantages and limitations of different EVCP systems
3. the appropriate industry standards and regulations relevant to inspecting, testing and commissioning EVCP systems and equipment
4. how to produce a risk assessment and method statement for the work to be carried out, including the identification and use of personal protective equipment, in accordance with the EVCP system design and organisational procedures
5. how to verify that job information and documentation is current and relevant, and that the plant, instruments, access equipment and tools are fit for purpose
6. the applications, advantages and limitations of types of personal protective equipment
7. the practices and organisational procedures to ensure the co-ordination of site services and the activities of other trades affected by **inspection, testing and commissioning of EVCP systems and equipment
8. how to interpret diagrams and drawings of the EVCP systems and equipment
9. how to access and interpret design and installation specifications
10. how to confirm the existing electrical supply is suitable for the EVCP system
11. the application process and role of DNO
12. regulations for Smart EV install/maintenance
13. how to determine and obtain the resources and other equipment, accessories and consumables required to undertake inspection, testing and commissioning of EVCP systems and equipment
14. how to confirm that the resources and other equipment, accessories and consumables are fit for purpose and have a current calibration certificate
15. the correct procedures for safe isolation
16. the methods and procedures for conducting a visual inspection on the enclosures for cables, conductors and wiring systems to confirm they are **located and secured correctly and are electrically and mechanically sound
17. the methods and procedures for conducting a visual inspection on the electrical cable, conductor and wiring systems to confirm they are located and secured correctly and are identified and/or labelled correctly

18. the methods and procedures for conducting a visual inspection on the equipment, accessories and components to confirm they are located and secured correctly and are identified and/or labelled correctly

19. the methods and processes to carry out correctly the initial verification and tests that ensure safe and efficient operation of the EVCP system

20. the correct methods and organisational procedures for implementing the commissioning process

21.

the organisational procedures for:

Scope/range

Working environments (internal and/or external)

- general (including):
 - commercial
 - domestic
 - educational
 - industrial
 - pre-1919 traditional/historic buildings
 - residential
- buildings open to the public (including):
 - art galleries
 - community centres
 - leisure and entertainment
 - medical and care facilities
 - museums
 - public houses
 - public services establishments
 - religious buildings
- special (including):
 - agricultural/horticultural
 - caravan parks
 - filling stations
 - highway power supplies

- marinas

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EVCP systems

- Mode 1
- Mode 2
- Mode 3
- Mode 4

Current carrying conductors

- Single-phase
- 3-phase

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Site

- an existing building or structure
- new build construction – building or structure

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Site services

- communications (wireless or cabled)
- drainage
- electricity
- gas
- oil
- water

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Plant

- access equipment

- lifting equipment
- mobile generators
- battery-powered tools

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Resources

- instruments
- labour
- materials and other consumables
- plant and equipment

Equipment, accessories and components

- arc fault detection devices (AFDDs)
- cable glands
- consumer units
- control panels/devices – electrical; electronic; electro-mechanical
- distribution boards and/or panels
- earthing protection
- isolators
- over-current protection (circuit breakers, fuses, RCBOs etc)
- over-voltage protection (SPDs)
- socket-outlets
- supports and fixings
- switches

Information

- contractual
- customer/client information – drawings; diagrams; user instructions; specifications

- functional – operational instructions
- statutory consents
- technical – design documentation; plans; installation specifications; equipment specifications; manufacturers' data; manufacturers' instructions; BIM data

Tests

- additional protection (RCD operation)
- continuity of CPC
- continuity of ring final circuits
- earth fault loop impedance
- functional testing
- insulation resistance
- phase rotation
- polarity
- prospective fault current

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Enclosures for cables, conductors and wiring systems

- basket and ladder systems
- cable tray
- ducting systems
- PVC and steel conduit (flexible and rigid)
- PVC and steel trunking

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Electrical cable, conductors and wiring systems

- armoured cables and cords (single wire, multicore, braided, flexible)
- data cables (fibre optic, copper)
- earth screened metallic cable

- mineral insulated cables
- pre-fabricated conductor, cable and wiring systems
- single and multicore thermoplastic and thermosetting insulated cables

The commissioning process

- configuration
- hand-over
- inspection and testing
- trials

Documentation

- electrical installation certificates
- electrical installation condition reports
- handover agreements
- industry checklists
- manufacturers' instructions
- minor electrical installation works certificates
- operational instructions
- schedules of circuit details
- schedules of inspection
- schedules of test results

Organisation procedures

- accident reporting
- commissioning
- communication with relevant others
- customer services
- emergencies

Inspect, test and commission EVCP systems and equipment

- implementing and monitoring health and safety requirements and issues
- implementing and monitoring issues relating to the natural environment
- information management
- project management
- risk assessment
- risk management

Relevant others

- client representatives
- customers/clients
- members of the public
- other contractors/trades
- site/contract manager
- work colleague

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