

## Commission electrical systems and equipment

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### Overview

This standard is for people who commission electrical systems (ac/dc) and equipment.

The person carrying out this work must be able to comply with the processes and procedures for the commissioning and handing over of an electrical system and equipment 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 know, understand and apply the correct methods and procedures for the commissioning and handing over the electrical system and equipment including the:

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

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### Performance criteria

#### You must be able to:

1. identify the customer/client's requirements
2. plan the commissioning process
3. determine and obtain the resources required to undertake the process
4. ensure methods and organisational procedures are implemented correctly
5. verify that the customer/client's requirements are met
6. resolve any problems identified
7. specify methods and organisational procedures which conform with customer/client requirements
8. confirm that conditions are suitable for commissioning to take place
9. complete the commissioning process
10. record and assess information in accordance with organisational procedures
11. ensure that the results are recorded in the appropriate information systems and passed to the relevant people
12. ensure that the electrical system and equipment is ready for hand over to the customer/client
13. identify and explain any variations
14. obtain customer/client acceptance of the electrical system and equipment in accordance with organisational procedures
15. ensure that all relevant documentation is correctly completed and recorded in the appropriate information systems in accordance with organisational procedures

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### Knowledge and understanding

#### You need to know and understand:

1. the operation, applications, advantages and limitations of different electrical systems
2. the requirements for the commissioning process
3. the resources required to undertake the commissioning process
4. methods, organisational procedures and systems to:
  - record and assess information
  - ensure that the results are recorded in the appropriate information systems and passed to the relevant people
5. the correct methods and organisational procedures for implementing the commissioning process
6. conditions that are suitable to implementation
7. how to resolve any problems identified
8. how to ensure that the electrical system and equipment is ready for hand over to the customer/client
9. methods for providing clear and accurate information to relevant people
10. the organisational procedures for:
  - notifying relevant people of any variations
  - obtaining customer/client acceptance of the electrical system and equipment
  - the completion of all relevant documentation
  - recording of information and/or data in the appropriate information systems

## Scope/range related to performance criteria

### Working environments (internal and/or external)

- domestic
- non-domestic
  - commercial
  - industrial
  - agricultural
  - horticultural
  - leisure and entertainment
  - residential medical and care facilities
  - public highways and parks
  - public services establishments
  - pre-1919 traditional/historic buildings

### Electrical system

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An electrical system (ac/dc), internal and/or external, in a building/structure that has an extra low voltage and/or low voltage single and/or multi-phase supply, circuits, equipment and components to provide:

- control
- communication
- heating
- lighting
- power

### Organisation procedures

- information management
- project management
- risk assessment
- risk management
- implementing and monitoring health and safety requirements and issues
- implementing and monitoring issues relating to the natural environment
- customer services
- accident reporting
- emergencies
- communication with relevant people

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### Resources

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

### Information

- technical – design documentation; plans; installation specifications; equipment specifications; manufacturers' data; manufacturers' instructions; BIM data
- functional – operational instructions
- customer/client information – drawings; diagrams; user instructions; specifications
- contractual
- statutory consents
- health and safety
- environmental considerations

### The commissioning process

- tests and testing
- trails
- configuration
- hand-over

### Equipment, accessories and components

- consumer units
- distribution boards and/or panels
- isolators
- circuit breakers
- fuses
- switches
- socket-outlets
- earthing protection
- luminaires
- motor control equipment
- control panels – alarms; emergency lighting; environmental control
- control devices – electrical; electronic; electro-mechanical
- solar photovoltaic panels – control equipment, components and accessories
- micro-wind turbine control equipment
- cable glands

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### Relevant people

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

### Documentation

- electrical installation certificates
- electrical installation condition reports
- minor electrical installation works certificates
- schedules of inspections
- schedules of test results
- operational instructions
- manufacturers' instructions
- handover agreements

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## Glossary

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