
Overview

This standard is for people who install and connect electrical cables, conductors, wiring systems, equipment, accessories and components for electrical systems (ac/dc).

The person carrying out this work must be able to comply with the procedures and methods for installing and connecting electrical cables, conductors, wiring systems, equipment, accessories and components 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 and understand the different types of cables, conductors, wiring systems, equipment, accessories and components, their limitations, applications and the techniques for their positioning, fitting, fixing and connection.

Performance criteria

- You must be able to:*
1. confirm the existing electrical supply is suitable for the electrical system
 2. produce a risk assessment and method statement for the work to be carried out, including the identification and use of personal protective equipment
 3. verify that job information and documentation is current and relevant and that the plant, instruments, access equipment and tools are fit for purpose
 4. select the associated equipment, accessories and components and confirm that they are:
 - of the right type and size
 - fit for purpose in accordance with the electrical system's design
 5. select electrical cables, conductors, wiring systems and confirm that they are:
 - of the right size and type
 - fit for purpose in accordance with the electrical system's design
 6. comply with industry practices and organisational procedures to ensure the co-ordination of site services and the activities of other trades
 7. identify the correct means of electrical isolation prior to commencing installation and connection work
 8. complete safe-isolation as and when required to ensure the safe installation and connection of electrical cables, conductors and wiring systems and their associated equipment, accessories and components
 9. install, fix and connect electrical cables, conductors and wiring systems and their associated equipment, accessories and components in accordance with the requirements of:
 - the electrical system's design
 - industry recognised methods
 - manufacturers' instructions
 10. inspect and test the connections and joints of the electrical cables, conductors and wiring systems and their associated equipment, accessories and components to ensure they are of proper construction in terms of conductance, insulation, mechanical strength and

protection, and ensure that they are identified correctly and clearly in accordance with the requirements of the electrical system

11. confirm with the relevant people:

- those necessary variations to the planned programme of work that may have the potential to introduce a hazard and/or impact on the installation work to be undertaken
- the correct actions to be taken to ensure that any variations to the planned programme of work will not introduce a hazard and have minimum impact on the installation to be undertaken

12. 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. the operation, applications, advantages and limitations of different electrical systems
2. the appropriate industry standards and regulations relevant to installing and connecting electrical cables, conductors, wiring systems, associated equipment, accessories and components
3. 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 electrical system's design
 - organisational procedures
4. 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
5. the applications, advantages and limitations of types of personal protective equipment
6. the applications, advantages and limitations of types of electrical cables, conductors, wiring systems, associated equipment, accessories and components
7. the industry recognised methods for determining the type, size and rating of electrical cables, conductors, wiring systems, associated equipment, accessories and components in relation to the electrical system's design
8. how to interpret diagrams and drawings for the electrical system to locate site services
9. how to interpret diagrams and drawings for the electrical system to identify the planned location of the electrical cables, conductors, wiring systems, associated equipment, accessories and components
10. the methods and techniques for installing, fixing and connecting electrical cables, conductors, wiring systems, associated equipment, accessories and components in accordance with:
 - the electrical system's design
 - manufacturers' instructions
11. the different types and methods of joining and connecting electrical cables, conductors, wiring systems

-
12. the applications, advantages and limitations of electrical cables, conductors, wiring systems
 13. the correct procedures for safe-isolation
 14. the organisational procedures for confirming with the relevant people the appropriate actions to be taken to ensure that any variations to the planned programme of work will not introduce a hazard and have minimum negative impact on the installation work to be undertaken
 15. the methods for the safe transport and/or disposal of waste material, substances and liquids in accordance with suppliers' and manufacturers' instructions

BSEET05

Install and connect electrical cables, conductors, wiring systems and equipment



Scope/range

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

An electrical system (ac and/or 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

Site

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

Site services

- electricity
- water
- gas
- oil
- drainage
- telecommunications
- data transmission either underground or overhead

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

Plant

- generators
- transformers for low voltage hand-tools
- lifting equipment
- access equipment

Electrical cable, conductors and wiring systems

- thermosetting insulated cables including flexes
- single and multicore thermoplastic and thermosetting insulated cables
- flat profile cable
- mineral insulated cables
- earthed metallic cable
- single wire armoured cables
- armoured/braided flexible cables and cords
- data cables
- pre-fabricated conductor, cable and wiring systems
- fibre optic cable
- fire resistant cable
- bus-bar trunking

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

Relevant people

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

BSEET05

Install and connect electrical cables, conductors, wiring systems and equipment



Glossary

BSEET05

Install and connect electrical cables, conductors, wiring systems and equipment



Developed by BSE Skills

Version Number 1

Date Approved March 2019

Indicative Review Date March 2024

Validity Current

Status Original

Originating Organisation SummitSkills

Original URN SUMET05

Relevant Occupations Electrical Trades

Suite Electrotechnical

Keywords Electrical systems; install; enclosures for electrical cable; conductor and wiring systems; standards; regulations; electrical; electrotechnical
