

SECTION 16000

ELECTRICAL - GENERAL PROVISIONS

PART 1 - GENERAL

1.01 SCOPE OF WORK

- A. This Specification covers the methods, materials and standards that shall be used for the general electrical installations of the Building Works

1.02 EXTENT OF WORK

- A. The extent of the electrical works includes the supply of materials and equipment, delivery to site, labor, installation, testing and commissioning of all electrical services as detailed or referred to in these specifications and/or shown on the drawings, including all other associated work such as supporting structure and ancillary works, attendance, etc., and the like.
- B. All equipment and/or accessories not specifically mentioned in the specifications or noted on the drawings, but which are obviously necessary for the proper and normal operations of the various systems shall be included.
- C. Without restricting the generality of the foregoing, the electrical installation of the project includes the supply and installation and testing of the equipment and materials detailed in the following specification sections:
 - 1. Equipment Electrical Connections
 - 2. Electrical Raceway Systems (conduits, trays, trunking).
 - 3. Wires and Cables.
 - 4. Wiring Devices.
 - 5. Electric Motors.
 - 6. Distribution Boards.
 - 7. Earthing and Earth Fault Protection and lighting system
 - 8. Lighting Control System
 - 9. Interior Lighting.
 - 10. Fire Alarm and Detection Systems.
 - 11. Telephone/Computer Data systems.
 - 12. Generators.
 - 13. Transformer
 - 14. CCTV system
 - 15. Central emergency lighting system
- D. The Contractor shall carry out a thorough inspection of all items of electrical equipment for damage prior to locating the equipment and proceeding with the electrical installation

- E. No variation shall be permitted without the written consent of the Engineer, who shall reserve the right to request the substitution of the correct materials and/or equipment.
- F. The Contractor shall be responsible for the full protection of all materials supplied to him, or handed to him by others, for incorporating in the works against damage or loss until the works are handed over to the Engineer.
- G. Unless specifically waived in each instance, testing procedures shall be performed in the presence of the Engineer.
- H. Materials and devices shall be inspected prior to installation by the Engineer as part of the work of this section before and after installation to ensure that they are of the quality and type specified herein, free of manufacturing defects and subsequent damage, and that they have been installed in the proper manner.
- I. In all aspects the quality of equipment and documentation shall be governed by BS 5750 Quality Systems.

1.03 CODES AND STANDARDS

- A. All materials and equipment used in electrical installations shall comply as a minimum with the latest relevant recommendation(s) or specification(s) of the GCC. In the absence of such recommendation(s) or specification(s) all such materials shall comply with the latest recommendation(s) or specification(s) of the International Electro-Technical Commission (IEC) and if these are not available to the latest relevant British Standard Specification(s) (BSS). If standards mentioned above contradict with the specification then the requirements of this specification shall apply.
- B. Electrical installation shall conform to the latest editions and is to be executed in accordance with the following codes and standards.
 - 1. EDD/R - Regulations of Electrical Installations.
 - 2. IEC 60079 - Electrical Apparatus for Explosive Gas Atmosphere.
 - 3. IEC 60364 - Electrical Installations of Buildings.
 - 4. IEC 60621 - Electrical Installations for outdoor site under heavy conditions.
 - 5. BS 7671 - Requirements for Electrical Installations.

The entire completed electrical installations shall be to the satisfaction of the Engineer.

1.05 SUBMITTALS

- A. The Contractor shall submit to the Engineer shop drawings and catalogs for equipment, materials
- B. Shop drawings shall be submitted for the following equipment and systems as applicable:
 - 1. Electrical Raceways.
 - 2. Cables and Wires.
 - 3. Distribution Boards.
 - 4. Lighting Fixtures and Lamps.
 - 5. Earthing and Earth Fault Protection & lightning system.
 - 6. Fire Alarm and Detection System.
 - 7. Telephone and Computer System.
 - 8. Generators.
 - 9. CCTV system
 - 10. MATV system
 - 11. Access Control System
 - 12. Public address system
 - 13. Flight information system
 - 14. Central emergency lighting system
- C. All dimensions shall be field verified at the job site and coordinated with the work of all other trades.
- D. The Shop Drawings shall show the position, dimensions, scheme, arrangement and fixing of all electrical equipment.
- E. The Drawings are not intended to show exact locations of the electrical equipment. The Contractor shall coordinate the electrical installation with other trades and the actual supplied equipment.
- F. Verify the exact locations and mounting heights of equipment, lighting fixtures, switches and receptacles prior to installation.
- G. Except where dimensions are shown, the locations of equipment, fixtures, outlets and similar devices shown on the Drawings are approximate only. Exact locations shall be determined by the Contractor and approved by the Engineer during construction.
- H. A sheet of transparent rigid plastic shall be used to completely cover this chart to prevent damage, all labels and notices shall be engraved in Arabic and English languages.

1.06 COORDINATION WITH OTHER WORKS

- A. The electrical installation work must be coordinated with the building work and work of other services. The drawings and specifications shall be carefully examined and information regarding building materials and equipment supplied by others obtained from the respective source to determine the extent, type and location of all wiring required. All holes and openings in slabs and walls which may be required for the passage of electrical conduits, trunking and cables must be determined and information regarding them passed on to building contractors so that they may be provided for at the time of pouring of concrete or construction of walls, breaking of concrete, cutting and patching of the structure shall be limited to a minimum and carried out only after securing the consent of the supervising Engineer.

1.07 SAMPLES

- A. Samples of wires, cables, conduits, boxes, switches, sockets, push-buttons and other items shall be submitted for approval before their acceptance for installation. .

1.08 COMMISSIONING

- A. The Contractor shall be responsible for satisfying himself as to the correctness of the electrical and mechanical connections to all work supplied and installed by him under the Contract before such work is put into operation.
- B. After the connection of power supply to the installations, the Contractor shall commission all sections of the electrical installations and demonstrate to the Engineer or his Representative that the entire electrical installation is in perfect working order. Where equipment of a specialized nature is involved, the Contractor shall, if necessary or requested by the Engineer seek and obtain at his own cost the services of specialist and/or commissioning engineers from the suppliers/manufacturers.

** END OF SECTION **