

SECTION - 5

EARTHING AND EARTH LEAKAGE PROTECTION

5.1 CONSUMER'S EARTHING SYSTEM

- 5.1.1 An earthing system should be of the highest integrity and of robust construction to ensure that it remains safe and will not endanger the health and safety of persons or their surroundings. Every consumer installation shall be provided with separate earthing system within the consumer's plot limits, installed and maintained by the consumer.
- 5.1.2 Each consumer's earthing system shall comprise of 'Earth electrode/s' main earth lead conductor connected between the 'Earth electrode/s' and the consumer's main earthing terminal/s or earth busbar, Earth continuity conductors (ECCs) shall be provided for every outgoing circuits from the main, sub-main & final distribution boards, equipotential bonding of all metal work & exposed conductive parts and enclosures, etc.
- 5.1.3 BS 7430 and IEC 60364 shall be referred for guidance.
- 5.1.4 Selection of the material for an earthing conductor should take into account the compatibility with the material of the earth electrode, and for a conductor installed in the grounds, the corrosive effect of the soil.
- 5.1.5 The consumer's earthing system shall be connected to DEWA earthing system (incoming supply cable armour/Earth continuity conductor, as approved by DEWA).
- 5.1.6 MV, LV, ELV Networks, Private Generators & Lightning Protections shall have separate earthing networks and shall not be connected with the main Electrical Earthing System
- 5.1.7 Earthing System in general must be of low electrical resistance, good corrosion resistance, able to dissipate high fault current repeatedly
- 5.1.8 An earthing system should be of highest integrity and of robust construction to ensure that it remains safe and will not endanger the health and safety of persons or their surroundings.
- 5.1.9 The Consumer main earthing connection shall be combined of TN-S system. The exposed-conductive-parts of all the electrical equipment of the installation shall be connected by means of circuit ECCs to the main earthing terminal. The earth fault loop impedance should be sufficiently low for the protective device (fuse, circuit breaker, RCD) to operate in the required time in event of fault to earth.
- 5.1.10 In all cases the Neutral and Earth Conductors shall be kept separate and not connected together at the main earth terminal or at any other point in the customers' installation.