

## 1.0 EARTHING & GROUNDING SYSTEM

### 1.1 GENERAL

An Integrated Grounding System is one that establishes a single point ground (or earthing) system that achieves an acceptably low resistance ground and provides for a low surge impedance path from any point in the system. This concept is often referred to as a Common Point Grounding (CPG) System.

### 1.2 EARTHING SYSTEM COMPONENTS

Grounding system shall be composed of the following components:

- Chemically activated grounding electrodes, commercially known as Chemically Enhanced Earth (CEE).
- Thin wall, soft copper tubing of at least one half-inch diameter, of at least ninety-nine (99%) percent pure copper.

### 1.3 EARTH INSTALLATION

1. CEE is an electro-chemical grounding electrode that automatically conditions the soil/rod interface. This is accomplished by absorbing local moisture to facilitate the electrolytic process. The installation must be accomplished in such a manner as to encourage this process.
2. To install the CCE, first bore a hole in the selected location to a diameter of not less than six (6) inches to accommodate the Earth Conductivity Enhancement Compound (ECEC) and a depth equal to the length of the selected rod plus one foot.
3. Remove all of the tapes covering the absorption and electrolyte holes.
4. Insert the electrode in the bored hole to its full length. It is preferable to leave the top exposed and protected by the special wall assembly, as illustrated. Pour 2 to 4 liters of water in the hole as it is being back filled.
5. Tamp the earth in place, leaving space to reach the connections and to install the well access assembly.
6. Make the connection to the CCE copper electrode.
7. Do not install in a place where watershed or downspout carry-off will flood the unit. Provide for carry-off when you install. The unit may be cemented or paved around, providing above instructions are followed and may be installed indoors.
8. Upon completion of installation of the earthing system, resistance-to-ground (earthing connection) shall be tested with a resistance tester. Where tests indicate resistance-to-ground is over 5 ohms, appropriate action shall be taken to reduce resistance to 5 ohms or less, by installing additional, properly spaced, ground electrode and treating soils in proximity to ground electrode. A retest shall be performed to demonstrate compliance.

### 1.4 TEST POINTS

These points are for testing of earthing systems. At these points hot work can be separated and can be tested for continuity and resistance. Test points should be made of brass and solidly fixed to wall at a height of 1.5 meter.

