

Sub: Standard procedure for providing earthing.

1. Earthing should be provided for different kind of applications as follows:

|                                |   |                                                                                                                                                                  |
|--------------------------------|---|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Transformer                    | - | Two earthing and one neutral                                                                                                                                     |
| Panel boards                   | - | One neutral must be provided for one electrical room.<br>One earthing must be provided for each panel board with a minimum of two earthings per electrical room. |
| Lifts                          | - | One earthing and one neutral per lift.                                                                                                                           |
| Generator                      | - | Two earthings and one neutral (optional) per generator.                                                                                                          |
| Feeder boxes in villas         | - | One earthing for each feeder box.                                                                                                                                |
| Generator feeder box in villas | - | Nil. Connect to main feeder box earthing.                                                                                                                        |
| Within villas                  | - | One earthing                                                                                                                                                     |

2. Each earthing and neutral should be of 6' x 2' x 2'. Use a 5' 6" GI pipe of 2" dia – B class connected to a 1' x 1' 3 mm thick copper plate at its bottom. After placing the GI pipe and copper plate fill the earth pit with alternate layers of earth, sand and bentonite powder. Use a large gampa of each material for each layer. Approximately each layer would be about 2". In the last 1' install a 2' CC ring with a 2" RCC cover. The RCC cover should have an opening of 9" x 12" covered with a CC gully trap cover. The filling of the pit should be 3" below the RCC cover. The GI pipe must be clearly visible.
3. The earth pit must be connected to the panel/generator/transformer, etc., with a 25 x 6 mm GI flat. Flat must be connected of GI pipe with a clamp placed 6" below the top of the pipe. However, in case of neutral for transformer use a 25 x 3mm copper flat. In case of lift neutral an 8 gauge (4 mm) copper wire can be used in place of a GI flat. The inter connects must be buried a foot under the ground to prevent theft.
4. In case of villas provide earthing on the rear side of the villa and bolt the GI strip to the nearest wall at a height of 6" above the finished floor level. From there connect with a 7/20 copper wire to the DB.
5. Pit must be watered periodically.
6. In case of neutral for transformer, use a CI pipe of 3" dia in place of the GI pipe and the copper plate.
7. Do not use salt, coal or any other procedure for making earth pits. Make as per drawing enclosed herein.
8. The earth pits and neutral pits should be spaced at a distance of 10' from each other.
9. Testing: the voltage between neutral and earth should be less than 4 volts. In case the voltage is more than 4 volts then the following steps should be taken.
  - a. Water the earth pit about 50 to 100 ltrs of water. Test after one day. If the voltage still remains high, then:
  - b. Add 25 kgs salt to 100 ltrs of water to produce brine. Pour the brine slowly into the earth pit. Wait for 2 days and check voltage. If the voltage still remains high, then:
  - c. Check all connections and if there is no error in connections then earth pit has to be remade at alternate location.
10. Relevant drawing is attached in circular 889(a) as figure no. 15