

Installation manual for Ground & Electrode Enhancement (GEE) slabs (House earthing)

Procedure



- (1) Dig a trench (70-75 cm deep and 50 cm wide)
- (2) Spread 7-8 inches of GEE backfill soil at the bottom of trench.
- (3) Soak/drench the GEE slabs in water and lay the GEE slabs
- (4) Connect the GEE slabs end to end and bolt securely (in addition, it is recommended to weld all joints permanently)
- (5) Cover all joints and bare conductors with cement mortar (after connecting securely the earthing conductor from Distribution Board).
- (6) Now cover GEE slabs with 7-8 inches of GEE backfill soil and tamp down gently with feet.
- (7) Complete the installation by backfilling the rest of the trench with the excavated soil.
- (8) Add water to expedite soil compaction (preferably the next day to avoid damage to the fresh cement mortar).

Note: The use of GEE backfill soil (2 bags for each GEE earthing slab) avoids the need to fetch loam soil from elsewhere and sieve at site. Also, it reduces the number of GEE slabs required where there are space constraints at site.

Notes: (i) The earthing resistance will continue to drop as the soil slowly compacts firmly around the GEE slabs (this may take a few weeks to reach its minimum but it is generally adequate in the very first week). (ii) The number of GEE slabs required per earthing installation will depend on the site soil conditions (i.e. sandy and/or rocky sites requires more GEE slabs) and also depends on the earthing application (i.e. sensitive electronics, computer network, etc have more stringent earthing specifications). *A minimum of 6-8 GEE slabs with 12-16 GEE backfill bags is seen to be adequate at most sites for one residential house earthing installation.* (iii) For lightning arrestors, it is recommended to have a separate earthing installation. (iv) Installing the GEE slabs in a straight line will provide the best results and it is better to be installed away from walls (so as that the GEE slabs have maximum soil on both sides).

