

# **SATYAM COMPOSITES PVT. LTD.**

Survey No.38, Nr, G.I.D.C Estate, Por - Ramangamdi Road,  
Vadodara - 391243, Gujarat, India.  
Manufacturers of: FRP/GRP Cable Trays, Gratings, Trefoil Clamps &  
Other FRP Pultruded Sections

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## **FRP POLE FOUNDATION GUIDELINE**

- 1.0 CONSTRUCTION OF FOUNDATION FOR FRP/GRP POLES.
  - 1.1 Erection of pole, concreting of poles and compaction of soil
  - 1.2 Drawing for the excavation of pits, Foundation of soil is enclosed which are to be adopted.
  - 1.3 Following arrangement shall be adopted for proper erection of poles wherever necessary and properly compacting of the soil around the base / foot of the poles, under this package.
  - 1.4 Excavation has to done as per the drawing to the required depth and size. After final excavation the pit should be dressed properly so that uneven portion and loose soil should be removed before PCC (M-15) of thickness 400 mm is laid.
  - 1.5 The verticality and leveling of pole/structure should be done by the help of plumbob or with theodolite and leveling instrument.
  - 1.6 Cement concrete (plain), stub setting grounding and back filling etc.
    - 1.6.A) Materials : All materials whether to be consumed in the work or used temporarily shall conform to relevant IS specification, unless stated otherwise, and shall be of the best approved quality.
    - 1.6.B) Cement : Cement to be used in the work under the contract shall generally conform to IS:269/455-1989. Cement bags shall be stored by the contractor in a water tight well ventilated store sheds on raised wooden platform (raised at least 150 mm above ground level) in such a manner as to prevent deterioration due to moisture or intrusion of foreign matter. Cements to be used within three months from the date of manufacture.
    - 1.6.C) Coarse Aggregates i.e. Stone chips or stone ballast. For M15 concrete, the aggregate will be in the ranges from 12mm to 20mm size.

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## **1.6.D) Pole erection**

1. After proper alignment, checking of verticality and leveling, the pole should be properly tied before placing of base concrete of required height. Again the verticality and leveling should be checked.
2. The RCC pedestal concrete (M-20) is to be done by providing good quality of shutters, so that there will no leakage of cement slurry during concreting. The cooping height should be 450 mm/750 mm above the existing ground level in urban area and in cultivated lands respectively. The top portion of the cooping should be made tapered.
3. All the bolted joints should be tightened properly by providing suitable size Bolt Nuts and spring washers. After completion of erection works all the bolts should be spot welded in order to avoid theft of members.
4. The back filling of locations should be done by using the excavated soil only in layers (each layer should not be more than 500 mm) by putting water and ramming by using wooden rammers. In no case stone of size more than 75mm used for back filling. Back-filling has to be done 75mm above ground level or as specified
5. Curing of concrete should be done for 28 day continuously. Curing should not be done within 24 Hours of concreting.
6. All the excess excavated materials and other unused materials from the concreting site should be disposed of to a suitable site by the contractor.
  - a) Mixer (Running time-2 min)
  - b) In case of hand mixing, 10% extra cement has to be provided. Hand mixing should be done on GI sheet platform only.
  - c) Poking rod may be used for compacting.
  - d) Use of vibrator for compacting is mandatory.
  - e) Clean water (free from saline and alkaline) should be used for concreting.
  - f) Aggregates (both coarse and fine) used should be free from foreign materials.

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- g) Shutters used should not be removed before 24hrs of casting.
- h) In case of black cotton soil borrowed earth (morum soil mixed with sand is preferable) may be used for back filling.
- i) Sufficient qty. of water should be sprinkled over backfilled earth and chimney kept wet by using wet gunny bags.

1.3.1 All the persons working on tower shall wear safety helmet, safety belt and safety shoes; similarly all the persons working on ground shall wear safety helmet and safety shoes.

1.3.2. If there is any LT/HT power line near the vicinity of FRP POLE, necessary shutdown of the power line shall be obtained in writing from the concerned Agency in order to avoid electrical hazards caused by accidental touching of stay/Guy ropes with power line.

1.3.3. Safety precaution Safety shall be given utmost importance during stringing.

The following need to be ensured.

1.3.4 Safe working conditions shall be provided at the stringing site.

1.3.5 The poles shall then be lifted to the pit with the help of wooden supports. The pole shall then be kept in the vertical position with the help of 25 mm (min.) manila ropes, which will act as the temporary anchor. The verticality of the pole shall be checked by spirit level in both longitudinal & transverse directions. The temporary anchor shall be removed only when poles set properly in the pit for foundation concreting & backfilling with proper compacting the soil. The backfilling should be done in layers (maximum 0.5 meters at a time with sprinkling of water and by using wooden hammer. No stone more than 75 mm should be used during back filling.