



**GUJARAT POWER  
RESEARCH & DEVELOPMENT CELL  
GUJARAT URJA VIKAS NIGAM LTD**

## **A PIPE-IN-CAGE(PiC) TYPE EARTHING SYSTEM**

The majority of the time, DISCOMs' electrical equipment uses traditional salt-charcoal earthing. Whereas, they have commenced utilizing maintenance-free or chemical-type earthing systems with either copper-bonded roads or GI roads in certain strategic sites.



A more cost-effective, superior conductive EEM has been developed by GPRD Cell as a result of many research and experiments that were conducted on various combinations of EEMs. To overcome various limitations of current earthing practises, various earthing designs were tested, and superior earthing designs, as well as cost-effective superior conductive EEM, were finalised, i.e. Maintenance Free, Eco-Friendly, Ready Capsule, Pipe-in-Cage (PiC) Type Earthing.

### **Benefits to the Power Distribution Companies**

- Being maintenance free design, no need to pour water at regular intervals
- The ohmic value remains fairly constant
- Mal-practice for the less digging of earth pits can be avoided
- Mal-practice for using less earth enhancement filling can be avoided
- No longer any corrosive or porosity effect from the conventional salt-charcoal earthing system
- Due to the pre-fabricated, ready-to-use design, on field installation time can be minimized
- Due to the pre-fabricated design, the wastage of EEM & on-field spillage can be eliminated
- One time factory quality check of the whole unit can ensure good quality i.e. quality check process can be improved

### **Features of Pipe-In-Cage (Pic) Type Earthing**

- The installation procedure is effective & convenient
- The Installation is less time-consuming & cheaper
- Transportation and storing of the electrode is convenient, cheaper and easy to do
- The quality of the EEM can be ensured as per various standard measures
- On-field inspection checklist can be minimized for the utility
- Perforated cage allowed automatic ingress of moisture from mother soil to make the material wet some

**Patent No - 535212**

Pipe-In-Cage (Pic) Type Earthings have been installed, commissioned and successfully monitored in all DISCOMs & found working satisfactorily



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