



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



# SPECIALLY DESIGNED MEDIUM VOLTAGE COVERED CONDUCTOR

## SD\_MVCC

There are issues like frequent line tripping, snapping of conductor, fast deterioration of the bare conductor, safety hazards, maintaining power reliability, etc. for the bare conductor overhead distribution network passing through dense plantations in a coastal area, There are other issues like environmental clearance in the forest areas and Right Of Way (RoW).

Gujarat Power Research & Development (GPRD) Cell has designed, developed & installed a Specially Designed Medium Voltage Covered Conductor to address the specific issues of power reliability and safety of PGVCL in the coastal belt having dense plantation of coconut trees. a unique concept to address the issues like reducing faults and interruptions caused by tree contacts and enhancing the reliability, Reducing animal faults, protecting the aluminum conductor from corrosion, reducing maintenance cost of tree trimming, greater compactness of distribution network.

The SD\_Medium Voltage Covered Conductor comprises of triple extrusion design on the base conductor as per the international standard EN 50397-1. The three layers of MVCC are a semi-conducting sheath to equalize the electric field stress, an unfilled insulating XLPE insulation without carbon black compound and finally, a hard abrasion-resistant outer protective layer of HDPE with UV stabilized, weather & track resistant. The SD\_MVCC is preferably used with its standard accessories as per international standard EN 50397-2 and installation as per standard EN 50397-3. The various accessories used are Insulation Piercing connectors (IPC), Tension Clamp, Helical Conductor Fitting, Arc Protection Devices (APD) and Earth parking devices.

## Features of SD\_MVCC & applications

- Protects the conductor from corrosion
- Enhanced electrical safety
- Longer life cycle compared to the bare conductor
- No requirement to change the network configuration
- Cheaper alternative to underground cables and ABC cables
- Addresses the power reliability issues
- No interruption while touching tree branches
- Ideal and safer solution for installations over river / lake/ forest / road slums / congested residential areas and in polluted areas
- Addresses RoW issues with reduced in between phase clearance.
- Useful to use in the forest area also
- Protects Animal and Bird safety from the live wires