GEMSCAB®
CABLES

THE RIGHT CONNECTION

COVERED CONDUCTOR

ACCREDITED
Management System
Certification
MSCB-119

MEMBER OF MULTILATERAL RECOGNITION ARRANGEMENT

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INTENSION TO IMPLEMENT MEDIUM VOLTAGE COVERED CONDUCTOR(MVCC)

Basic utility of re-designated Overhead Insulated conductor in place of Bare ACSR and Aerial Bunched cable is that to eliminate premature failure in course of time after installation.

High Tension Aerial Bunched cable is a combination of multiple cores with a messenger conductor for connecting earth and taking care of sag & hanging factor simultaneously. Manufactured in rope formation, these cables faces many challenges such as:

- Ultimate weight of cable being heavy Handling / installation is not easy with out taking special care to eliminate external abrasion / damage
- Loop formation and dragging on ground has to be avoided or it may leads to surface damaged followed by exposure of copper taped
- Chances of metallic copper screen layer discontinuity / break may take place

In rainy, season and moist environment copper tape might oxidise, leading to non-conductivity. Rope formation of cables generates inductive voltage, which as per Faraday Law, cannot be eliminated through copper tape (metallic screen). Water ingression in high rainfall/snowfall might lead to hair cracks on XLPE insulation in course of time. All of the above eventually leads to cable failure over a period of time.

The probable reasons against premature failure.has been taken care in “SINGLE CORE COVERED CONDUCTOR".

This concept is also well accepted internationally.

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CROSS SECTIONAL VIEWS OF COVERED CONDUCTOR

- **Conductor:** Bound stranded non-compacted AAA conductor (Aluminium Alloy / ACSR)
- **Longitudinal water tight layer**
- **Nonmetallic Screening by extruded Semiconducting compound**
- **Insulation made of Cross linked polyethylene**
- **Outer covering made of tracking resistance with ultra-violet property extruded layer of Cross linked polyethylene**

Note: Cable will be extruded in triple extrusion process followed by cross linking by CCV In presence of Dry High Pressure Nitrogen.

Cable Selection Chart

Sl. No.	Size of Conductor	11 KV	33 KV
1	22	YES	YES
2	34	YES	YES
3	55	YES	YES
4	80	YES	YES
5	99	YES	YES
6	148	YES	YES
7	232	YES	YES
8	300	YES	YES
9	400	YES	YES

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SPECIALITY OF
COVERED CONDUCTOR (MVCC)

- Reduced insulation thickness
- Sufficient gap between the cables, avoiding conductor clashing
- Inductive voltage effect is less
- Electrical properties in outer covering
- Suppresses electromagnetic field effect
- UV Resistant
- Reduces tree faults and minimizes on tree cutting costs
- Avoids Birdcages in forests etc., i.e. faults caused due to bird and animal interference with overhead lines
- Reduces electrical accidents at society crossings etc

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SPECIAL ATTRIBUTE

Generally, cables outer covering compound are having:

Mechanical, Physical, Environmental, Fire resistance, Heat resistance, Ozone resistance, Stress environmental cracking resistance (UV protection), Oil resistance.

Covered Conductor covering compound has Electrical property to suppress electrical stress during service although cross linked polyethylene having high dielectric strength, due to its overhead outdoor application. Absence of electrical properties will hamper expected life of cable life.

UTILITY OF ANTI TRACKING PROPERTIES

In case of HT AB cable, generation of electrical stress due to tracking is a common phenomenon. This leads to interruption in service within short span of around 5 to 6 months.

Covered Conductor is specially designed for eliminate tracking effect during service by added anti tracking, ultraviolet, captive voltage & arc resistance. These are achieved by adding appropriate additives added in drafting stage in outer covering compound. These properties take care about environmental hazards like corrosion, fungus, oil, humidity, pollution & atmospheric salt.

The above properties act as protective device for outside distribution in overhead transmission line.

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SALIENT FEATURE OF MVCC DESIGN

- Maintaining the heat decrepitating factor by giving sufficient Gap/Space among cables is mandatory to minimize derating factor during service
- Avoidance of frequent shut down during service jobs like: tree cutting, road construction
- At the time of high wind velocity and heavy stormy condition, chances of cable phase short circuit ruled out in momentary effect
- Pole cost is less as span between poles can be larger than previous installation
- Easier to handle and terminate
- Remarkable reduction in power interruptions
- User friendly and safe in any environmental condition
- PCC poles need to pit earth with the ground soil for getting optimum earth resistance, not required in covered conductor

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MODE OF INSTALLATION

Handling and installation of covered conductor is much easier and quicker. Existing bare conductor poles can be used as spacing between poles and existing fittings like Cross Arms can be used along with Arc device and Pin Insulators.

ADVANTAGES OF MVCC

- Cable failure rate is less during heavy wind and stormy conditions
- Surrounding interference like surge and lighting voltage can be drained through Arc device
- Tracking taken care by tracking compound
- Environmental Stress cracking taken care by Ultraviolet property
- Water penetration taken care by water blocking layer
- Water tree on insulation due to vaporized water ingress protected by water sealing properties

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GEMSCAB INDUSTRIES LIMITED

An ISO 9001, ISO 14001, OHSAS 18001 Certified Company

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