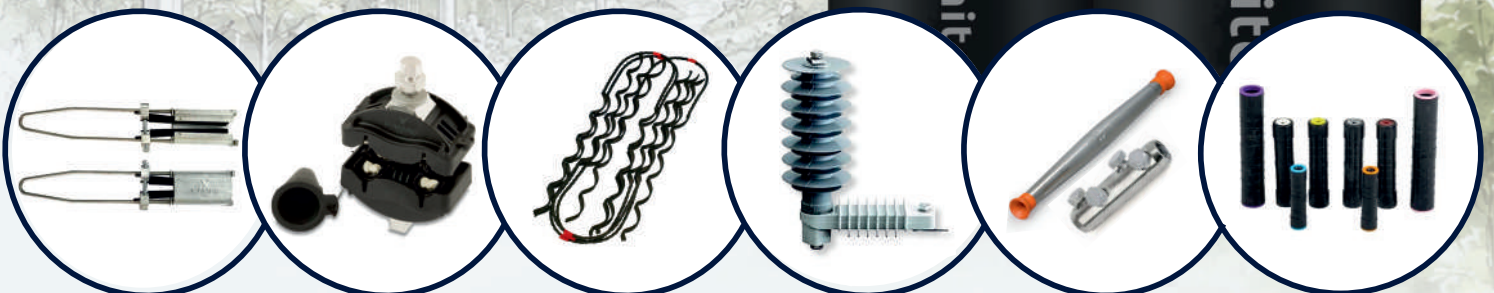




MEDIUM VOLTAGE COVERED CONDUCTOR & ACCESSORIES





Mr. Vikas Garg embarked on his entrepreneurial journey in 2006, began with the manufacturing of house wiring cables. With an unwavering commitment to quality, competitive pricing, and timely deliveries, he quickly gained the trust of buyers, leading to a significant increase in demand for the company's products. In 2006, under Mr. Garg's visionary leadership, the company established its factory at SIDCUL Haridwar.

By 2009, the product range had expanded to include LT PVC and XLPE cables, further solidifying the company's position in the market. In 2012, a new plant was set up to produce Aerial Bunched Cables, showcasing Mr. Garg's foresight in diversifying the product line.

The company's evolution continued in 2014, when it was incorporated as Asian Galaxy Pvt Ltd. By 2017, another factory was added to manufacture HT cables up to 11kV, demonstrating Mr. Garg's relentless pursuit of growth and innovation.

April 2021 marked a significant milestone with the launch of the company's IPO. This achievement underscores Mr. Garg's dedication to sustainable progress and his strategic acumen.

Under his able leadership, V-MARC India Ltd. is now ranked amongst the top companies and is one of the fastest-growing companies in India. Mr. Vikas Garg has demonstrated a deep understanding of the industry, continually aligning the company's goals with the broader vision of enhancing consumer experience. His leadership has been instrumental in driving the company's success and positioning it as a leader in the field. Mr. Garg's ongoing commitment to innovation and quality ensures that V-MARC India Ltd. continues to thrive and expand, meeting the evolving needs of its customers.





Who We Are

Founded in 2006, V-MARC India has established itself as a trusted leader in wire and cable manufacturing. We specialize in producing a wide range of products, including LT/HT Power Cables, Medium Voltage Covered Conductors (MVCC), Aerial Bunched Cables, and various Domestic and Industrial Wires and Cables. At V-MARC India innovation and customer satisfaction form the cornerstone of our vision and mission. We are committed to continuous improvement and have recently expanded our manufacturing facilities with cutting-edge technology.

Introduction

Medium Voltage Covered Conductors (MVCC) are advanced overhead power distribution conductors specifically designed for medium voltage electrical networks operating between 11 kV and 33 kV. These conductors have emerged as a reliable and cost-effective solution for utilities seeking to improve the safety, reliability, and efficiency of their power distribution systems while reducing maintenance requirements and network interruptions.

A Medium Voltage Covered Conductor consists of a metallic conductor, typically aluminium or aluminium alloy, surrounded by a protective covering made of insulating material such as Cross-Linked Polyethylene (XLPE). This protective covering acts as a barrier against accidental contact with external objects, adjacent conductors, vegetation, and grounded structures. Although the covering is not intended to provide full insulation for continuous direct contact it significantly reduces the possibility of electrical faults & outages caused by transient contacts.

As electrical distribution networks continue to expand into densely populated urban areas, forest regions, industrial zones, and environmentally sensitive locations, the demand for safer and more reliable overhead distribution systems has increased substantially. MVCC technology addresses these challenges by providing enhanced protection against environmental influences while maintaining the economic advantages of over headline construction.

Our Commitment

V-MARC manufactures high-quality wires and cables, including single and multi-core with copper/aluminium conductors, XLPE/PVC insulation flat, coaxial, LAN, LT power/control, medium voltage, HT, and specialty cables. Our products meet standards like FR, HRFR, FRLS, and HFFR to cater to client needs.

Trusted in India V-MARC XLPE/PVC cables are preferred in power plants distribution systems, heavy industries, and utilities. Committed to environmental, health, and safety regulations, we focus on quality, customer satisfaction, and promoting environmental protection, waste minimization, and resource conservation.

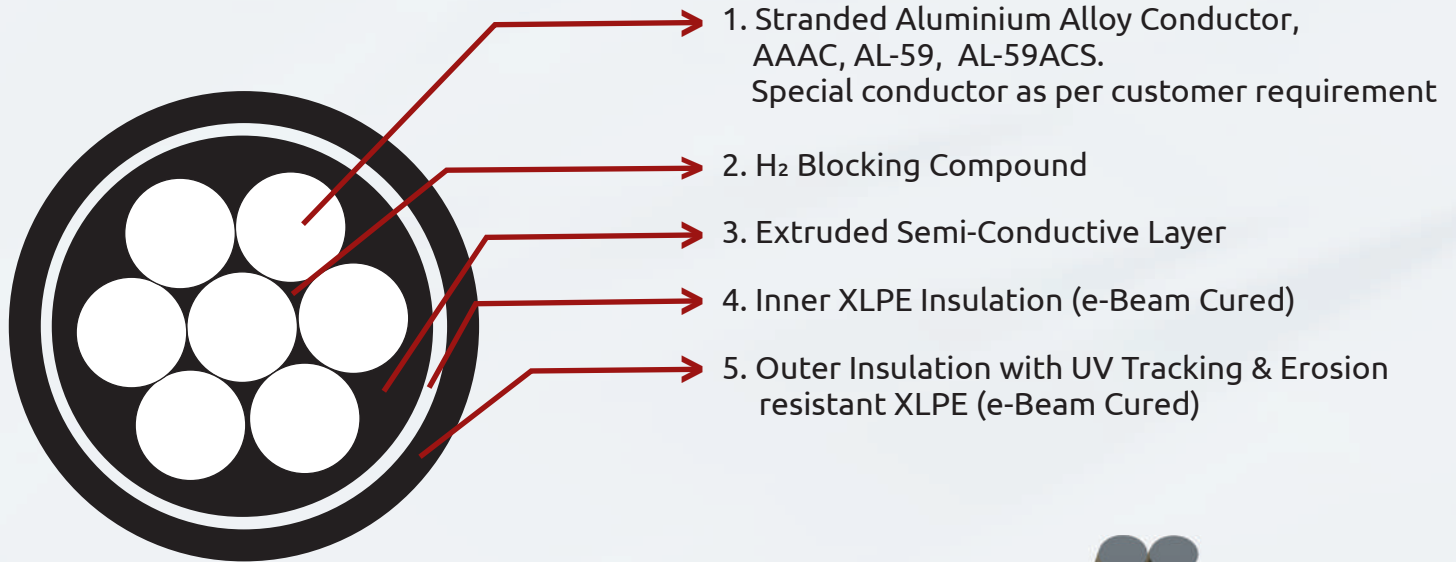


Our Clients



Construction and Design

Medium Voltage Covered Conductors are manufactured using high-quality aluminium alloy conductors that provide excellent electrical conductivity and mechanical strength. The conductor is covered with a specially formulated XLPE layer designed to withstand electrical, thermal, and environmental stresses encountered during service life.



The conductor covering offers

- Excellent dielectric properties
- High resistance to ultraviolet (UV) radiation
- Superior weather resistance
- Protection against moisture ingress
- Resistance to chemical contaminants
- High mechanical durability
- Long-term thermal stability



The design of MVCC is carefully optimized to ensure reliable performance under varying operating conditions. Factors such as conductor size, voltage rating, environmental conditions, installation requirements, and utility specifications are considered during the design and manufacturing process.

Working Principle

The primary function of the XLPE covering is to provide protection against accidental contact situations that may occur in overhead distribution networks. In conventional bare conductor systems, contact between conductors, tree branches, birds, or other grounded objects can result in faults, flashovers, and power interruptions.

In contrast, MVCC systems significantly reduce the likelihood of such incidents by providing a protective covering around the conductor. This covering helps prevent temporary contacts from developing into permanent faults, thereby improving network reliability and reducing service interruptions.

The covered conductor concept has been successfully implemented worldwide and has demonstrated exceptional performance in challenging operating environments where traditional bare conductors may experience frequent disturbances

Key Features

Enhanced Safety

MVCC provides an additional layer of protection that minimizes the risk of accidental electrical contact. This feature is particularly valuable in populated areas, near buildings, and in locations where human or animal interaction with power lines may occur.

Improved Reliability

The protective covering significantly reduces faults caused by vegetation, wildlife, wind-induced conductor movement, and environmental contamination. This leads to fewer outages and improved continuity of power supply.

Excellent Environmental Resistance

The XLPE covering offers outstanding resistance to:

- Sunlight and UV radiation
- Rain and humidity
- Salt-laden coastal environments
- Industrial pollution
- Dust and airborne contaminants
- Temperature variations



Reduced Maintenance Requirements

Because MVCC systems experience fewer faults due to external influences, utilities can reduce vegetation management activities, emergency repairs, and maintenance expenditures.

Superior Mechanical Performance

The conductor covering provides additional protection against mechanical damage during installation and operation, contributing to longer service life and improved system durability.

Cost-Effective Solution

Compared to underground cable systems, MVCC offers many of the reliability benefits while maintaining the lower installation and maintenance costs associated with overhead distribution networks.

Advantages of MVCC

Reduction in Fault Incidents

One of the most significant advantages of MVCC is the reduction in faults caused by tree branches, bird contacts, and temporary conductor clashes. This results in improved network availability and customer satisfaction.

Lower AT & C Losses

By reducing outages and improving system performance, MVCC contributes to the reduction of Aggregate Technical and Commercial (AT & C) losses and enhances overall network efficiency.

Better Performance in Vegetation Areas

MVCC is particularly suitable for regions with dense vegetation where maintaining safe clearances for bare conductors can be difficult and costly.

Enhanced Public Safety

The protective covering minimizes the possibility of accidental contact, thereby improving safety for the public, maintenance personnel, and wildlife.

Increased System Availability

Fewer faults and interruptions result in improved network uptime and greater reliability of electrical service.

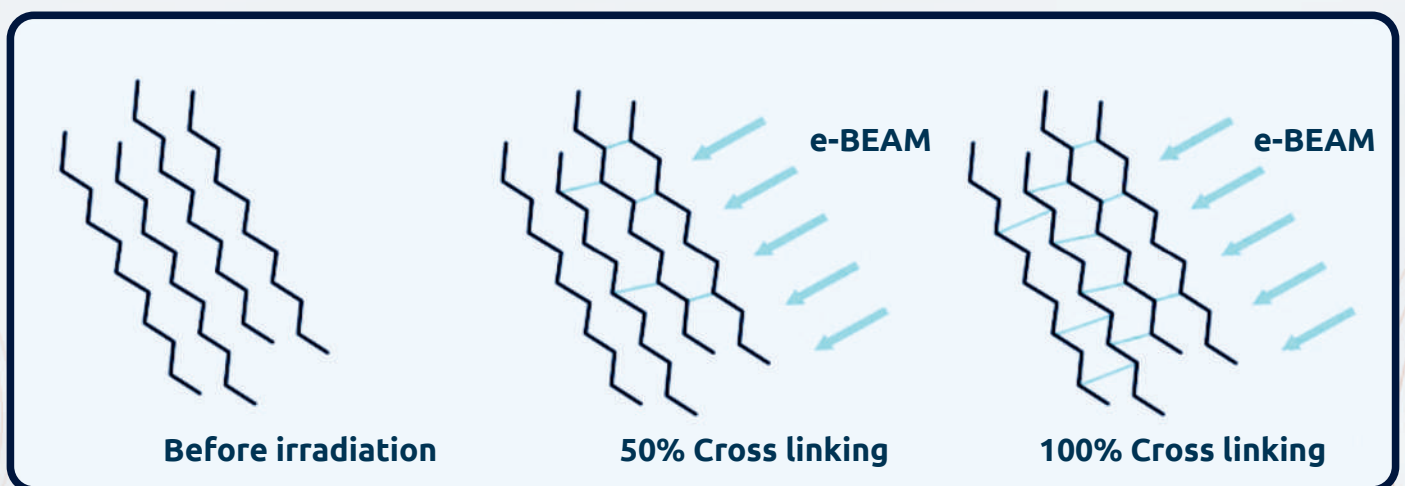
Extended Asset Life

The covering protects the conductor from environmental degradation helping extend the service life of the distribution infrastructure.



Advantage of e-Beam Cross Linking Over Chemical Curing

S.No.	Parameters	Chemical Curing	e-Beam Cross Linking
1	Cross-linking bond	C-S × -C or C-O × -C	C-C
2	Maximum operating temperature	90°C	125°C
3	Estimated life of cable	20–25 years	40 years
4	Maximum current carrying capacity (for a cable of size 99 sq. mm)	254 amps	330 amps
5	Effect on high overload current	Burned	Not burned
6	Cold bend test	-15°C	-25°C
7	Blooming effect 1	Chances to bloom to outer layer leading to surface deterioration	No effect
8	Polymer degradation during cross-linking	Cross-linking occurs at high temperature	eB cross-linking occurs at room temperature
9	Oxidative degradation	Yes	No



Conventional cross-linking employs thermally induced chemical cross-linking process which has drawbacks such as high temperatures that can degrade polymer lifespan.

Features of MVCC e-Beam

- The electron beam cross linked cables enhances mechanical, electrical, thermal, chemical and weathering properties and enhances life of product
- Improve temperature withstand capability which leads to an addition current capacity upto 30%.
- High current carrying capacity is more than 30% in comparison to the traditional.
- The e-beam cross-linking technology not only increases life and the current carrying capacity, but also prevents fires due to overload short circuits and thus saves precious lives and property.
- High insulation resistance at elevated temperature.
- Resistance to corona effect.
- Low direct losses which reduce current leakage.

Benefits of e-Beam Processing

- e-Beam cross-linking protects wire & cable insulation from high temperatures during short-circuits.
- It improves tensile strength, abrasion, thermal, flame-propagation, deformation, & cut through resistance.
- The process increases shear and compressive strength.
- e-Beam curing is eco-friendly, causing zero environmental pollution.
- EBXL cables are poised to replace traditional cables in key applications.
- Using electron-beam accelerators, insulation materials can be cross-linked within seconds.
- Homogeneous irradiation ensures uniform cross-linking of product.



Applications

Medium Voltage Covered Conductors are widely used in various power distribution applications including:

Urban Distribution Networks

It is ideal for densely populated cities where space constraints & safety considerations are critical.

Rural Electrification

The technology provides reliable power distribution in rural and remote areas while minimizing maintenance requirements.

Forest and Vegetation-Prone Areas

Covered conductors are extensively used in regions where trees and vegetation present a constant risk to overhead power lines.

Coastal Areas

The excellent resistance of XLPE to moisture and salt contamination makes MVCC suitable for coastal installations.

Industrial Zones

Industries requiring reliable power supply benefit from the improved performance and reduced outage frequency associated with MVCC systems.

Environmentally Sensitive Locations

MVCC supports the development of power infrastructure in environmentally protected areas where minimizing vegetation clearance is desirable.

Compliance with International Standards

Medium Voltage Covered Conductors are manufactured in accordance with recognized national & international standards, ensuring consistent quality, safety, and performance. Applicable standards include:

- IEC 61089
- IS 398 (Part-II)
- EN 50182
- EN 50397-1:2006
- IS 398

Compliance with these standards ensures that the conductors meet stringent requirements related to electrical performance, mechanical strength, dimensional accuracy, and environmental durability.



Current Carrying Capacity of Medium Voltage Covered Conductor

Stranded circular non compacted A.A.A.C (AL-59 and AL-59 ACS) Longitudinal water tight conductor, Conductor screened with extruded semiconducting layer, Inner covering by natural colour XLPE (Dry Nitrogen cure & Nitrogen Cool system) followed by outer covering with black XLPE (UV resistance, anti-tracking & Erosion Resistant) covered conductor as per BS-EN-50397-1:2020, SS-4240813 & SS- rated voltage 11kV & 33kV Grade.

11 kV MVCC

Size sqmm	Current carrying Capacity (Amp) At 40°C with continuous conductor temperature 90° C	
	AAAC-AL-59	AAAC-AL-59(ACS)
31	160	176
62	246	273
70	260	289
78	275	306
99	326	361
100	330	366
105	339	378
120	368	418
160	435	496
232	546	619
241	560	636

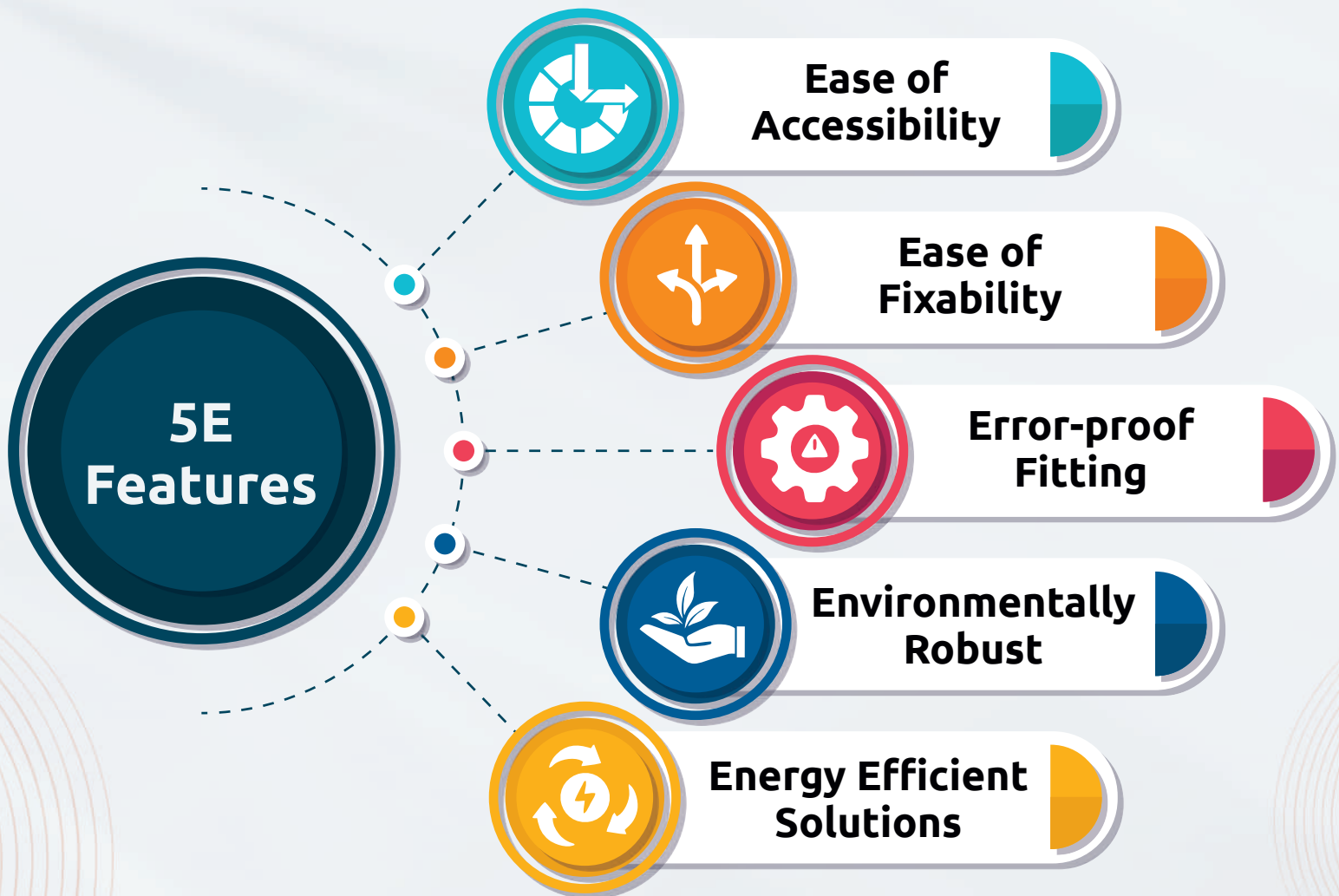
33 kV MVCC

Size sqmm	Current carrying Capacity (Amp) At 40°C with continuous conductor temperature 90° C	
	AAAC-AL-59	AAAC-AL-59(ACS)
160	427	485
232	537	610
241	551	627

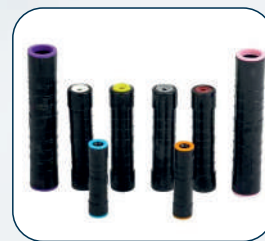
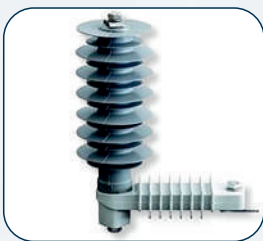
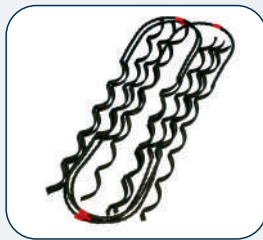
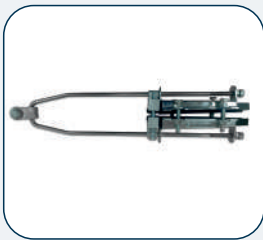
5E Features

Of

MVCC Accessories



Medium Voltage Covered Conductor Accessories



S.No.	Description	33Kv	11Kv
1	Tension /Dead End Clamp	✓	✓
2	Cable Tie for Pin Insulator	✓	✓
3	IPC for Cover to Cover	✓	✓
4	IPC for Cover to Bare	✓	✓
5	IPC for Bare to Bare	✓	✓
6	Mid Span Jointing Kit Ferrule	✓	✓
7	IPC for Al bail for Earthing	✓	✓
8	Lightning /Surge Arrester	✓	✓
9	Disc Insulator Polymer	✓	✓
10	Pin Insulator Polymer	✓	✓
11	Suspension Clamp	✓	✓

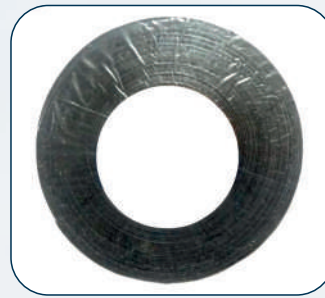
Heat Shrink High Voltage Tape



**Heat Shrink
Cable End Cap**



**Heat Shrink
High Voltage Tape**



**Heat Shrink
High Voltage Tape**



Rubber Tape

MVCC Lugs



Copper Lug



Copper Lug



Aluminium Lug



**Copper & Aluminium
Bi-Metallic Lug**



**Copper & Aluminium
Bi-Metallic Lugs**

Insulated Piercing Connector



**Double Bolt
IPC**



**Double Bolt
IPC**



**Double Bolt
IPC**



**Single Bolt
IPC**



**Double Bolt
IPC With Alm Bail**



**Single Bolt
IPC With Alm Bail**



**Single Bolt
IPC**

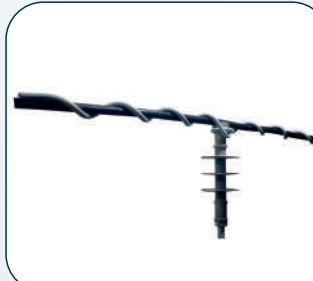


**Single Bolt
IPC**

MVCC Surge Arrester



Surge Arrester



Polymer Cable Tie



Helical Tie

MVCC Tie

MVCC Insulator



**Composite line
Post Insulator**



**Composite line
Post Insulator**

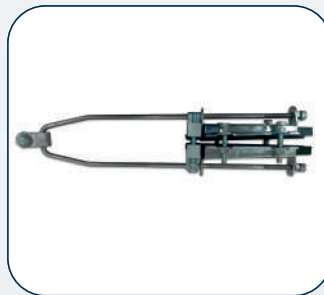


**Composite
Tension Insulator**

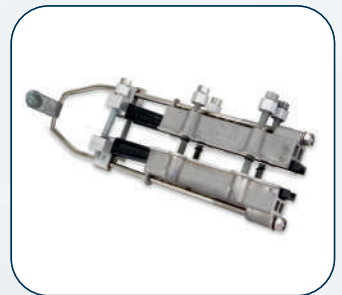
MVCC Tension Clamp



**Bracket Type
Tension Clamp
(Dead End)**



**Bracket Type
Tension Clamp
(Dead End)**



**Bracket Type
Tension Clamp
(Dead End)**



**Bracket Type
Tension Clamp
(Dead End)**



**Wedge Bracket
Type Tension
Clamp (Dead End)**



**Wedge Type
Tension Clamp
(Dead End)**

Anchoring Suspension Clamp



**Anchoring
Suspension Clamp**



**Anchoring
Suspension Clamp**



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Suspension Clamp**



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**Anchoring
Suspension Clamp**



**Anchoring
Suspension Clamp**

Mid Span Joint Kit



Mid Span Joint Kit



Mid Span Joint Kit



Mid Span Joint Kit

Benefits to Utilities

Utilities adopting MVCC technology can realize numerous operational and economic benefits including:

- Improved network reliability
- Reduced maintenance costs
- Lower outage frequency
- Enhanced customer satisfaction
- Improved public safety
- Reduced vegetation management expenses
- Better system performance under adverse weather conditions
- Increased operational efficiency
- Longer asset life
- Lower life cycle costs



Conclusion

Medium Voltage Covered Conductors represent a modern and highly effective solution for overhead power distribution systems operating between 6.6 kV and 33 kV. By combining the economic advantages of overhead lines with enhanced protection & reliability, MVCC technology significantly improves the performance, safety, and efficiency of electrical distribution networks.

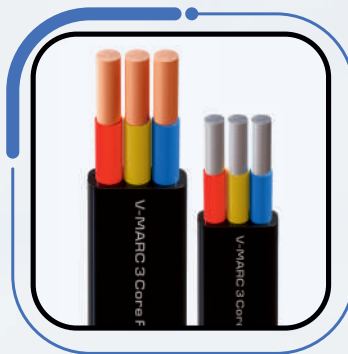
The use of high-quality XLPE covering, advanced manufacturing techniques, and compliance with international standards ensures dependable operation under diverse environmental conditions. As utilities continue to seek reliable, safe, and cost-effective methods of power distribution, Medium Voltage Covered Conductors remain a preferred choice for building resilient and sustainable electrical infrastructure.



Our Product Range



Building Wire



Flexi-Tuf Submersible Cable



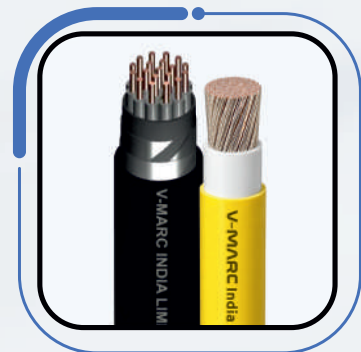
HT/LT Cables



Solar Cables



Data Center Cables



Railway Cables



HTLS Conductor



MVCC & Accessories



Light Duty Cables



Fan



Switchgears



Switches

Our Presence



25 States & UTs
850+ Employees
20+ Years of Operation

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