

SOLUTIONS FOR MODERN INFRASTRUCTURE

Discover Cutting-Edge Electrical Safety Solutions for Indian Infrastructure



















INTRODUCTION



JMV LPS Ltd., established in 2008, is a leading provider of optimized Lightning Protection and Earthing Solutions. Renowned for our expertise in safeguarding critical infrastructure, we specialize in tailored solutions that ensure unparalleled safety and reliability across diverse industries.

Key Strengths



Complimentary Software Consultations Leveraging CDEGS and ETAP, our consultations optimize lightning protection and earthing systems for maximum efficiency and performance.



Custom and Validated Design Solutions
From concept to execution, our solutions adhere
to rigorous national and international standards,
ensuring customized manufacturing and superior
quality.



24/7 Technical and Design SupportOur dedicated team offers round-the-clock technical assistance, ensuring operational reliability and peace of mind.

At JMV LPS Ltd., innovation drives our commitment to delivering cutting-edge solutions that protect your investments against natural uncertainties.

Clientele























































and many more......







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EARTHING SOLUTION

IEEE 80-2013. IS 3043:2018. NBC 2016. IEEE 81-2012. UL 467:2013.IS 62561:2017

Earthing, or grounding, is an essential aspect of electrical safety and system performance. JMV LPS Ltd. offers advanced earthing solutions that confirm to the highest industry standards, ensuring the safety and reliability of your electrical systems.



Our Offerings

Jmv offers a comprehensive solution for lightning protection that includes,

1. Soil Resistivity Testing

- 2. Designing Using CDEGS, ETAP Software,
- 3. Product Supplies and Supervision/Installation
- 4. Approval and Testing



Soil Resistivity Testing

Accurate soil resistivity testing is critical for designing an effective earthing system. We perform soil resistivity testing using the Wenner four-pin method in accordance with IS 3043:2018 and IEEE 80:2013 standards. This method helps determine the soil's resistivity, which is crucial for creating a reliable grounding system.



Designing Using CDEGS, ETAP Software, and Excel

Our expert team utilizes advanced software tools like CDEGS (Current Distribution, Electromagnetic Fields, Grounding, and Soil Structure Analysis), ETAP (Electrical Transient and Analysis Program), and Excel for designing earthing systems. These tools enable us to create customized and validated designs that comply with both national and international standards, ensuring optimum safety and performance.



Product Supplies and Supervision/Installation

We supply a wide range of high-quality components and materials required for earthing systems. Our products are designed to meet international standards, ensuring durability and reliability. Additionally, we provide expert supervision and installation services to ensure the correct implementation of earthing systems, adhering to design specifications and relevant standards.



Approval and Testing

Comprehensive testing and approval services are conducted to verify the effectiveness and compliance of the installed earthing systems. Our rigorous testing procedures, in accordance with IS 62561:2017 standards, ensure that the earthing systems meet all specified requirements. This includes detailed inspections and certifications, providing confidence in the safety and reliability of your earthing system.

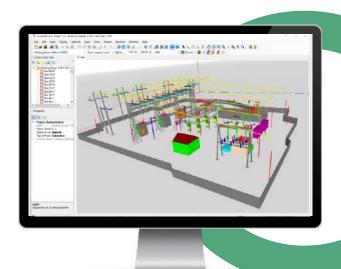


CDEGS SOFTWARE

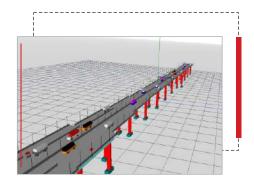
CURRENT DISTRIBUTION, ELECTROMAGNETIC INTERFERENCE, GROUNDING AND SOIL STRUCTURE ANALYSIS

CDEGS is an advance software which makes the designing and validation of design possible and much easier for us. JMV, being a one-stop solution provider, offers you its services of designing with the help of CDEGS only so that you can ensure that you have got the most practical and cost effective solution for your project.

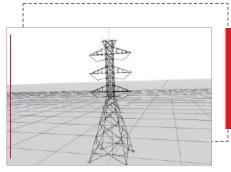
CDEGS is used for Electrical Earthing Design for Substations TSS, etc. LPS Designing and S&T Earthing for Crossing Stations/ Junction Station Building.



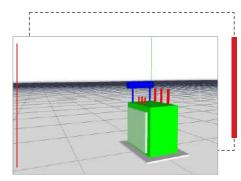
Project design by CDEGS



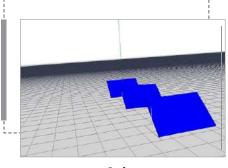
Bridges



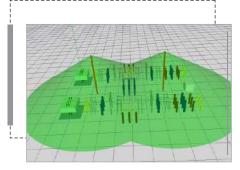
Tower



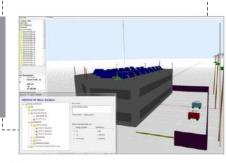
Transformer



Solar



Substation



Building

Features

- Capable for 3D Simulation of Buildings
- Soil Resistivity Analysis & Soil Structure Interpretation
- Potential, Touch Potential & Ground Potential Rise
- Design Validation as per Real Time Simulation
- Graphical Representation for Step
- Optimized Design



EARTH RODS

IEEE80, NBC 2016, IS 3043, IEC 62561-2

JMV offers earth rods in pure copper and copper bonded steel materials.

Copper Bonded Steel Rods are most appreciable and highly preferable product known for its ultimate performance with significance of no hidden factor. These low carbon, molecularly bonded mild steel rods are manufactured, inheriting 99.9% pure electrolytic copper coating of minimum 250 microns.

These copper/ copper bonded rods are tested by CPRI at various fault currents and also tested by NABL accredited labs as per IEC-62561.

JMV manufactures UL listed

Copper bonded rods of sizes 12.8mm, 14 mm, 17mm, 19mm, 21mm, 23mm, 24mm, 25mm, 32mm, 38mm diameter.

Copper rod of sizes 13mm, 15mm, 20mm, 22mm, 24mm, 25mm diameter. Length: 1.2m, 1.8m, 2m, 2.4m, 3m, 3.5m, 4m, 6m.

*Higher sizes are available on request.

Feature

High Conductivity: The outer copper layer, with **99.9% purity**, ensures excellent electrical conductivity, facilitating efficient dissipation of fault currents and lightning strikes.

Corrosion Resistance: The molecular bond between the steel core and the copper coating provides outstanding corrosion resistance, enhancing the rod's lifespan and reliability even in harsh environmental conditions.

Mechanical Strength: The steel core offers superior mechanical strength, making the rod durable and capable of with standing physical stress during installation and throughout its service life.

Compliance with Standards: Our Copper Bonded Steel Rods adhere to international and national standards, including IEC 62561-2 and NBC 2016, ensuring safety and effectiveness in grounding systems with standing physical stress during installation and throughout its service life.

Technical Features

This solid rod technology offers excellent product life of 40+ years Solution offer remarkable electrical conductivity & high-tensile strength Excellent fault current carrying capacity contrasted with most metals Inhibits corrosion resistant properties as copper. The technology can withstand more mechanical abuses comparatively.







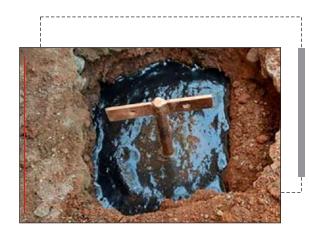
EARTH ENHANCEMENT COMPOUND

IEEE80, NBC 2016, IS 3043, IEC 62561-7

Carbon-Based Earth Enhancement Compound is an advanced grounding material designed to improve the performance of earthing systems. This compound enhances soil conductivity, thereby reducing the overall resistance of the grounding system. It is especially useful in areas with high soil resistivity where traditional grounding methods may not be effective. JMV LPS LTD offers high-quality carbon-based earth enhancement compounds that ensure reliable and efficient grounding solutions.







Features

High Conductivity: The compound significantly lowers the earth resistance, providing a highly conductive medium for the dissipation of fault currents and lightning strikes.

Corrosion Resistance: The carbon-based nature of the compound helps prevent corrosion of grounding electrodes, there by extending the life of the earthing system.

Environmental Stability: The compound is chemically stable and environmentally friendly, ensuring that it does not degrade over time or leach harmful substances into the soil.

Moisture Retention: It retains moisture around the grounding electrode, maintaining low resistance even in dry conditions and ensuring consistent performance.

High Carbon Content: Comprising 95% carbon, the compound ensures optimal conductivity and performance in various soil conditions.

Easy Application: The compound is easy to apply around grounding electrodes and can be used in various soil conditions, enhancing the effectiveness of the earthing system.

Applications

Improved Grounding Performance: By significantly reducing soil resistivity, the compound enhances the performance of grounding systems, ensuring efficient dissipation of electrical currents.

Long-Term Reliability: The compound's ability to prevent corrosion and retain moisture ensures long-term stability and effectiveness of the grounding system.

Cost-Effective Solution: Reduces the need for multiple or deeper electrodes, thereby lowering installation costs while achieving superior grounding performance.

Versatile Use: Suitable for a wide range of applications, including residential, commercial, industrial, and critical infrastructure grounding systems.



EXOTHERMIC WELDING SOLUTION

IEEE80, NBC 2016, IEEE837

An Exothermic Welding System is used for making electrical connections of copper to copper, copper to steel or copper to cast iron for grounding and cathodic applications. An exothermic welded connection shall be suitable for exposure to the elements of direct burial in earth or concrete without degradation over the lifetime of the grounding system.

Features

- Exothermic weld connections form a solid bond around the conductors assuring continuity.
- Superior electrical conductivity.
- Easy installation due to absence of external source. Can be installed at any remote location.
- Exothermic bonds have a higher mechanical strength as compared to other forms of welding.

Exothermic Welding Kit



Installation References





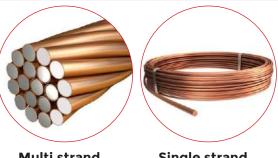
EARTHING CONDUCTOR

IEEE80, NBC 2016, IS 3043, IEC 62561-2, ASTM B227

Our Copper Bonded Steel Conductors, available in both single strand and multistrand configurations, are engineered for exceptional performance in earthing and lightning protection systems.

Manufactured to meet ASTM B227 standards, these conductors are available in two variants, providing 30% and 40% conductivity options to suit diverse application requirements.

These conductors are available in 8mm, 10mm, single core and 158sgmm and 170sgmm stranded formation.



Multi strand Single strand

Features

Durability & Strength: The steel core provides exceptional tensile strength and durability, ensuring the conductor can withstand mechanical stress and harsh environmental conditions.

Corrosion Resistance: The copper bonding offers excellent resistance to corrosion, ensuring a long service life and consistent performance even in aggressive environments.

Versatility: Available in single strand and multistrand configurations, these conductors are adaptable for various earthing and lightning protection applications, including substations, tunnels, metros, and industrial installations.

Copper Stranded Conductor

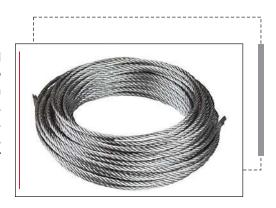
Copper Stranded Conductors are engineered for superior conductivity and flexibility, making them ideal for various electrical and grounding applications. Comprising multiple strands of high-purity copper twisted together, these conductors offer enhanced current-carrying capacity and mechanical strength compared to single-strand wires.

Copper stranded conductors are widely used in power distribution networks, electrical panels, control panels, and grounding systems due to their durability and ability to withstand thermal and mechanical stresses.



Stainless Steel Rope and Conductor

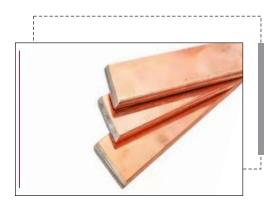
They are designed for robustness and versatility, catering to various industrial and structural applications. Made from high-grade stainless steel, these ropes and conductors exhibit exceptional tensile strength, corrosion resistance, and durability. SS ropes are commonly used in lifting, rigging, towing, and securing loads in construction, marine, and industrial environments. Additionally, stainless steel conductors are employed in grounding systems, especially in corrosive or high-temperature settings, where traditional copper or aluminum might fail.





Copper Bonded Steel Strip

Copper Bonded Steel Strips combine the strength of steel with the excellent conductivity of copper, providing a robust and reliable solution for various electrical and grounding applications. These strips are manufactured by electroplating a thick layer of copper onto a steel core, resulting in a product that exhibits high tensile strength and superior corrosion resistance. This construction ensures that the strip can withstand harsh environmental conditions while maintaining efficient electrical performance.



Stainless Steel Strip

Stainless Steel (SS) Strips are renowned for their durability, strength, and corrosion resistance, making them ideal for a wide range of applications, particularly in environments where exposure to moisture, chemicals, and extreme temperatures is common. These strips are made from high-grade stainless steel, ensuring they can endure mechanical stress and environmental challenges without compromising their integrity.



Copper Strip

Copper Strips are widely used in electrical and construction applications due to their excellent conductivity, malleability, and resistance to corrosion. Made from high-purity copper, these strips provide efficient electrical performance and are easy to work with, making them suitable for a variety of applications, including grounding, electrical connections, and decorative purposes.



EARTH ROD SEAL

NBC 2016, IEC 62561-5

Our earth rod seal is designed to withstand heavy-duty sealing requirements, particularly in areas prone to water seepage and high-water tables. Compliant with **IEC 62561-5** testing standards, it ensures robust performance under high-pressure conditions, maintaining water-tight sealing to prevent leakages and ensure the integrity of your earthing system installations.

Advantages

- Ease & rapidity of installation.
- Ability to pair with a variety of ground/earth inspection housings.
- Long life with stability of service over the life cycle.
- Better water sealing ability due to moulded components.





EARTHING ACCESSORIES

Our comprehensive range of Earthing Accessories, such as Earth Bars with multiple connection studs, Earth Rods, Sleeving, Clamps, and more, offers diverse configurations to meet your needs and safeguard electrical devices from potential damage.



EARTH PIT CHAMBER

NBC 2016, IEC 62561-5

In conventional earthing systems, heavy and hard to maintain RCC pit covers are used, but they often get broken due to mishandling. The latest solution is lightweight plastic pit covers, which are easy to maintain and have a high load-bearing capacity (tested at 8 tons by a government NABL accredited lab).

These plastic pit covers are more economical than concrete covers and are already successfully used in **NCRTC & Metro projects.**



Features



Light weight



Durable



Easy to Installation



Strong



Cost-Effective

Installation References









SMART EARTHING MONITORING SYSTEM

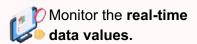
The Smart Earthing Monitoring System (SEMS) employs AI and IoT to remotely assess grounding system conditions. It monitors earth resistance and continuity, addressing challenges like moisture and corrosion. SEMS simultaneously tracks multiple grounding systems, sending combined sensor data to a Central Cloudhub for real-time analysis. Online alerts warn users when resistance values exceed set thresholds, ensuring optimal safety. Users can access real-time data via a web portal or mobile app, overcoming challenges associated with fluctuating ground resistance values and record-keeping. SEMS stands as an advanced solution for maintaining reliable and secure grounding systems in various applications.

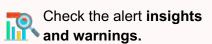




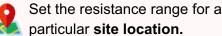
Web Portal and Mobile Application

The real time data obtained from the site locations is processed and sent to a Central Cloudhub. This real-time data it is accessible to the users through the Web Portal and Mobile Application where the user can:









Check & Print the history records of particular date and time.



DIGITAL GROUNDING SYSTEM

An Earthing Device that need not to be buried under the ground.

The Digital Grounding System (DGS) is an electronic device that ensures optimal grounding & surge protection for sensitive equipment. With a low impedance ground built-in & surge protection it eliminates abnormal voltage & induced transients, as well as any static charge, noises, or other electrical anomalies that may affect valuable equipment. By providing a clear bonding potential and equipotential platform, it eliminates the possibility of step voltage damage and ensures a grounding network impedance of less than 1 Volt.

Applications

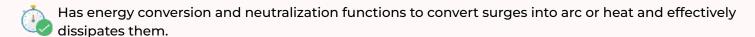
Data Centers

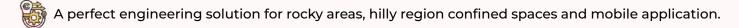
- Communication Equipment
- Switches- L2/L3 Layers

- Control Centers
- Data/Signal Equipment



A multi-functional device with Grounding, Surge Protection, Counter & Monitoring features.





Provides a reliable and low-interference path for grounding & maintains stable potential of 1 Volt.





LIGHTNING PROTECTION SOLUTION

As per IS/IEC 62305, National Building Code (NBC 2016) & NFC17-102

At **JMV LPS LTD**, we specialize in providing state-of-the-art lightning protection systems that safeguard your valuable assets, infrastructure, and personnel from the devastating effects of lightning strikes.

With years of experience in the field, our team of experts brings a deep understanding of lightning behavior, electrical engineering, and structural dynamics. This expertise allows us to design, install, and maintain lightning protection systems that minimize the risk of lightning-related damage, downtime, and loss.



We are committed to adhering to the highest industry standards to ensure the safety, reliability, and effectiveness of our lightning protection systems. Our designs and installations are guided by internationally recognized standards that set the benchmarks for lightning protection practices. Some of the key standards we follow include IS/IEC 62305, NBC 2016, IEC 62561 series, OISD-GDN180 and NFPA 780.

OUR OFFERINGS

Jmv offers a comprehensive solution for lightning protection that includes,

1. Risk Assessment as per IS/IEC 62305

3. Product supplies

2. Design

4. Supervision/Installation



Risk Assessment

Risk assessment in a Lightning Protection System (LPS) is vital for identifying potential hazards, evaluating the probability of lightning strikes, and assessing the potential impact on structures and people. At JMV LPS Ltd., we utilize advanced software tools such as CDEGS and our proprietary software detailed on our website (http://lightningriskassessment.com). These tools help us design effective mitigation strategies, ensuring compliance with safety standards such as IS/IEC 62305-2, and minimizing the risk of damage and injury. This proactive approach enhances the overall safety and reliability of the LPS.



The design of a Lightning Protection System (LPS) is crucial for ensuring safety and reliability. Once the appropriate level of protection is determined, a detailed design is provided, including customized system layouts, specific material requirements, and tailored installation procedures. We employ various design methods such as the mesh method, the protection angle method, and the rolling sphere method, in accordance with IS/IEC 62305-3 guidelines.

This ensures the optimum level of safety and protection for both people and equipment while maintaining structural integrity and minimizing the risk of lightning-related damage.



Product Supplies

We supply a comprehensive range of high-quality components and materials required for the installation of lightning protection systems. Our products comply with international standards, ensuring durability, effectiveness, and reliability. From air terminals to grounding systems, we provide all essential elements to build a robust LPS.

Supervision/Installation

Expert supervision and installation services are provided to ensure the correct implementation of the lightning protection systems. Our experienced professionals oversee every step of the installation process, ensuring adherence to the design specifications and compliance with all relevant standards. This guarantees the system's effectiveness and longevity.

Approvals & Testing

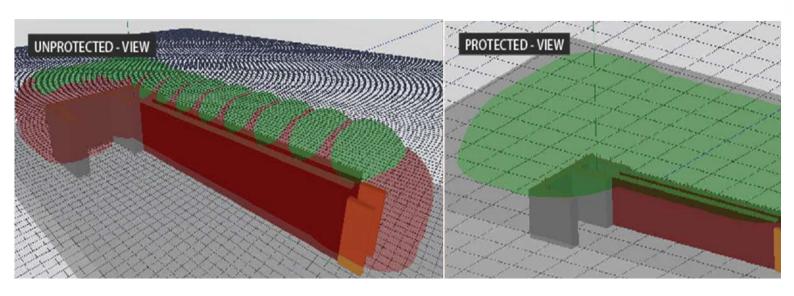
Comprehensive testing and approval services verify the effectiveness and compliance of the installed systems. We conduct rigorous testing procedures as per IEC 62561 to ensure that the LPS meets all specified standards and provides the desired level of protection. Additionally, our earth rods and exothermic joints are UL listed as per UL 467.

Our approval process includes detailed inspections and certification, giving you confidence in the safety and reliability of your lightning protection system.

JMV Lightning Risk Assessment Software

JMV Lightning Risk Assessment Software offers advanced, precise, and user-friendly tools to evaluate the potential risks of lightning strikes for any infrastructure. Designed in compliance with international standards, our software provides accurate risk calculations, helping you implement effective lightning protection measures. With real-time data analysis and intuitive interface, ensure the safety of your structures with JMV's state-of-the-art assessment solutions.

Software Link: http://lightningriskassessment.com/





AIR TERMINALS

(IS/IEC 62305:2010, NBC 2016, IEC 62561-2)

Air terminals, commonly known as lightning rods or strike points, are strategically positioned atop structures to intercept lightning strikes. Crafted from robust and corrosion-resistant materials, air terminals are designed to provide a preferred path for lightning to discharge safely into the ground, minimizing the risk of damage to the structure and its occupants.

The Air terminal rods are available in Aluminium, Copper, Copper Coated Aluminium & Copper Coated Steel, Stainless Steel, GI as per standard IS/ IEC 62305-3 specification.



CONDUCTOR

IS/IEC 62305:2010, NBC 2016, IEC 62561-2

Our high-quality conductors are essential for transferring lightning energy from air terminals to the ground. These conductors are used as down conductors, mesh conductors, roof conductors, parapet conductors, ring conductors, and for earthing interconnections.

Designed to comply with international standards, they ensure the safe and effective dissipation of lightning energy, providing comprehensive protection for the structure.



LIGHTNING STRIKE COUNTERS

IS/IEC 62305:2010, IEC 62561-6

Our lightning strike counters are designed for accurate monitoring of lightning events:



Electro-Mechanical Counters

These **7-digit counters** provide a reliable and straightforward method for counting lightning strikes. They are easy to install and operate without the need for an external power source, making them highly dependable for various applications. These counters are typically installed on the down conductors of the lightning protection system to provide a precise record of the number of strikes the system has intercepted.





Digital Counters

These **8-digit counters** offer advanced functionality by not only counting the strikes but also recording the date and time of each event. This detailed monitoring allows for comprehensive analysis and enhances the safety management of the protected structure. The digital counters are equipped with robust memory and user-friendly interfaces, enabling easy access to the recorded data. They are particularly useful for facilities that require detailed records for maintenance and safety audits.

LPS ACCESSORIES

Connection Components: (IEC 62561:2017-1)

Our connection components are designed to ensure secure and effective connections within the Lightning Protection System (LPS). These components are critical for maintaining the integrity and performance of the system, ensuring that all parts are properly connected to provide a continuous path for lightning current. High-quality materials and precise manufacturing processes guarantee reliable and long-lasting connections.



Proper securing of conductors is vital for maintaining the system integrity and performance of an LPS. Our conductor fasteners are designed to meet stringent standards, ensuring that conductors remain securely in place even under extreme weather conditions. These fasteners are durable, corrosion-resistant, and easy to install, providing a reliable solution for securing conductors in both new and existing installations.



ISOLATING SPARK GAPS

IS 62561:2017-3

Isolating spark gaps are essential for protecting LPS components from overvoltage. These devices act as protective barriers, preventing excessive voltage from damaging sensitive equipment. By isolating different sections of the LPS, spark gaps ensure that the system can safely handle high-voltage transients, enhancing the overall safety and reliability of the lightning protection system.



Installation References







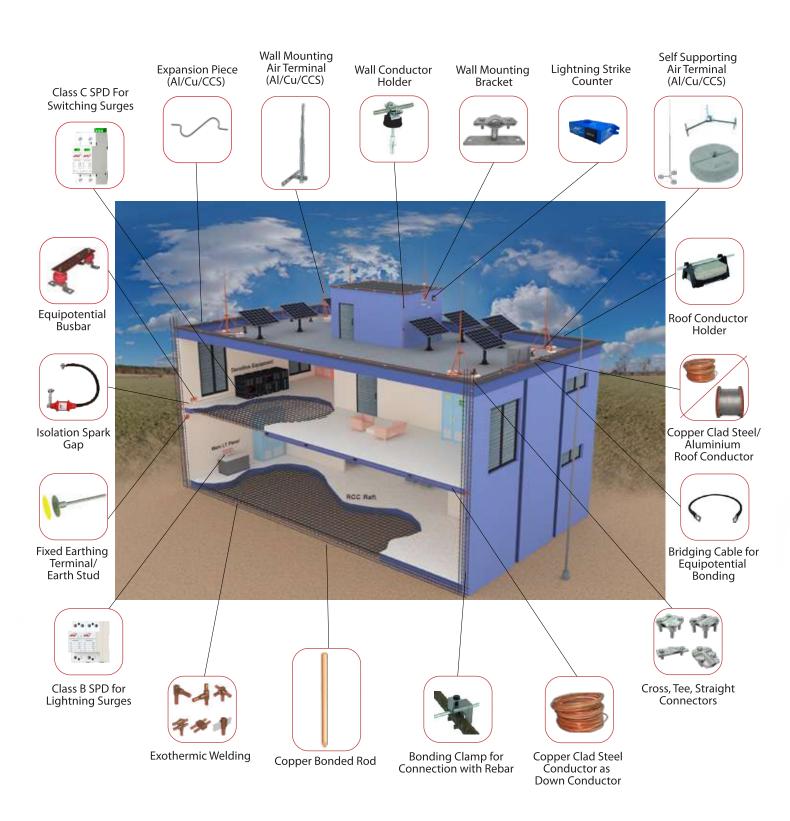






DETAILED INSTALLATION VIEW OF LPS & EARTHING SOLUTION

Clause No. 5.4.1, Page 14: A single integrated structure earth termination system is preferable and is suitable for all purpose (i.e, Lightning Protection system, Power system and telecommunication system)





SURGE PROTECTION DEVICE

Surge Protection Devices (SPDs) are essential components in safeguarding electrical systems and sensitive equipment from transient voltage spikes and surges. These devices are designed to protect against the damaging effects of lightning strikes, power line disturbances, and switching transients by diverting excess voltage away from critical components and safely dissipating it.



Class B (Non-Pluggable)

Key Specs: with Coordination Module **Available in 1 & 3 Phase**



Class B (Pluggable)

Key Specs: Modular; Pluggable Available in 1 & 3 Phase



Class B+C (Progressive Indication)

Key Specs: Progressive Status Indicator **Available in 1 & 3 Phase**



Class C (Pluggable)

Key Specs: Modular; Pluggable
Available in 1 & 3 Phase



Solar SPD

Key Specs: Modular; Pluggable
Available in 600V. 1000V. 1500V DC



RJ45 POE - ODR

Key Specs: Pole Mounted



RJ45 POE - IDR

Key Specs: Din Rail Mounted



Surge Analyzer

Key Specs: Storage capacityup to 500 count, Real time Monitoring



Surge Counter

Key Specs: 4 digit counter



SPD LIFE TESTER

Surge Protection Device Tester is designed for on-site testing of Surge Protection Devices (SPD). It allows to measure both the varistor voltage that can be validated from the evaluation table. Users can determine the status of these components according to the tester. This device is capable to conduct the testing on any type of SPD. It is a hand held device which is easy to use for the maintenance team to check the efficient life of installed SPD's. It allows to measure Varistor Voltages and Leakage Current of MOV, Spark Over Voltage of GDT and Clamp Voltage of TVS/Zener.

Reference Standard:

This Tester is made with reference to IEC 61643 part 11 and part 21.

- IEC 61643 "Surge Protective Devices connected to low voltage power distribution system" Part 11: Performance requirements and testing methods. Class I and II tests.
- IEC 61643 "Surge Protective Devices connected to telecommunications and signaling networks" Part 21:





ENGINEERING CABLE DUCT

Polyolefin cable ducts may be very useful for application in sub-urban sections where cable trenching and digging is a severe problem due to space constraints, proximity of other cables and utilities. It is the best ever solution recommended for signal, telecom and electric cables for railways and metro rail to protect the cables from any types of damages due to external factors.

Features



CABLE SAFETY AGAINST JCB EXCAVATION



HIGH LOAD BEARING



FIRE RETARDANT



ANTI-RODENT



UV PROTECTION



HIGH DIELECTRIC STRENGTH



LIGHT WEIGHT



EASY TRANSPORTATION



MALE-FEMALE JOINTS



LOCK & SCREW



EASY INSTALLATION

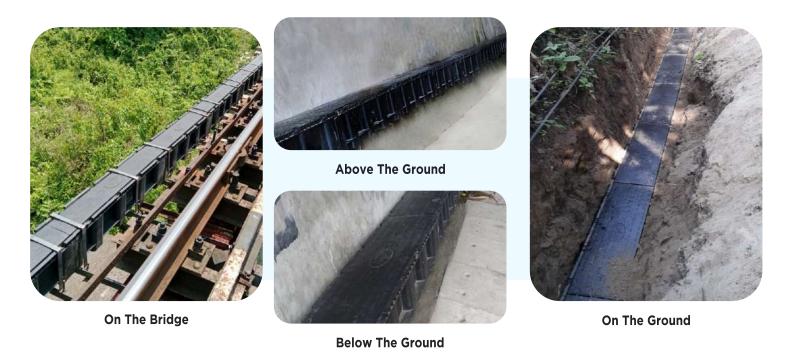


EASE OF STORAGE



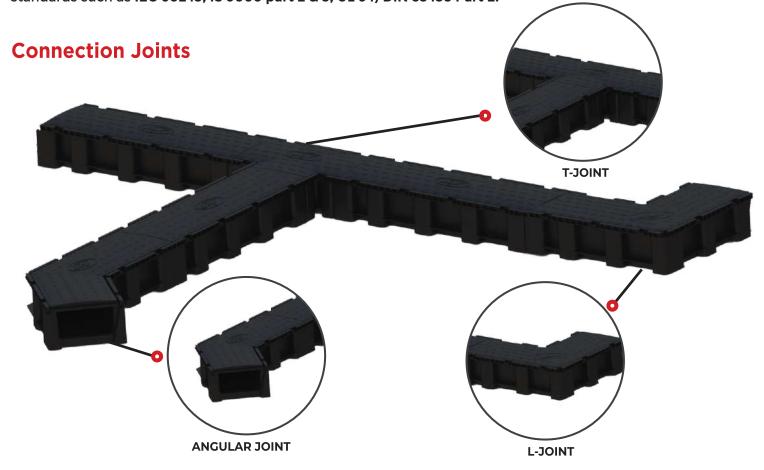
Installations

These multi use cable duct have a wide range of application, It can be installed as per the user requirement.



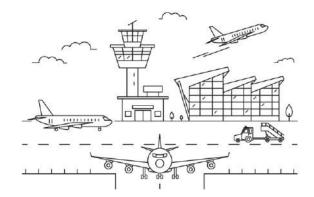
Specifications/Standards

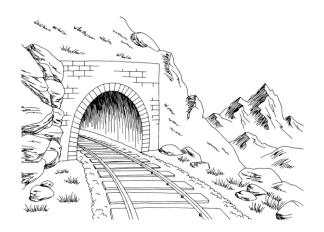
The specification and standards for cable duct vary depending on the specific application and location, but generally include guidelines for materials, size and fire retardant. The cable duct are tested as per relevant standards such as IEC 60243, IS 9000 part 2 & 3, UL 94/DIN 53438 Part 2.

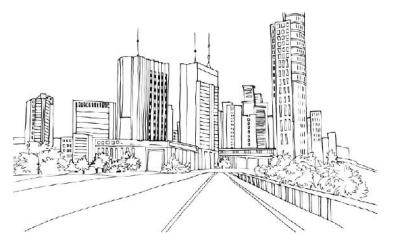


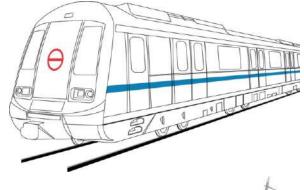


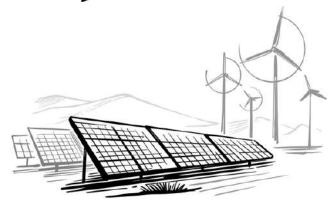
Products and Services are tailored to cover a wide range of industry sectors

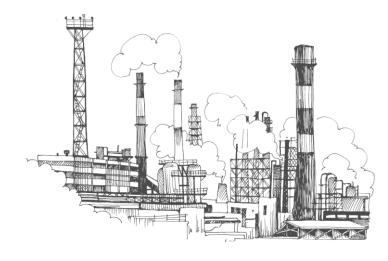












JMV LPS LIMITED











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