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Midsun HVIC

THE RELIABLE, COST-EFFECTIVE AND LONG-TERM SOLUTION TO FLASHOVERS ON HIGH VOLTAGE INSULATORS

Midsun HVIC (High Voltage Insulator Coating)

Unparalleled Flashover Protection for Reliable Service

Why?

For along term, cost effective and reliable product, only Midsun HVIC silicone coating provides anear maintenance free system that can prevent excessive leakage current, tracking and flashovers on any type of high voltage insulators.

Midsun HVIC silicone is not affected by UV light, temperature, corrosive environments, or ATH pitting from dry band arcing.

The coating is also highly water repellent, so contaminants cannot film over the surface. It is along-term solution to flashover problems.

Midsun HVIC Silicone Coating can eliminate or reduce:

- Regular insulator washing.
- Periodic re-application of grease.
- Replacement of components damaged by flashovers.
- Repair silicone sheds and rod damage on composite insulation systems.

Protect against flashover contamination:

- Salt
- Coal Dust
- Cement Dust
- Sugar Cane Carbon
- Fly Ash
- Bird Droppings / Streamers
- Cooling Towers

Midsun HVIC room temperature vulcanizing (RTV) silicone rubber coating on glass, porcelain, and polymer insulators performs byvirtue of its water repellency and its proprietary anti-tracking, flame retardant adhesion promoter agents. Because the coating is highly hydrophobic contaminants cannot film out over the surface.

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Application

The insulation surface to be coated must be clean and dry. In most instances, only a water washfollowed by anaphtha, IPA or acetone solvent wipe will be needed. In some instances, like insulators in cement plants and other heavily polluted environments, dry blasting with corn cob or walnut shell may be needed. Dry blasting is also recommended for insulators previously greased.

Methods of coating insulators include brushing, dipping, and spraying. When only a fewinsulators need to be coated, aerosol spray cans is the recommended method.

Usually one to three coats is sufficient to obtain the recommended minimum thickness of 15 mils. (0.015 inches). When the entire substation is to be coated, spraying is the recommended approach. Spray equipment varies considerably in design and depending on the equipment used, two or three coats may be necessary to obtain the desired thickness.

Each coat can be applied as soon as previous coat becomes tacky. This can be up to 15 minutes depending on the ambient temperature and humidity.

The liquid surface on coated insulators dries to the touch in approximately 40 minutes and reaches complete cure in several hours. Midsun Group can provide this service at a very cost-effective rate.

Midsun HVIC coating is available for live line application. The non-flammable carrier solvent permits safe application under live conditions. This, of course, requires the use of tools designed specifically for live application.

Colors

Standard colours of Midsun HVIC are white and grey.

Packaging

Midsun HVIC is supplied in aerosol cans, 1 kg cans, 5 kg pails, and 55 kg drums.

Storage

When stored in original unopened container below 25°C (77°F) has a shelf life of 12 months from the date of shipment. While in storage, sedimentation may occur. Prior to any application thoroughly stir the material before use. Store out of sun, under dry conditions away from heat.

Security precautions

Midsun HVIC uses a neutral cure system, so no acetic acid fumes or objectionable by-products are evolved during application.

On direct contact, uncured sealant may irritate eyes. Flush with water and call aphysician.

See Material Safety DataSheet.

Typical Properties

Flash Point Temperature	18°C * (65°F)
Dielectric Strength	35.9kV/mm
Dissipation Factor @ 100 Hz	0.021
Tracking & Erosion Resistance @2.5kV/min	1000 hours withstand
Dielectric Constant @ 100 Hz	3.85
Specific Gravity	1.28 (±0.04)
Viscosity	3500-5500CPS
Application Temperature Range	0-50°C (32- 120°F)
Coverage	Min. 15 Mils
Est. Skin-over time @ 250C; 50% relative humidity	15Min.
Est. Tack-over time @ 250C; 50% relative humidity	30 Min.
Usable Temperature Range	-40 to 148°C (-40 to 300°F)
Storage Time & Temperature	1 year, 77°F (25°C)
*Export Flash Point Temperature	*39.4°C(103°F)

Warranty Statement

The product is warranted to meet its specifications. In no event shall Midsun be liable for incidental or consequential damages. Except as expressively stipulated, any liability, expresses or implied is limited to the stated selling price of the defective goods. Data is subjected to change without notice and it is therefore recommended that this information not be used for specification writing.

For additional information on specific applications, contact Midsun Group.

No Flashover Warranty Statement

When Midsun HVIC is applied by or under the direct supervision of Midsun Group, Midsun HVIC is warranted to prevent flashovers from the onset of leakage current. Call for specific terms and conditions.

Midsun HVIC Energized stops pollution induced outages

Midsun HVIC Energized is the only coating offered today that allows for energized applications.

Midsun HVIC Energized is a uniquely formulated Room Temperature Vulcanization coating, it offers utility companies worldwide the opportunity to perform quality maintenance for pollution induced outages, without having to experience costly shutdowns.

Midsun Group, Inc. is the only manufacturer to deliver both coating and the application service with a "in house" trained and employed workforce.

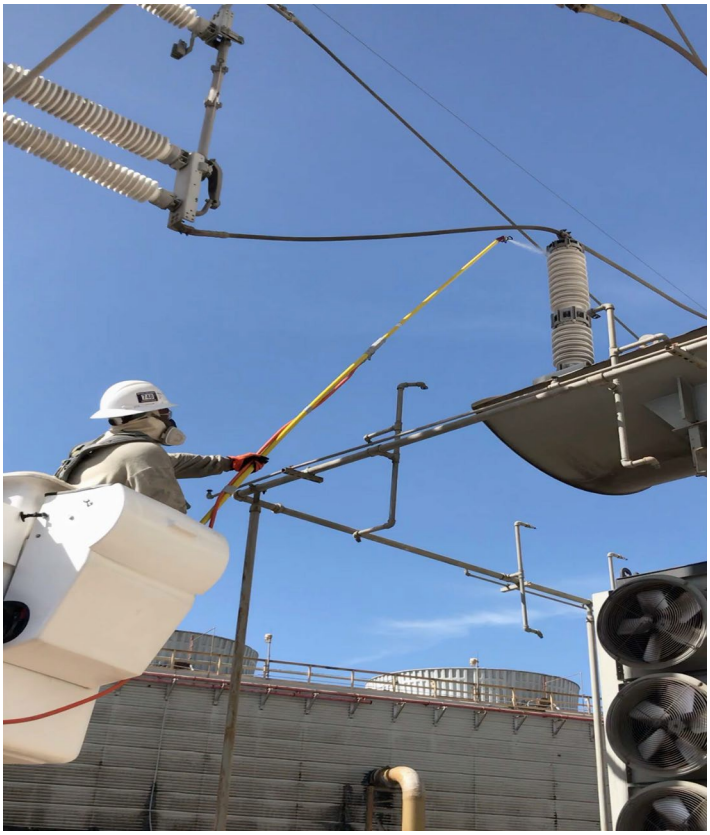
Our diligent applicators will ensure that our products are applied at an optimal thickness and in a safe manner and by using these appropriate special tools according to international standards. Midsun HVIC Energized has been successfully applied on lines up-to 230kv.

After 30 years of experience, Midsun has been able to improve both the productivity and safety of field personnel performing energized work.

Major electricity transmission and distributor operators across America such as AEP (American Power Company) in Texas, Dominion Virginia Power in Virginia, have relied on Midsun HVIC Energized.

Midsun HVIC Energized application eliminates:

- **Costly maintenance shut downs.**
- **Unnecessary wear and tear on system back up units**
- **Reliance on peak loading generation.**
- **Pollution caused outages.**
- **IPP contract fines.**



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State-of-the-art on RTV pre-coated ceramic and glass insulators

The growing interest to coat glass and ceramic insulators at the time of their manufacture lies on its superiority in terms of uniformity and adherent hydrophobic surface before being or. An optimal solution for pollution flashover on high voltage insulators in any coastal, industrial, desert location.

In-house coating is notably beneficial for projects where new insulators are installed. When coating the insulators, there is no need to deal with outdoor weather conditions nor to prepare the coating as on-site applications.

Midsun will assure that the clean and new insulators are coated within the controlled ambiance of Midsun Group production facilities and mobile plants on a global basis.

A high-quality product ready to be installed is delivered

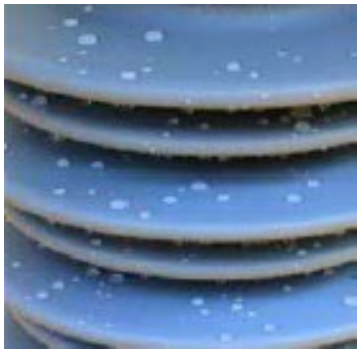
More than two decades of international experience and customers satisfaction, Provides of the superior quality and hydrophobity of Midsun HVIC and Repace all In-House by Precoated coating procedure developed by Midsun Group.

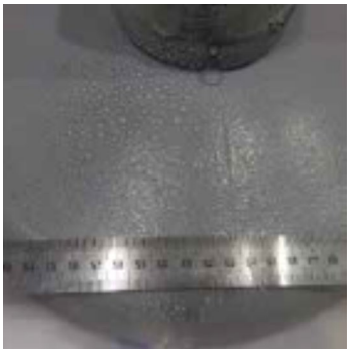
OUR PROCESS:

- Insulator Surface Cleaning and Masking
- Midsun HVIC RTV coating Application
- Controlled Curing Process
- Inspection and Quality Control
- Hydrophobicity Testing
- Proper advanced packing to protect from damage
- Professional Installation

The main utilities across USA, Qatar, India, Chile, Australia, Japan with lines operating under heavy polluted conditions rely on Midsun Precoated Insulators since long time.

The advantage of Midsun pre-coated insulators is that Midsun is RTV coating manufacturer and applicators which is giving a guarantee that the product is being applied by the very same manufacturer of the coating.





THIS POSITION US AN EXPERTS IN BOTH RTV SILICONE COATING MANUFACTURING AND IN-HOUSE APPLICATION AND IMPLEMENTATION SERVICES ON A GLOBAL LEVEL

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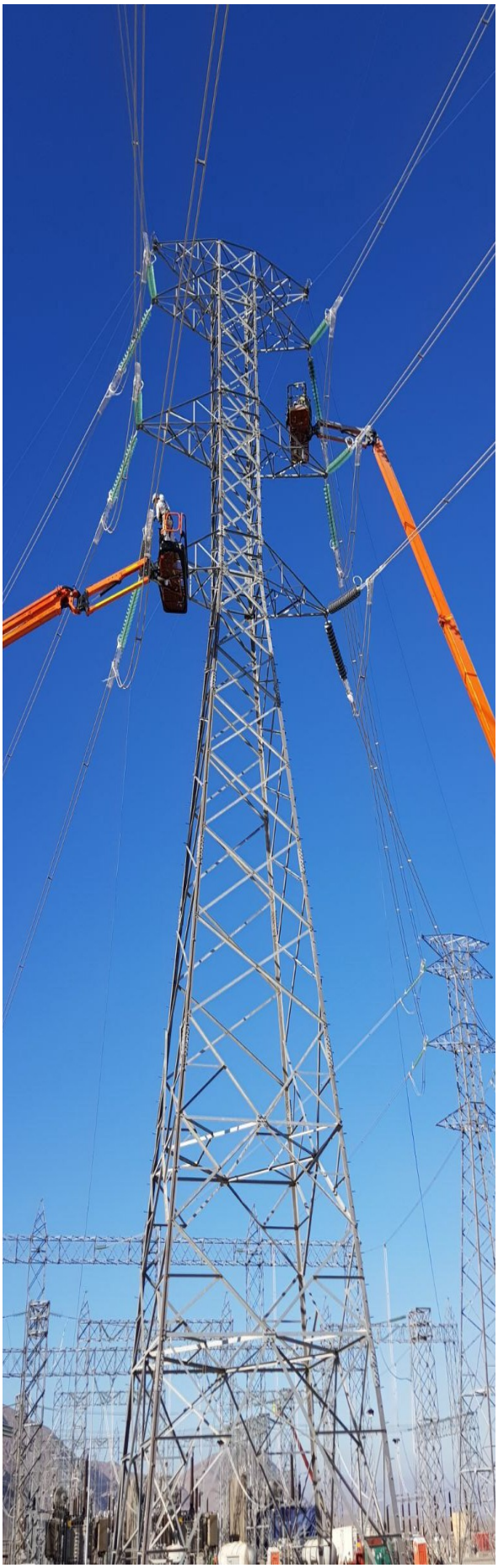

Our Mission

Founded back in 1992, Midsun Group has become an international leader in innovative silicone protective materials and diverse application solutions to serve such diverse markets as electric power, oil and gas, infrastructure and transportation.

Our mission has been clear:

to give long-term solutions to common challenges present within the production, transmission and distribution of the energy worldwide

-Flashovers due to pollution on high voltage insulators

-Corrosion on Power System, Oil and Gas, Infrastructure Equipment

-Wildlife and Birds Induced Outages on substations and over-head lines

Midsun Group, Inc. has developed as amulti-product manufacturer, from its three production centers on an international scale it manufactures silicone RTV coatings to eliminate flashovers due to pollution on high voltage insulators and anti-corrosion applications, covers and wildlife protection material, silicone tapes and it provides with application professional services on energized and de-energized lines.

Midsun Group, Inc. provides with turnkey projects for all its products exceeding the highest quality standards, practical demos and training courses and technical conferences with experts in the insulators and silicone field.

Midsun can design custom products to meet your specific needs. We own the patents on many of the unique products that we distribute and weenjoy the challenge of finding unique and cost effective solutions for our customers.

Additional Services from Midsun Group

Turnkey Live Line Application
Anticorrosion Protection
E/Paintable

State-of-the-art on prototypes and covers manufacturing Wildlife Induced Outages Protection at substations and over-head lines

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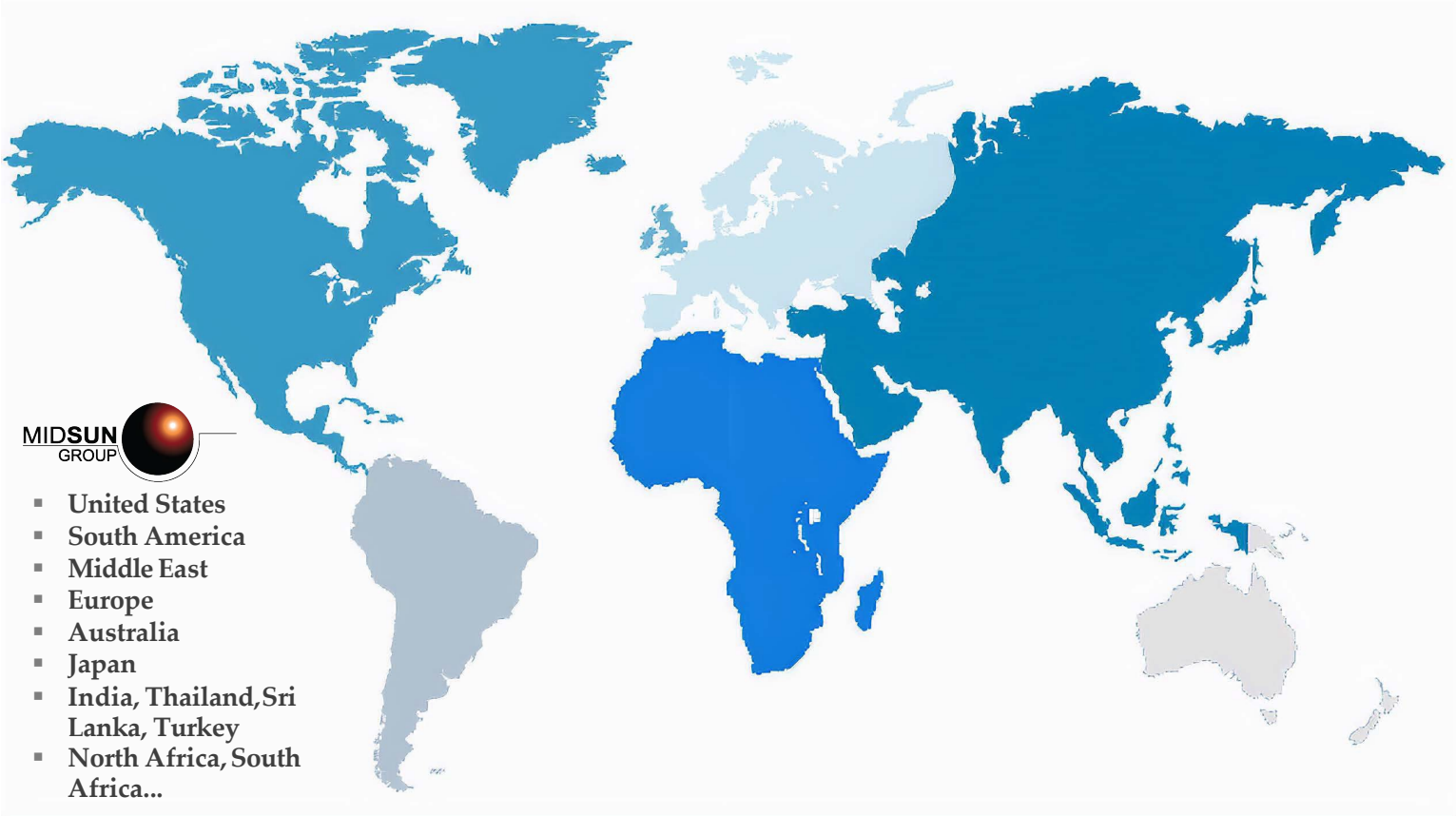
GLOBAL PRESENCE AND LOCAL PROXIMITY

MIDSUN GROUP INC: THE TECHNICAL PARTNER AND EXPERT ON SILICONE TECHNOLOGY TO SOLVE THE CHALLENGES AND PROJECTS PRESENTED WITHIN THE TRANSMISSION AND DISTRIBUTION LINES ON A GLOBAL BASIS



TURNKEY APPLICATION PROJECTS

Midsun Group Inc. is an interantional leader in coordination, development and execution of major RTV application projects and initiatives for RTV implementation by utilities.

Our technical chiefs and application specialists will make sure that the monitoring, displacement and optimal application of our RTV coatings fully conforms with the optimal thickness according to international standards and under the highest safety terms.

We provide with immediate mobilization in stade for the execution of the turnkey projects and training courses.

Midsun Group Inc. adapts and works around to the specific needs of its customers: having the capacity to apply Midsun HVIC in-house (RTV pre-coated insulators) at our distribution centers and on-site application throughout our global applicators network.

28 operationyears

+55 countries, 5 continents

Global Applicators Network

20,000 km of lines up-to 500 kV

Successful Completion of Major RTV Project in South America:| *Interconenxion Mejillones - Cardones | 500 KV | Chile (2017)|*

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MIDSUN GROUP

" RELIABLY SERVING THE UTILITY INDUSTRY SINCE THE 1990S"

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