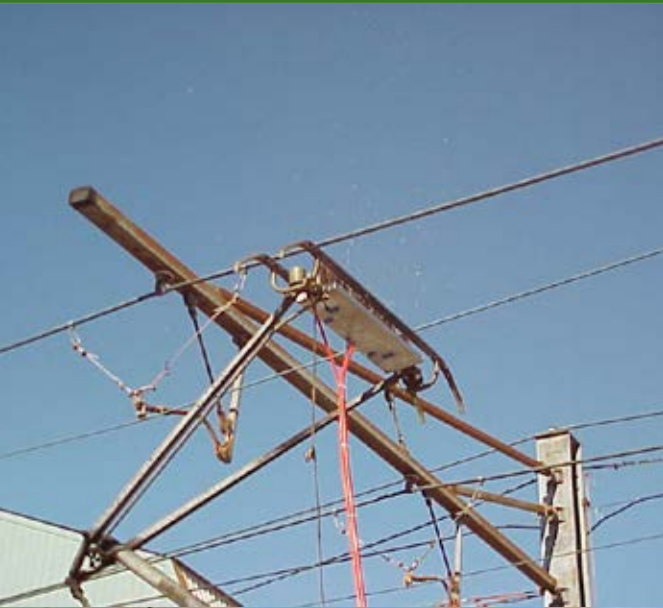


Ice Barrier®

Ice and Freezing Inhibitor



Gentler on the Environment and Just as Effective

Frost, sleet, snow or ice attaching itself to overhead catenary systems creates potential serious operational and maintenance problems. First, ice build-up on wires can drop the lines from their mount due to exceeding load limit design. Even a ¼ inch of ice can add 200lbs per 50' span of wire. Second, ice coated wires blocks the power transmission to the contact shoe of the transit vehicle stalling them from power loss. Power failure results in stranding equipment and passengers in the most inopportune times.

Both circumstances can be mitigated by proactively treating the wire with the anti-icing properties provided by Ice Barrier ice and freezing inhibitor. A light application applied to the wire will install a protective coating to protect the wire from ice accretion while not impairing electrical transmission.

When forecasts call for conditions conducive to these events, applications are performed ahead of and the storm then repeated as dictated by conditions. Application equipment can be custom designed based on your fleets needs and requirements. Maintenance equipment or even revenue vehicles can be used by utilizing portable custom tailored Ice Slicer delivery systems to treat the wires as required.

Ice Barrier will not insulate or be conductive to cause undesirable arcing on overhead catenary systems. It is biodegradable and is green technology made from renewable raw materials.



An environmental standpoint

As traditional anti-icers are formulated from glycols (ethylene, diethylene or propylene) these materials are derived from hydrocarbon-based raw materials that are finite resources. Ice Barrier ice and freezing inhibitor uses renewable raw materials that effectively eliminate the need for glycol-based anti-icing agents. Ice Barrier has also been developed with rheological properties to offer a higher viscosity product when static to prevent run off after application. Unlike some traditional glycol anti-icers that thicken and become hard to spray when temperatures lower, under shear or pressure, Ice Barrier offers a low viscosity so it is easily sprayed in all temperature constraints. Once applied, Ice Barrier quickly regains its lower viscosity to remain in place and prohibit freezing.

About Ice Barrier

What Ice Barrier is

- A product developed by Midwest to mitigate ice formation in freezing conditions
 - Developed for specific applications including where electric power is transferred (such as light rail that uses third-rail and/or catenary power)
 - New technology to complement Midwest's Zero Gravity Third Rail Anti-Icing Agent
-

What it is used for

- As an inhibitor prior to the risk of freezing conditions or snow accumulation
-

Applying Ice Barrier

- Works with Midwest's Ice-Slicer® portable anti-icing systems or through similar type sprays
 - Custom systems available
 - Application rates may vary; at a minimum a thin film of 0.01" generally protects the surface against freezing
 - Does not require any agitation, recirculation or dilution
 - Minimum 2-year shelf life for product stability and product effectiveness
 - Application repeated as conditions warrant
-

How it works

- Aliphatic alcohol properties disrupt the freezing crystalline structure of moisture droplets, weakening the moisture so it does not form ice crystals or a solid bond to treated surfaces
-

The green factor

- Biodegradable and based on renewable raw material
-

Other characteristics

- Non-conductive, non-corrosive, non-flammable
-



An environmental standpoint

As traditional anti-icers are formulated from glycols (ethylene, diethylene or propylene) these materials are derived from hydrocarbon-based raw materials that are finite resources. Ice Barrier ice and freezing inhibitor uses renewable raw materials that effectively eliminate the need for glycol-based anti-icing agents. Ice Barrier has also been developed with rheological properties to offer a higher viscosity product when static to prevent run off after application. Unlike some traditional glycol anti-icers that thicken and become hard to spray when temperatures lower, under shear or pressure, Ice Barrier offers a low viscosity so it is easily sprayed in all temperature constraints. Once applied, Ice Barrier quickly regains its lower viscosity to remain in place and prohibit freezing.

About Ice Barrier

What Ice Barrier is

- A product developed by Midwest to mitigate ice formation in freezing conditions
- Developed for specific applications including where electric power is transferred (such as light rail that uses third-rail and/or catenary power)
- New technology to complement Midwest's Zero Gravity Third Rail Anti-Icing Agent

What it is used for

- As an inhibitor prior to the risk of freezing conditions or snow accumulation

Applying Ice Barrier

- Works with Midwest's Ice-Slicer® portable anti-icing systems or through similar type sprays
- Custom systems available
- Application rates may vary; at a minimum a thin film of 0.01" generally protects the surface against freezing
- Does not require any agitation, recirculation or dilution
- Minimum 2-year shelf life for product stability and product effectiveness
- Application repeated as conditions warrant

How it works

- Aliphatic alcohol properties disrupt the freezing crystalline structure of moisture droplets, weakening the moisture so it does not form ice crystals or a solid bond to treated surfaces

The green factor

- Biodegradable and based on renewable raw material

Other characteristics

- Non-conductive, non-corrosive, non-flammable