

Increase asset availability with chrome-free corrosion protection.

Protective Barrier Coatings | for Added Corrosion Control

Luna's protective barrier coatings and treatments have been developed to provide extremely durable, environmentally benign, and easily applied protection that repels corrosion-causing salts and contaminants.

Once applied, these protective coatings can extend part lifetime, reduce depot maintenance expense, and significantly improve availability of assets. Functionality is tailored for specific applications to provide enhanced hydrophobicity, adhesion to a variety of substrates, transparency, flexibility, or color-matching.



Durable with high abrasion resistance

Robust adhesion to variety of substrates

Easy application per standard practices

Thin coating layer (1-5 μm)

Flexible for increased toughness

Designed to scale

Compatible with large-scale production and application processes. One of Luna's protective coatings has been licensed to UltraTech International for manufacturing and sale under the trade name Gentoo™. Gentoo is commercially available.

Controlling Corrosion at Fasteners

Luna has developed a thin and durable surface treatment to provide electrochemical barrier protection at fastener locations on aircraft. Significant galvanic corrosion exists at these anode-cathode locations, and Luna can mitigate this corrosion using a protective barrier treatment by limiting available cathodic current.

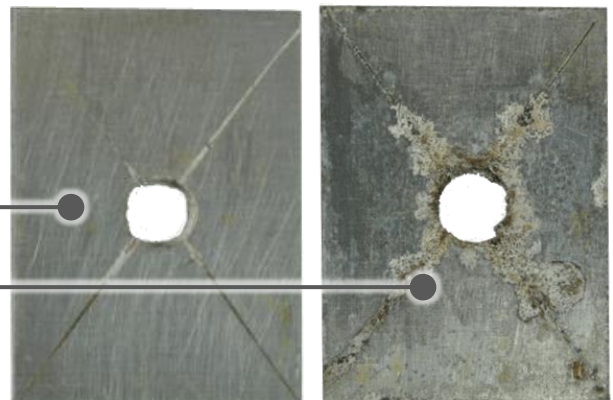
The treatment utilizes Luna's proprietary sol-gel platform and has been tailored for optimum durability, frictional characteristics, and color. A blue tint allows for visual verification of coverage.

Once installed, Luna treated fasteners can be primed and coated with the aircraft exterior per standard processes.

Fastener holes in AA 7075-T6 sheet after 1250 hours in B117

After removal of Luna treated fastener

After removal of bare 316SS fastener



Luna's treatment is electrically isolating and protects against galvanic corrosion at fastener install locations.

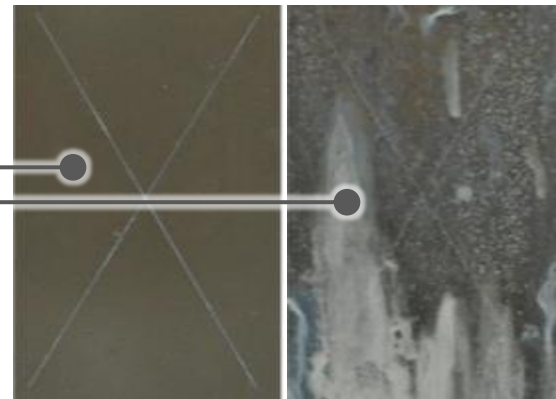
Protecting Landing Gear Components

Luna designed a thin, durable, hydrophobic, and contaminants-shedding coating to extend service life of landing gear components, enhancing aircraft availability. The coating protects components which are prone to corrosion when the surface is damaged by impact or wear. In particular, the coating is designed to protect mated parts, bushings, and threaded parts.

The coating retains excellent protection against surface contaminants following abrasion tests and fluid immersion tests in jet fuel and hydraulic oil.

Panels after 2000 hrs in B117

Luna coating on ZnNi plated 4130
ZnNi plated 4130



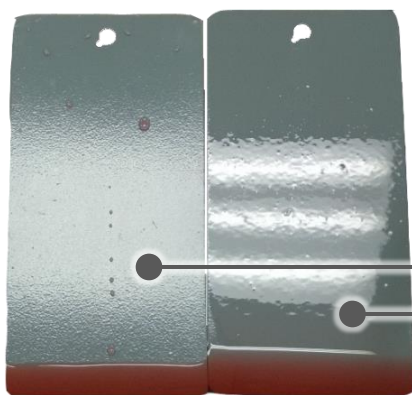
Extending Lifespan of Marine Tow Cables

A transparent, thin, abrasion resistant, and hydrophobic coating was developed to prevent corrosion on the Navy's Remote Minehunting System (RMS). Luna's hydrophobic sol-gel platform was tailored to provide optimum abrasion resistance and flexibility to protect the RMS tow cable from salt accumulation during ocean retrieval and drying. The RMS is launched off of the Navy's Littoral Combat Ship to map mine locations.

Luna teamed with a prime integrator to develop methods for applying the coating during tow cable manufacturing. Several hundred feet of tow cable were coated for large scale testing.

Luna coated tow cable

Luna coated tow cable after 2000 bend test



Protecting Existing Topcoats

Protective barrier coatings can be tailored for adhesion to existing primer and topcoat systems, enhancing the durability and service life of components.

Shown to the left, Luna's coating retains oleophobic properties following immersion testing in hydraulic fluid. For this study, Luna's coating protects a MIL spec aerospace polyurethane topcoat.

Luna coating on MIL PRF 85285 polyurethane after immersion test

MIL PRF 85285 polyurethane after immersion test

Luna Innovations Incorporated all right reserved
Specifications subject to change without notice

Luna Innovations | www.lunainc.com

Questions?
materials@lunainc.com
Luna Labs Materials Research