



Spécialiste en protection contre la corrosion

Protection specialist against corrosion

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RUST-ANODE® PRIMER

TECHNICAL DATA SHEET

PRODUCT #300016

Rust-Anode Primer is an alternative to hot-dip galvanizing and metallization offering comparable performance including sacrificial protection. Technology formulated with a high zinc content in a single component with fast drying. It offers excellent resistance to impact, and immersion. (fresh and saltwater) Recommended for industrial use on new or existing infrastructure in the marine environment, mining, electrical, and transport world. Application up to 99% relative humidity. Applicable on all metals, it can be overcoated if necessary.

GENERAL INFORMATION

Unique industrial galvanizing technology of organic zinc-rich, providing an electrochemical bond with 88% zinc in the dry layer

Provides cathodic/sacrificial protection by the same mechanism as galvanizing

Provides a lifetime comparable to hot-dip galvanizing under the same exposure conditions

Approved to refurbish the zinc protection of hot-dip galvanized or metalized steel structures

Suitable for immersion with high resistance in freshwater, saltwater, wastewater or a saline environment

Single pack, designed to provide an excellent performance applied as stand-alone and do not need to be top-coated

Moisture cured, allows application regardless of the dew point

Designed for application directly to surfaces with clean tight rust without any loose or flaking materials

Low VOC

Excellent adhesion performance without abrasion on all metals including stainless steel, aluminum and weathering steel (Corten steel)

Ease of application either in a workshop or on-site

Applicable with standard painting equipment

Process without metal distortion

Ability to be welded

Recommended by the American Galvanizers Association (AGA)

Meets DEF STAN 02-713 combustion toxicity test

Meets the performance requirements of ASTM A-780

Complies with the composition and performance requirements of SSPC-SP20 TYPE II LEVEL 1

Zinc dust meets or exceeds the requirements for ASTM D520, Type III

Can be recovered by itself at any time without abrasion

Possibility of being covered with a suitable coating

STORAGE	CERTIFICATIONS AND APPROVALS
Keep in a dry area, between 5°C and 20°C (41°F to 68°F) Keep away from direct sun exposure Unopened pail shelf life: 24 months Opened pail: Few months in standard storage conditions	MTQ and MTO certified (Ministry of Transportation Québec and Ontario, Canada) Recommended by the American Galvanizers Association (AGA) among other products, for complying with the ASTM A780 standard Hydro-Québec approval - SN31.101 (maintenance of electrical substations) Hydro-Québec approval - TET-LIA- N-SUP0012 (Towers maintenance) CFIA approval (The Canadian Food Inspection Agency)

RECOMMENDED USE

APPLICATION SURFACES	EXPERTISES
New and Existing Steel	Marine Environments / Boats / Barges / Docks
Weathered Galvanized Structures	Bridges / Foot Bridges/Dams
Stainless Steel	Electrical Communications Towers
Aluminum	Buildings / Roofs / Stairs / Ramps / Water treatment plants / Water towers
Weathered Steel (Corten)	Silo tanks / Food factories / Various structures
Copper	Military: Vehicles / Boats / Armored - Transport: Trucks / Trailers
Cast Iron and Aluminum	Paper mills / Chemical plants / Refineries / Mines

Contact our technical support 1-888-743-2046

PACKAGING FORMAT	SAFETY
2 kg (Format 946 ml / 1 US pint) 12 kg (Format 5 liters / 1.3 US gallons) Solvent: GalvanoI™ (1 liter - 4 liters - 20 liters)	Consult the safety data sheet before use Use adequate personal protective equipment in accordance with regulations

PERFORMANCE CHARACTERISTICS									
Drying and curing times Application of 5.0 mils (125 µm) wet				Characteristics					
		35°F (1.7°C)	77°F (25°C)	100°F (38°C)	Zinc Quantity	88% (± 2%) in the dry layer			
		50% relative humidity (RH)			Zinc Purity	± 99.995% purity			
Touch dry		1.5 hours	45 minutes	45 minutes	Ready for use	Single component			
Dry to handle		2.25 hours	1 hour	1 hour	Colour	Matt gray RAL # 7005 (not colorable)			
To recoat	Minimum	4 hours	3 hours	3 hours	Weight	2.50 Kg / dm ³ ± 0.1			
	Maximum	unlimited	unlimited	unlimited	VOC (solvents)	285 grams / liter (± 10)			
Fully cured		15 days	10 days	10 days	Flash point	52 °C (125.6 °F)			
The drying process varies depending on temperature and humidity Relative humidity during the application and drying: minimum 30% maximum 99%				Solvent			Galvanol™ (# 300037)		
				See below for other performance characteristics					
Minimum zinc thickness references	The thickness must be adapted according to the Galvanization Standard ASTM A123					Test name	Standard	Rust-Anode® Primer	Hot-dip Galvanized
	¹ Consult our chart for minimum thicknesses recommendation.					Evaluated by ASTM D 610 (rust) and ASTM D714 (blister)			
¹ Recommended minimum dry zinc thicknesses VS steel thicknesses						Cyclic Corrosion 10,000 hours	ASTM D5894-10 (cold periods)	Rust: none - Classified 10 Blister: none - Classified 10	Rust: none - Classified 10 Blister: none - Classified 10
Steel (mm)	3.2	6.35	12.7	19.1	25.4	Immersion corrosion (salt water) Results at 90 days	ASTM G44-99 (2013), Sodium chloride 3.5%	Blister: None - Classified 10 Rust: <0.03% - Classified 9	Blister: None - Classified 10 Rust: 33% - Classified 2
Steel (in)	1/8	1/4	1/2	3/4	1.0				
Dry Zinc (µm)	50 - 75	100 - 125	125 - 150	150 - 175	200 - 225	Steel samples used for tests			
Dry Zinc (Mils)	2.0 - 3.0	4.0 - 5.0	5.0 - 6.0	6.0 - 7.0	8.0 - 9.0	Surface preparation: SSPC-SP10 / NACE 2 / SA 2.5			
IMPORTANT: In an aggressive environment (see above) and / or immersion, contact our technical support before application						Products tested: Rust-Anode® Primer versus Hot Dip Galvanization Application of a single coat of Rust-Anode® Primer without any paint coating			
Performances in hot and cold weather	Between -62°C to +120°C (-80°F to +250°F)					Test name	Standard	Rust-Anode® Primer	
Application temperature (substrate)	From -5 °C to + 37 °C (23 °F to + 98 °F) The curing time may vary depending on the ambient temperature and the relative humidity					Pull-off adhesion	ASTM D4541	1775 PSI 12,24 MPa	
	Moisture cured, allows application regardless of the dew point. The surface must be dry.					Organic zinc rich	ONGC -1,181/CAN/CGSB-1.181-92	Conform	
Estimated performance	Provides a comparable lifetime to hot-dip galvanizing under the same exposure conditions					Abrasion	ASTM D4060-14 1000 cycles CS10, load 1000g	116 mg	
						Adhesion	ASTM D3359	5B	
Resistance in salt water and fresh water immersion	High level of resistance					Hardness	ASTM D3363	5H	
	See performance tests ASTM G44-99(2013)					Impact impactor 0,625 inches	ASTM D2794, 100 pounds	No cracks	
Resistance to Acids / Bases	PH of 5,5 to 12,5					Flexibility - Folding - Plasticity	ASTM D522, tapered mandrel 1/4, 180°	Resistance: 1/4 inch Elongation: 15%	
	No cracking – Allows the dilatation of the metallic support when bent					Combustion toxicity	DEF STAN 02-713	Conform	
High plasticity	See performance tests ASTM D522, tapered mandrel 1/4, 180°					UV	ASTM G154-12a	Little effect	
						Salt Spray	ASTM B117/ ISO 12944-6/7253	Excellent	
Weldability	A thin layer (40µm or 1.5 mils dry) can be welded without contaminating the weld (X-ray)					Slip Coefficient and Resistance to Tension Creep Resistance	Research Council on Structural Connections (RCSC) Specification for Structural Joints Using High-Strength Bolts		Meet Class A
	Can be covered with most paint products, if necessary (Avoid Alkyds) ex: Polyurethane or Epoxy (Avoid Alkyds)					Chemical Resistance / Immersion 30 days			
Duplex system *if necessary	We recommend applying the paint in a time window of no more than 24 hours after application. The recoating time may vary depending on the humidity, the temperature and the product applied					Diesel, Acetone / Urea		Blister: none Corrosion: none Adhesion: 100% Hardness: H	
	If the maximum recovery time is exceeded, apply a thin layer of 2.0 mils (50 µm) minimum of Rust-Anode Primer, and when dry, apply your paint					Gaz		Blister: none Corrosion: none Adhesion: 100% Hardness: 2H	
Conductivity	The dry film has an excellent conductivity, and the application by electrostatic is possible					Hydraulic Fluid (Skydrol)		Blister: very little Corrosion: none Adhesion: 100%	
	* Contact our technical support * Tests are required					Brake Fluid		Blister: none Corrosion: none Adhesion: 100%	
THEORETICAL COVERAGE						At 1 mil (25µm) dry "1354 Pi² / 12Kg or 125m² / 12kg"			
ASTM D2697 - Dry extract by volume 71%						Consult our calculation of required pails			
(for information only)						Consult our theoretical cover guide			
(for information only)						(for information only)			

SURFACE DECONTAMINATION (VISIBLE AND INVISIBLE CONTAMINANTS)
<p>Surfaces must be free from grease, cutting oils, drilling oils, or any other visible and invisible contaminants.</p> <p>Do not use Galvanol for surface cleaning. The use of products that leave no residue on the surfaces is required.</p> <p>SURFACE SALTS: In the presence of potentially and geographically salty environments, tests must be conducted.</p> <p style="padding-left: 40px;">Salt presence shall be below 7µg/cm².</p> <p style="padding-left: 40px;">If necessary, use CHLOR-RID® or HOLDTIGH® products. Any other products used must be approved in writing by Galvatech 2000.</p> <p>Following decontamination, proceed with the recommended surface preparation based on the substrate to be protected.</p>
NOTE
<p>In the case of an industrial, commercial or institutional project as well as in the presence of any special conditions (immersion, aggressive environment, saline) these data MUST BE adapted, contact our technical support 1 888 743-2046 or by email info@galvatech2000.com before application</p>
NEW OR EXISTING STEEL
<p>Remove contaminants before proceeding with surface preparation. (See "Surface Decontamination" section)</p> <p>The surface must be clean and free from friable rust, flash rust, mill scale, and corrosion (black iron oxide) that shall be cleaned to sound iron.</p> <p>Mill Scale: It must be removed by ABRASION or chemical stripping (ACIDS).</p> <p>Surface preparation:</p> <p style="padding-left: 40px;">(SSPC-SP3) Power Tool Cleaning – Small parts ***Counter to this specification, the mill scale must be removed.</p> <p style="padding-left: 40px;">(SSPC-SP7 / NACE 4) Brush-off Blast Cleaning – Indoor exposure</p> <p style="padding-left: 40px;">(SSPC-SP6 / NACE 3) Commercial Blast Cleaning – Outdoor exposure</p> <p style="padding-left: 40px;">(SSPC-SP10 / NACE 2) Near-White Blast Cleaning – Immersion</p> <p style="padding-left: 40px;">(SSPC-SP8) Chemical Stripping – All mill scale shall be removed.</p>
ALUMINIUM, STAINLESS STEEL OR COPPER
<p>The surface must be free of grease substances, dust, oxide, friable material or other contaminants</p> <p>There is no need to abrade surfaces when considered bare and clean</p> <p>After cleaning, apply directly when the surfaces are dry</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
EXISTING PAINT COATING
<p>Perform adhesion testing on the paint remaining after cleaning (ASTM D3359)</p> <p>Perform a test on a small area to ensure products compatibility</p> <p>Never apply to bituminous coatings and aluminum paints</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
NEW HOT DIP GALVANIZATION OR METALLIZATION
<p>The surface shall be free of rust dust, friable material, oils, grease or other contaminants, including surface salts and the presence of zinc oxide in white powder or crust</p> <p>For freshly galvanized surfaces (0-1 year) Check for presence of passivating treatments on galvanizing (e.g., Chromating): "Chromating" refers to the treatment of galvanized parts to prevent the occurrence of wet storage stain. The presence of chromates or other passivating treatments is detected by using a solution of copper sulphate. (SSPC SP16)</p> <p>METALLIZATION: The first coat must be a mist coat diluted between 20-30% with Galvanol™ solvent to seal the surface porosities. (less than 25µm / 1mil wet)</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
EXISTING (OLD) HOT DIP GALVANIZATION OR METALLIZATION
<p>The surface shall be free of rust dust, friable materials, oils (cutting and drilling oils), greases or other chemical contamination including surface salts and the presence of zinc oxide in white powder or crust.</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>
CONCRETE
<p>Before the installation of galvanized steel to concrete you can apply a generous coat of Rust-Anode® Primer on clean concrete</p>
CASTINGS (ALUMINUM AND STEEL)
<p>The surface must be free of rust dust, brittle material, oils (cutting and piercing oils), grease or other chemical contamination</p> <p>Sandblast (SSPC-SP6), (SSPC-SP3 for small areas)</p> <p>Clean with compressed air, then apply directly</p> <p>Contact our technical support for more specifications 1-888-743-2046 before application</p>

APPLICATION METHODS - GENERAL INFORMATION

The product is ready to use for application, open the pail and mix at low speed until completely homogenized, do not use an automatic paint shaker

For drying and curing process to be functional, a minimum of 30% relative humidity shall be present during application until the coating is dry to handle

The application may require more than one coat depending on the dry film thickness of zinc required or the complexity of the design

Apply a stripe coat with a paintbrush on the welds, bolts, edges, hard to reach areas, and around of the interface plates, etc

The application must be carried out in maximum layers of +/- 5.0 mils (125 µm) wet per coat and use Galvanol thinner at a ratio of 4% up to 10%

Do not apply more than 8 mils (200 µm) wet per coat

Refer to our drying and curing time table for the application of a second coat

The excess thickness (> 15.0 mils) (375 µm) is to be avoided (eg: the hollow of a stiffener)

The use of a wet gauge is highly recommended

TOUCH-UP (facilities or/and on site)

At all times, if touch-ups are necessary, remove the contaminants then apply a generous coat with a paintbrush or a roller and/or a paint gun to, at least, reaching the same thickness as the surrounding layer

GRAVITY GUN, HVLP PRESSURE POT

Dilute 4 to 10% with Galvanol™ (pre-test recommended)

For gravity guns and pressure pots, we recommend using a needle of 2.0 to 2.5mm

Conventional spray gun, by suction feed are not recommended (Product too heavy)

Suitable for application by electrostatic gun (prior tests is recommended)

Clean the equipment properly after use

"AIRLESS" SPRAY APPLICATION

Dilute up to 5% with Galvanol™ if necessary (do a pre-test)

Pressure between 1200 and 1300 lbs

Fluid tips recommended for large jobs (e.g. 3-17, 4-21, 5-17)

Fluid tips recommended for small jobs (ex: 1-15, 2-13, 2-15)

Clean the equipment properly after use

APPLICATION WITH A BRUSH OR A ROLLER

Ready to use after being thoroughly mixed

Usually, no dilution is needed. However, it can be diluted with the Galvanol™ to ease the application (20% maximum dilution)

The time between coats will depend on the ambient temperature and relative humidity

On average, we can expect a dry thickness of 2 mils (50µm) per layer. Over thicknesses could increase the drying time and are not recommended

The use of a natural bristle paintbrush is recommended

DISCLAIMER

The Rust-Anode® Primer is not designed to be applied in an excess thickness of more than 15.0 mils dry (375 µm) and shall be applied in layers of +/- 5.0 mils (125 µm) wet

Over thicknesses may cause small cracks or a granular effect on the treated surface. In order to not affecting the quality of the protection as well as its aesthetic, it is necessary to perform touch-ups

For dilution, the use of the GalvanoIMC (#300037) as thinner is the only product approved. All other products will result in a fatal effect on the chemical composition of the product

Paint equipment can be cleaned with any gun washer solvent as long as it does not leave a residual factor

The information contained in this document is not exhaustive. Ensure to also consult the material safety data sheet of the product as well as to follow any application protocol or other specific instructions that may be issued by Galvatech. Anyone using the product in a manner other than that recommended (without prior written confirmation from Galvatech as to the suitability of the intended method of use), is being exposed to damage to properties or persons and does so at his own risk. All our recommendations or product statements are correct to the best of our knowledge, but Galvatech cannot guarantee neither the quality or condition of the application surface nor the other factors in the use and application of this product that may affect its performance. Accordingly, unless confirmed in writing by Galvatech, any warranty as to the performance of the product or the achievement of specific results is expressly excluded. Galvatech will not be liable for any loss or damage incurred in connection with storage or use of the product not in accordance with the instructions issued by Galvatech. All other warranties or representations, express or implied, by law or otherwise, including, without limitation, any implied warranties of merchantability or fitness for a particular purpose, are hereby expressly excluded. The information contained in this document is subject to change based on the evolving knowledge of the product and any improvement thereof. It is the responsibility of the user to check with a representative of Galvatech that it has the current version of this technical data sheet and of the material safety data sheet before using the product. All sales are subject to our [terms and conditions of sale](#), available on our website or from a representative of Galvatech.