

RUST-ANODE® DATA SHEET (November 2010)

Product and registered trademark of Bio-Protect SA, Belgium: www.rust-anode.com

PRODUCT DESCRIPTION

Rust-Anode® is a cathodic protection easily applied like single-component paint but providing rust protection identical to hot galvanization.

Rust-Anode® is a zinc-rich process (containing approximately 96% zinc in the dry coat).

The product is ready to use.

It may be applied with a brush, roller or gun.

Rust-Anode® corrosion protection provides an estimated life expectancy equal to or greater than hot galvanization.

CHARACTERISTICS

- Zinc quantity: $\pm 96\%$ (by weight) pure zinc in dry coat (DFT = Dry Film Thickness)
- Zinc purity: $\pm 99.995\%$
- Ready to use: Single-component coating
- Colour: Flat light grey
- Safety: Non-toxic and non-flammable when dry
- Specific weight: $3.15 \text{ Kg/dm}^3 \pm 0,1$
- Volatile organic compounds (VOCs): 300 grams/litre (meets California environmental standards)
- Solvent: Natural

PROPERTIES

– May be used on previous coats of Rust-Anode®	
– May be used to renew the cathodic protection of a previous hot galvanization coat or previous coats of Rust-Anode®	
– High resistance to corrosion, abrasion and impact	
– Applications	: 40 to 80 μm (1.6 to 3.2 mils) (dry) DFT or two coats up to 160 μm (6.4 mils) DFT
– Resistance to cold/heat	: From -80°C to $+200/250^\circ\text{C}$
– Application temperature	: From -10°C to $+40^\circ\text{C}$ (different setting times)
– Theoretical coverage	: $7.05\text{m}^2/\text{kg}$ at $40\mu\text{m}$ (1.6 mil) DFT
– Practical coverage	: $6.20\text{m}^2/\text{kg}$ (with spray gun) at $40\mu\text{m}$ (1.6 mil) DFT
– Resistance to saltwater	: Exceptionally good; duplex system is recommended
– Resistance to acids/bases	: May be applied in an atmosphere of 5.5 to 12.5 pH

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- High plasticity	:	No cracking: permits expansion of metal medium
- Weldability	:	A coat up to 40 µm (1.6 mil) may be welded without affecting the weld (x-ray).
- Estimated life expectancy	:	Similar to hot galvanization (depends on DFT)
- Conductivity	:	Dry film has very good conductivity.
- Salt mist	:	ISO 7253 (4,200 hours)
- Mandrel bend test	:	ASTM D-522
- Flexibility	:	CGSB, 1-GP-71, Method 119.5
- Organic zinc-rich coating	:	CAN/CGSB-1.181-99
- Meets requirements and specifications of	:	<ul style="list-style-type: none"> • BELGIUM BICP4525 • CORI certification • DND certification • Health Canada certification • Hydro-Québec certification • MTQ certification

USAGE

a) Surface preparation:

- Rugosity degree: Ra 12.5 µm (0.5 mil)
 - Surface must be free of oil, grease and other chemical contaminants (SSPC-SP1).
 - Surface must be free of dust.
 - Surface humidity must not exceed 90%.
 - Substrate temperature must be a least 3°C above the dew point.
 - **Normal** application temperature is between -5°C and +40°C.
 - Sharp edges and drilled holes must be smoothed.
1. **New steel (ideal):** remove scale by sandblasting or grit blasting (SSPC-SP6), and smooth sharp edges on cut angles and drilled holes (minimum rugosity degree = 12.5 µm (0.5 mil)).
 2. **Chemical option:** acid clean and then water rinse (rotating nozzle) at 3,000 to 5,000 pounds of pressure.
 3. **Rusted steel with or without existing paint film:** strip the surface at high pressure (rotating nozzle) (SSPC-SP12-WJ4) (5,000 lbs. minimum). If there is corrosion (black iron oxide), mechanically remove it. **Never apply Rust-Anode® to bituminous or aluminium-containing products.**
 4. **On new or previous galvanization (or spray welding):** Rust-Anode® may be directly applied without any mechanical surface preparation. Previously galvanized or spray-welded surfaces should be pressure-washed with water at 3,000 to 5,000 lbs. of pressure (rotating nozzle) in order to remove any surface contamination (zinc salts). Rust-Anode® will renew the previous zinc coat and re-establish continuous cathodic protection. New galvanization or spray welding damaged by drilling, oxygen cutting or welding will regain complete cathodic protection by applying a coat of Rust-Anode®. On galvanized surfaces with new welds, brushing and an application of Rust-Anode® are ideal (recommended: two coats of 40-60 µm - 1.6 to 2.4 mils). **Before any application, all surfaces must be free of grease, oil and other contaminants.**

b) Application procedure:

Important comments:

- **Product is ready to be applied with a brush or roller.**
- **Never shake sealed can in order to avoid the formation of hydrogen.**
- **Due to Rust-Anode® density, mixing with a flat paddle or mixer is recommended before use.**
- **Never use Rust-Anode® near bituminous or gasoline-derivative products.**

1. **Open can carefully:**

If there appears to be a bulge in the lid, hydrogen, a reconstitution product, may be present, so the can must be opened with caution in order to allow the hydrogen to escape. The formation of hydrogen does not affect product quality in any way, and the product may be used after proper mixing.

2. **The product is ready to be used with a brush or roller.** *An application of two coats is preferable, with one to 24 hours between coats depending on ambient humidity and temperature, to obtain a minimum dry coat of 80 µm (dry thickness = DFT).*

Brush/roller : Ready to use
Covers 6.20 m²/ kg per 40 µm coat (1.6 mil) (dry measurement = DFT)
Rust-Anode® may be diluted with a little Suspension Fluid to obtain desired viscosity.

Spray gun : Dilute by 2 to 4% max. with Suspension Fluid (or more depending on application method).
Theoretical coverage: 7.05m²/kg at 40 µm (DFT)
Practical coverage: 6.20 m²/kg per 40 µm coat DFT

3. **Drying and setting time:**

- *Dust-free dry after 10 minutes (variable depending on film thickness and ambient humidity and temperature)*
- *Dry to the touch after one hour (variable depending on film thickness and ambient humidity and temperature)*

4. **Second coat:**

- *Ready for a second coat of Rust-Anode® after one to 24 hours*

5. **Recommendations:**

- *A stripe coating is recommended for edges, bolts, contours of bolted plates and openings between non-continuous welds.*
- *We recommend using Rust-Anode® with no other finishing paint to renew the cathodic protection and/or make repairs directly to the previous coat of Rust-Anode® (only after washing with fresh water to remove zinc salts and chlorides. The previous and new coats will bond, guaranteeing renewed cathodic protection. This is also true for renewing previous galvanization.*
- *We recommend using the mist coat technique before applying total desired thickness.*
- *Clean equipment with Rust-Anode® Suspension Fluid.*

LIFE EXPECTANCY:

Life expectancy is equal to that of hot galvanization.

PACKAGING

- 3.5 kg and 12 kg cans

STORAGE

*Keep cans tightly closed in a dry location between 5°C and 20°C in the original sealed packaging.
Packaged product life expectancy under standard storage conditions: **unlimited***

NOTE

These data are provided in good faith as information only. They do not signify the liability of the manufacturer, which has no way of controlling product application.