RUST-ANODE®
TECHNICAL DATA SHEET
(April 2004.)

Produced by the Bio Protect Company from Belgium www.rustanode.com

GENERAL INFORMATION

Rust-Anode® is a cathodic protection applied as a one-component cold zinc coating.
Rust-Anode® is an organic zinc rich coating; containing about 96% zinc in the dry layer.
The product is ready for use.
Can be applied by brush, roll or any spray technique.
Lifetime expectation is equal to the lifetime expectation of the hot dip galvanisation.
Rust-Anode® can be used as primer or as duplex system with a compatible topcoat.
References since 1954

CHARACTERISTICS

- Zinc quantity : about 96% (weight) of pure zinc in the dry layer (DFT)
- Zinc purity : about 99.995% purity(obtained by atomisation process)
- Ready for use : one component coating
- Colour : light grey, matt finish.
- Security : Non toxic and non flammable when dry
- Specific gravity : 26.26 lbs/g
- VOC : 2.50 lbs/gallon

PROPERTIES

- Can be used as primer or as finishing coat on top of previous Rust-Anode® layer
- Can reload the cathodic protection of the old hot-dip galvanisation or reload previous Rust-Anode® layers
- Duplex system : Rust-Anode® can be over coated with compatible paints
- Application range : As primer 1.5 to 3 mill DFT or as 2 layer system up to 6.5 mill DFT
- High resistance to corrosion, abrasion and impact
- Resistance to cold / heat : From -40°F to + 392/482°F
- Application temperature : From (different curing times) -14°F to +104°F
- Theoretical coverage : 34.5 ft²/lbs at 1.5 mill
- Practical coverage : 30.3ft²/lbs at 1.5mill DFT
- Resistance to marine environment : Exceptional good, duplex system is recommended
- Resistance to acids / alkine : Can be applied in an Ph atmosphere range from 5.5 up to 12.5
- High plasticity : Without cracks – Allow the dilatation of the metal support
- Weld ability : Primer up to 1.5 mill can be welded without affecting the weld
- Lifetime expectation : Similar to hot dip galvanising (depending on thickness of dry layer)
- Lifetime expectation duplex : Similar to hot dip galvanising with duplex system
- Conductivity : Dry film has good conductivity

APPLICATION

a) Starting procedure:

Surface preparation:

-Cleanliness standard Sa 2 ½
-Roughness degree Ra 0.5 mill
-Free of all oil and grease or other chemical contamination

-Free of all dust
-Maximum surface humidity 90%
-Substrate temperature must be minimum 5°F above dew point
-Normal application temperature between 23°F and 104°F

1. **Ideal:** Grit blasting, intense steel brushing or UHP water blasting and a water washing (cleanliness standard Sa 2 1/2 and roughness degree Ra 1.5 mill + 2 layers of Rust-Anode® each 1.5 to 2.5mill

2. **On hot laminated steel or black sheets:** On clean, dry and non-greasy support, the result will be good. However, calamine (carbon deposit) could come loose with the time and lift up the coating. Therefore it must be removed by grit blasting or by UHP water blasting plus abrasive.

3. **On cold formed steel:** Poor adherence due to the high quantity of zinc dust into Rust-Anode®. It is therefore necessary to remove all grease from the surface and to grit blast or UHP water blasting or let it lightly rust in order to obtain a rough surface. You can also grind the surface with an abrasive disk.

4. **On lightly rusted part:** Brush the rust completely to eliminate all the loose particles and apply a water or steam cleaning to remove rust dust.

5. **On old paints:** It is not necessary to apply Rust-Anode® on the total surface but just retouch the rusted places. (Never on tarred products or paintings containing aluminium) Rust-Anode® is a cathodic protection and therefore will be effective as such in direct contact with the steel surface. On old paint the Rust-Anode® will act as a paint or passive coating and gives no cathodic protection.

6. **On new and old hot dip galvanisation or metalisation:** Rust-Anode® can be applied directly without mechanical surface preparation. Old hot-dip galvanisation or old metalisation should be washed with water to remove all surface contamination (zinc salts) it will reload the existing old zinc layer restoring the continuity of the cathodic protection. New hot-dip galvanisation or metalisation broken by drilling, cutting, or welding will be fully cathodic protected. For welding, brush correctly and before applying Rust-Anode® (recommended in 2 coatings of 40-60µm). All surfaces should be free of all oil, grease or other contamination.

b) <u>Application procedure</u>:

***Important remarks**:*

** The product is ready for use by brush or roller.*
****** *Never shake the pot when closed in order to avoid formation of hydrogen.*
** The density of Rust-Anode® is such that you need to mix it with a mixing system until a homogenous mixture is obtained.*

1. Open the can carefully.

   A bulbous lid may indicate presence of hydrogen (a reconstitution product); in this case the can should be opened carefully to allow the hydrogen to escape.

   Formation of hydrogen does not change the quality of the product, which can be used once it has been mixed accordingly.

2. The product is ready for use by brush or roller. Apply best by tempering two layers (with interval of 12 to 24 hours) in order to obtain a layer of min. 3mill (dry layer= DFT)

Brush/Roller	:	Ready for use Covers (when dried=DFT) 30.3 ft²/lbs at 1.5 mill If necessary during application, Rust-Anode® can be diluted with a little of Rust-Anode® Suspension Fluid in order the recover its initial viscosity
Spraying	:	Air supported spraying, thin out with 2 to 4% max. (volume) of Rust-Anode® Suspension Fluid. Airless spraying, thin out with 2 to 4% max (volume) of Rust-Anode® Suspension Fluid. Theoretical coverage 34.5ft²/lbs at 1.5mill

Practical coverage (low pressure) 30.3ft²/lbs at 1.5mill

Remarks:

** Rust-Anode® is used as well as primer as top coating and accepts all compatible paintings for decoration except these containing organic solvents, such as Xylene, Toluene, Butyl and Acetate. This duplex system increases considerably the life time expectation.*

** We recommend the use of epoxy paintings in water phase such as Technipox, Technicure or acrylic paintings in water phase such as Techniroc Duo Aqua, Permacryl, Leviscryl, applicable after a drying period of 48 hours (recommended) or tests.*

3. Drying and curing time:

   Dust free after 10 min
   Dry to handle after 1 hour

4. Second Layer

   Ready for 2nd coat of Rust-Anode® after1 hour
   Ready for compatible sealer and/or topcoat after 48 hours (recommended) depending on ventilation conditions, temperature and humidity, or to be tested.

5. Recommendations

-We recommend applying a complete water saturation (soft water) of the finished dried layer of the Rust-Anode® in order to obtain an instant chemical hardening of the surface giving a longer lifetime especially when used in immerged applications as unique system.

-We recommend to use Rust-Anode® without top coating to be able to reload the cathodic protection and / or to do repair work directly onto the old Rust-Anode® layer with only a water (soft water) blasting to remove the zinc chlorides or zinc salts. The old and new layers will "blend" into each other and guarantee the reloading of the existing cathodic protection. This is also the case when renewing old hot dip galvanisation surfaces.

-We recommend using the mist coat technique when spraying.

6. Cleaning brushes and instruments with « Rust-Anode® Suspension Fluid » or White Spirit.

LIFETIME EXPECTATION

Lifetime expectation is equal to the lifetime expectation of hot dip galvanising (see graphic)

PACKAGING

Cans of 7.7 lbs and15.4 lbs 2.2 lbs only on request

STORAGE

Best to keep the containers in a dry store between 40°F and 70°F in the original unopened containers.
Shelf and pot lifetime (unopened containers) unlimited.

NOTE

The information in this data-sheet is given in good faith and to the best of our knowledge, but is subject to revision without prior notice. Since condition of application and service ùay be beyond our control, no liability can be accepted on basis of this data.
