

ROVAL Series Paint Specifications

1. Scope of the application

This guide covers ROVAL series for use on steel or galvanized surfaces either in factories or construction site.

2. Purpose of use

- (1) Anti-corrosion protection for steel
- (2) Restoration of galvanized surfaces
- (3) An alternative to hot-dip galvanizing
- (4) Renovation of galvanized surfaces

3. Application Directions

(1) Conditions

Do not apply in the following conditions.

- A) Temperature below 5 °C and humidity above 85%.
- B) Condensation exists on the surface.
- C) Raining, snowing or inclement weather is expected.
- D) Stormy or dusty.

(2) Inspection

Carry out regularly inspections and keep records in accordance with followings.

- A) Surface: must be dry and free of any contaminants.
- B) Coating: must be applied four(4) hours after the surface preparation.
- C) Dry film thickness: measure at least 4 points randomly and all the results should be above 80µm

(3) Handling and others

- A) Protect film from impact damage.
- B) Repair damaged or thin area with the same ROVAL paint.
- C) Protection such as packing should be done if necessary
- D) Apply in an open ventilated area and avoid inhalation.
- E) Keep away from heat, sparks, electrical equipment, and open flame.

4. Most important factor

ROVAL products has to be applied DIRECTLY to metal surfaces.

The direct contact between the zinc and the metal surface will result in cathodic reaction.

Never use primers.

Primer will compromise the performance of ROVAL products.

Important points for application




- 1) Proper surface preparation
- 2) Adequate agitation of products
- 3) Sufficient film thickness

5. Product selection

Select the product from the chart below in accordance with the anti-corrosive performance and surface color. Select EPO ROVAL if you apply other manufacturer's topcoat paint.

The film of ROVAL series weathers the same as hot-dip galvanized materials by exposure.

This characteristics makes repaired unapparent.

Product name	Product features
 ROVAL	Zinc content: 96% Color: Gray Equivalent anti-corrosion performance to hot-dip galvanizing. Comply with ASTM A780
 ROVAL SILVER	Zinc content: 83% Color: Silver Finishes in a color similar to hot-dip galvanizing.
 EPO ROVAL	Zinc content: 96% Color: Gray Possible to apply top coat from other companies. Comply with ASTM A780

[Characteristics of Series]

- (1) **ROVAL + ROVAL** (Color: Gray)

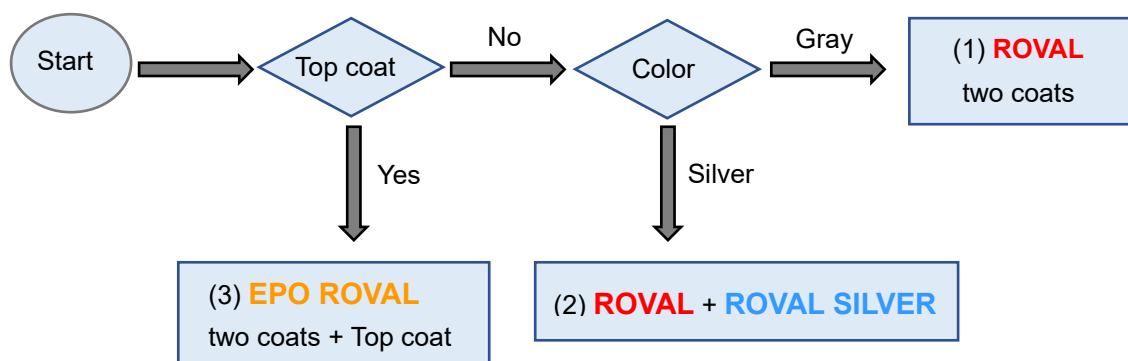
This system brings you the highest anti-corrosion performance along with the lowest cost among other systems.

- (2) **ROVAL + ROVAL SILVER** (Color: Silver)

ROVAL SILVER contains zinc with aluminum pigment which makes surface color silver. Its anti-corrosion performance is far superior to other conventional paints.

- (3) **EPO ROVAL + EPO ROVAL**

EPO ROVAL can be coated by other top coat paints which are compatible with galvanized surfaces. The anti-corrosion performance is the same as ROVAL + ROVAL.



6. Coating Specifications

(1) **ROVAL + ROVAL**

(2) **ROVAL + ROVAL SILVER**

	Theoretical Coverage (g/ m ²)	Practical Coverage *1		Coating Interval (min)	Dry film Thickness (μm)
		BRUSH (g/ m ²)	SPRAY (g/ m ²)		
Surface Preparation	Refer to [7. Surface preparation]				
(1 st coat) ROVAL	250	300	325	30~60	40
(2 nd coat) ROVAL or ROVAL SILVER	250	300	325		40
Total	500	600	650		80

Note: When applying only ROVAL SILVER two coats, ensure sufficient film thickness. (more than 80μm)

(3) **EPO ROVAL + EPO ROVAL + Top coating** (other companies)

	Theoretical Coverage (g/ m ²)	Practical Coverage *1		Coating Interval (min)	Dry film Thickness (μm)
		BRUSH (g/ m ²)	SPRAY (g/ m ²)		
Surface Preparation	Refer to [7. Surface preparation]				
(1 st coat) EPO ROVAL	250	300	325	30~60	40
(2 nd coat) EPO ROVAL	250	300	325	24 hours	40
Total	500	600	650		80
Intermediate coat	Use modified epoxy paint for galvanized surfaces. *2				
Final Coat	Use urethane or fluorine paint (Refer to manufacturers guide)				

*1 Practical coverage includes 20% of loss for brush application, and 30% for spray application

*2 Different types of paint may be exposed to a serious bubble phenomenon, please do mist treatment.

Note: Do not use Alkyd, phthalic, oil-based paints, because they will case the film peeling off.

Consider EPO ROVAL film as galvanized surface, ask the manufacturer about the compatibility with galvanized surface.

7. Surface preparation

Surface preparation greatly affects the anti-corrosion performance.

ROVAL products requires direct contact between the zinc dust in the film and the metal substrate for optimum performance. Without direct contact, no galvanic action can occur. Since the surface must be dry and free of any other paint and contaminants, employ adequate methods to remove them thoroughly.

- (1) Salt: Use high pressure washing to remove salt deposits. (50mg/ m² or less)
- (2) Oil: Wipe off perfectly with solvent rags.

	Steel surface		Galvanized surface	
Purpose	Hot-dip-galvanizing alternative	Long-term rust prevention	Improved anti-corrosion performance of new galvanized surfaces. Renovation of old galvanized surfaces.	
Surface condition	Mill scale, Red rust, Old paint film, Welded part		Red rust, Old paint film, Welded part	No red rust (Only white rust)
Surface preparation	ISO 8501 Sa2 1/2 *1 Remove all the rust and mill scale by sandblasting	ISO 8501 St3 Use a power tool to expose a clean metal surface.	ISO 8501 St2	ISO 8501 St2 Use a hand tool to remove white rust.

*1 Confirmation method: Compare the surface with standard photograph by visual observation.

8. Adequate agitation of products

Because ROVAL products contains a lot of powdered zinc, the contents may settle at the bottom of the can. Use a power paint mixer to obtain uniform density.

9. Coating method

ROVAL series are an easy-to-handle, single liquid type compound. It does not require any mixing like two liquids and has no limitation of pot life.

The rest of the paint can be kept in a closed container.

Brush / Roller	Dilution is not required. Only when the product thickens, use thinner within 5% of paint weight.		
Conventional spray	Use Gravity feed spray gun. Nozzle size: 1.5 ~ 2.0 mm, Pressure: 0.3 MPa Paint strainer: #100 Dilution: 0 ~ 5% (ROVAL , EPO ROVAL) 5 ~ 10% (ROVAL SILVER)		
Air-less spray	Tip size: above 0.017 inches (e.g. 517) Pressure: above 20 MPa, Gun filter: #50 ~ 60 Dilution: 0 ~ 5%		
Type of thinner	ROVAL THINNER (or aromatic thinner like Xylene)	ROVAL	ROVAL SILVER
	EPO ROVAL THINNER	EPO ROVAL	

10. Coating interval

Apply second layer after the adequate cure time.

Recoating too soon may result in premature failure due to solvent entrapment in first coat.

[Dry Film Evaluation]

Push the thick part of the film strongly with a finger. Make sure there is no impression of finger prints or move of the layer. Rub the surface repeatedly with a fingertip, make sure there is no impression or finger mark.

Temperature (°C)	5	10	20	30	40
Recommended Interval (min)	60	40	30	10	5

*Based on the condition: thickness 40μm, humidity 65%.

*Top coating on EPO ROVAL: Allow 24 hours cure time at ordinary temperature.

11. Get more information

You can get more information from the Web site.



Watch a video how to use ROVAL



Web site (How to use)

<https://rovalworld.com/how-to-use>

ROVAL CORPORATION (JAPAN)
SHANGHAI ROVAL ZINC RICH PAINT CORPORATION
ROVAL (SHANGHAI) SALES & TRADING CORPORATION

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