

Technical information

# Drall® DRALL

Zinc-Rich

- Dry under normal temperature
- Only coat once

Environmental-Friendly



Completely Chrome-Free



Nihon Ruspert Co.,Ltd



# DRALL

## Thin Film, Superior Anti-corrosion Zinc-Aluminum paint

### Dry under normal temperature

### Only coat once

The normal zinc-rich paint which needs to do coating twice to guarantee a high anti-corrosion performance results in bad operation efficiency.

DRALL' s essential ingredients---zinc and aluminum flakes achieve the initial purpose of superior anti-corrosion performance with only 30μm film thickness for once coating. Thus, DRALL improves the efficiency of operation and realizes various applications.

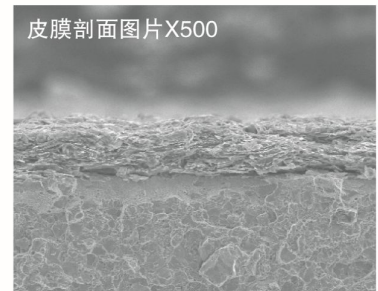
#### Superior Anti-corrosion



Besides the sacrificial anti-corrosion effects of zinc, aluminum also suppresses the oxidation of zinc through chemical reaction and forms stable film.



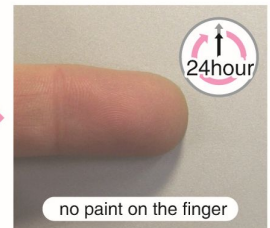
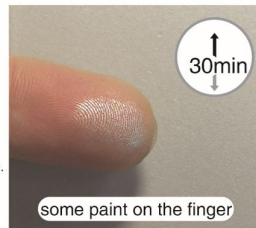
The resin is the hybrid type of Alkyl silicate (inorganic) and epoxy resin (organic). Its strong binding effect and barrier effect reduce the consumption of zinc.



#### Fast Dry

Dry under normal temperature finger touch to check after an hour.

※Drying time is different due to season and climate.



#### Working efficiency

Because DRALL is single type liquid and has little metallic precipitate, it is easy to stir the liquid at the beginning of operation. Its low viscosity ensures easy coating.

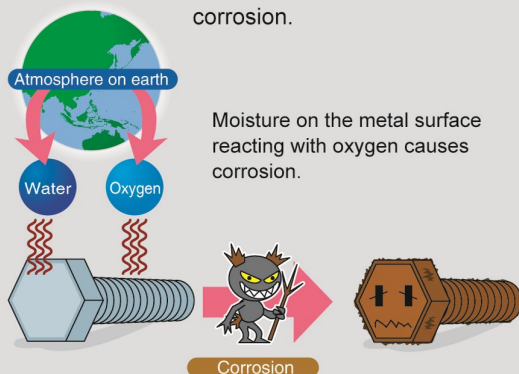
#### Reduction of cost

Because the coating amount is 200-250g/m<sup>2</sup>, cost can be reduced and operation time can be shortened.

## How corrosion occurs?

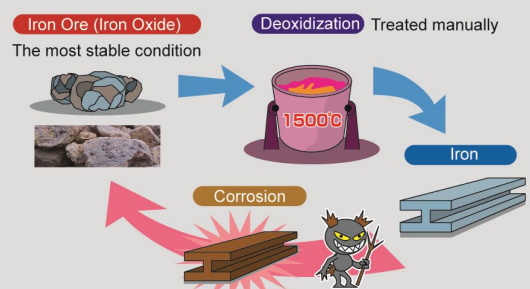
### 【 Mechanism of Rust 】

Water and oxygen are the reasons of rust. The natural rain and dew sticking on the iron surface causes chemical reaction or electric reaction which is the reason of corrosion.



### 【 Reasons why Iron Rusts 】

Metal is deoxidized from ore which is oxide or sulfide and unstable thermodynamically. Therefore, it is easy to be oxidized back to the stable iron oxide, the whole process of which is called corrosion.



Corrosion is the oxidization of iron with time passing by.



## Usage

- 1 The touchup of products(screw, nut)  
【 Repair flaw after the treatment of LAFRE D and LAFRE 】
- 2 The repair of the rusted parts.
- 3 The anti-corrosion treatment of the section and welding parts.
- 4 The repair of the galvanized steel sheet section.
- 5 The repair of the corrosion parts after hot dip galvanizing.

## Paint Description

Items	Content
Resin	The hybrid of alkyl silicate and epoxy resin
Main composition	Zinc (77%), Aluminum (8%)
Package	Single liquid type
Color	Silver
Specific Gravity ( 20℃ )	1.40
Non-volatile component	52%
Standard coating amount	200-250g/m <sup>2</sup> (Coating Once)
Standard film thickness	Wet 90 μ m (dry 30 μ m )
Drying time	Finger touch check :30-60min
Ignition	28℃
Classification of dangerous material	4 type 2 <sup>nd</sup> oil class

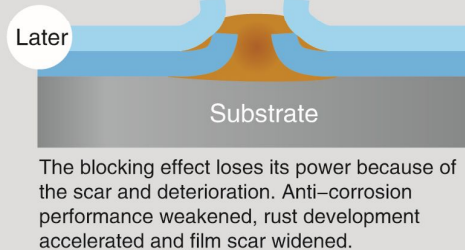
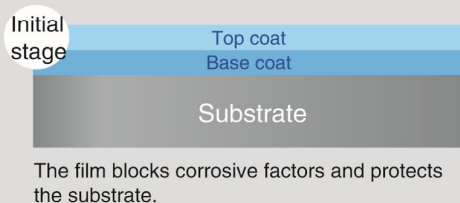
## Product Introduction

Painting Method	Spray	Brush
Introduction	 420ml	 1kg      5kg      20kg
Painting Area	1~1.5m <sup>2</sup> /bottle(including 20%loss)	4~5m <sup>2</sup> /kg(including 20%loss)
Application	Brush and roller are not applicable due to the product shape.	Difficult for spray and small area

## Corrosion Generation and DRALL Effects

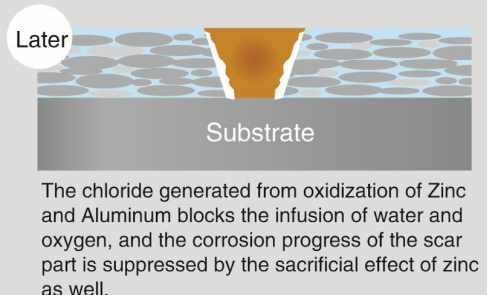
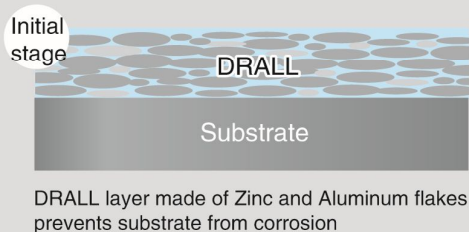
### General Painting

Blocking effect



### DRALL Effect

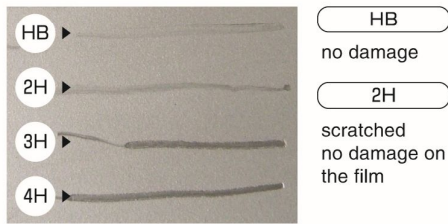
Zinc sacrificial effects



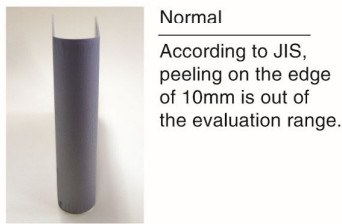
## Performance Tests

### Film performance tests

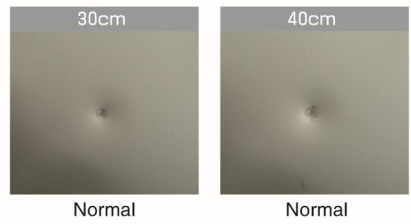
#### Pencil Hardness Test (damage)



#### Bend Test(8mm x 180° bend)



#### Impact Test(DuPont type test 500g R=1/2inch)



※ The pencil hardness test, bend test, and impact test are based on JIS K 5600 standard.

#### Heat Resistance Performance

Heat under 250°C for an hour

Salt Spray Test	Combined Cycle Corrosion Test
After 1000 hours	after 100cycles
Red rust not occurred	Red rust not occurred

※ Yellow discoloration occurred, but film performance remains the same.

#### Exposure Test



#### Electric resistance

##### Test Method

Place two 10 x 70mm aluminum foil electrodes 20mm away from each other on the sample. Load 5kg and apply 9 voltage on these two electrodes, measure the resistance value by using circuit tester.

##### Test Result

$7.0 \times 10^3 \Omega$   
The conductivity is better than the usual resin film, so it is applicable to earth connection.

### Promotion Test

Salt Spray Test JIS-Z-2371	
After 500 hours	after 1000hours
Red rust not occurred	Red rust not occurred

Combined Cycle Corrosion Test	
after 50cycles	after 100cycles
Red rust not occurred	Red rust not occurred

※ The cold rolled plates(70 x 150 x 0.8) for tests are spraypainted after sand blast.(film thickness 30μm)

### Touchup Performance

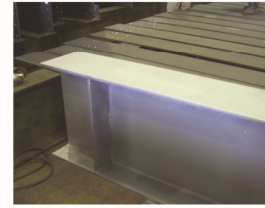
After tightening the bolts and nuts that have treated DISGO on them, use DRALL to repair the scars, and then check the results.

DRALL Repair	SST	Low-temperature	Low-friction	Black
Repaired	1000hrs			
Not Repaired				
		normal	normal	normal
		little red rust	little red rust	little red rust

※ About DISGO treatment, please visit our homepage or contact us directly.

## Application Examples

### Iron Substrate Parts



### Exterior Pillar



Repair Place



Rust Removal

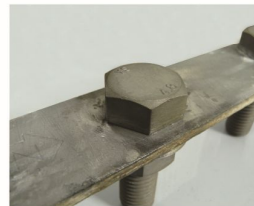


Paint Work

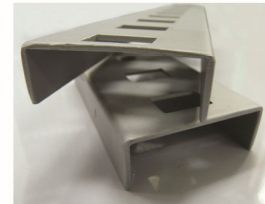
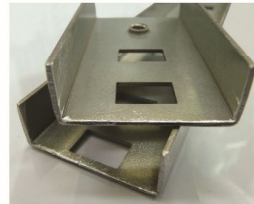
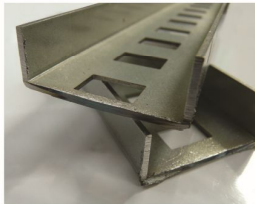


Repair Finished

### Rusted Parts



### Zinc Electroplated Steel Plates • Cutting Plane



## Substrate Adjustment

Like general painting process, substrate adjustment as the first step shouldn't be skipped. Paint on the old film's protrusion and peeling will not prevent the substrate from corrosion. Oil and filth remained on the old film will impair the adhesiveness.

To repair products by using DRALL needs to adjust the substrate first with reference to the following.

Type	Condition of the Surface	Method	Subjects
Type 1	Old film, rust, mill scale completely removed Iron substrate completely exposed	shot blast sand blast	iron, rusted after zinc electroplating
Type 2	Severely rusted surface, use electrical or manual tools to expose the substrate	hammer, chisels etc	iron, rusted after zinc electroplating
Type 3	Partly rusted surface, film partly remains, substrate partly exposed	same as above	white rust occurred after zinc electroplating
Type 4	Old film's color changed, chalked, use wire brush to remove the powder and filth (substrate unexposed)	wire brush etc	zinc electroplating with perfect appearance

## Notes in Use

- Please remove the filth, water, oil and rust etc. on the surface
- If there is protrusion on the base film, please peel it before painting.
- Please don't overly paint to form excessively thick film.
- Because paint is subject to water, please seal the container tight at rest and after work.
- Please don't touch the film within 60min after painting.
- For long-time preservation, please air-tightly seal the container(lay the spray can on its side) and avoid direct sunlight and fire.
- Organic thinner like paint thinner, lacquer thinner etc. can all be used as solvent for cleansing.

## Brush/Roller Method

- 1 Please use the paint after mixing thoroughly with a spatula.

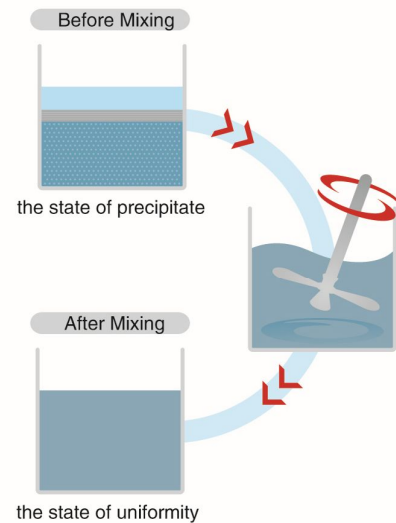


During the storage of paint, metal components will settle down and the paint will become uneven. Please use a spatula to dig the metal components up and mix the paint. Do the painting with well mixed paint.

- 2 DRALL is usually used without dilution. If the viscosity rises up and it becomes difficult to paint please dilute the paint as follows.

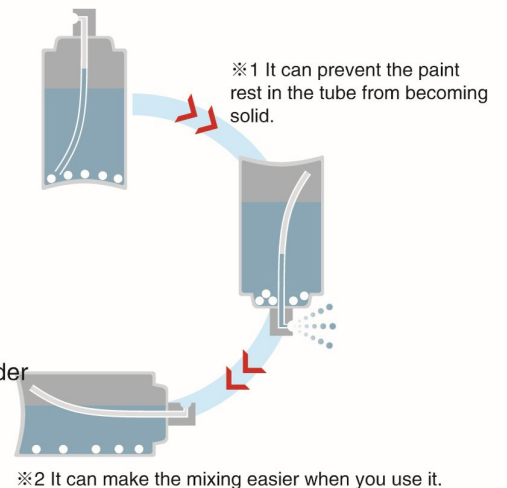
- (1)Paint thinner on the market( component: mineral spirit)
- (2)Xylene or toluene
- (3)SOLVESSO #100 (Solvent naphtha #100)

- 3 Please clean the brush as quickly as you can. If the paint becomes solid and sticks to the brush, it will be difficult to clean.



## Spray Method

- 1 Before the painting, please shake the bottle thoroughly. (Shaking above 30 times is necessary)
- 2 Keep the nozzle about 30cm away from the surface.
- 3 If spray for 30 seconds continuously, the air stress will go down and it may not spray smoothly. In this situation, stop for 30 seconds and it can spray normally.
- 4 The paint contains a large amount of zinc. If the painting process is at the end, make the bottle upside down, and spray out the rest paint in the tube. Wipe the nozzle cleanly. ※1
- 5 As for the storage of DRALL, please put the bottle sideways, keep it under 40°C, and avoid the sunshine. ※2
- 6 One year's pot life is standard. However, after mixing the paint thoroughly, if the paint can be sprayed, it can still be used regardless of the pot life.



- Dealing with the paint in a good air circulation place.
- Do not use fire or other high-temperature objects around the paint.
- In order not to make the paint and other solvent stick to skins or into eyes, please wear proper protection devices.
- If get paint on the skin, please completely wash off the paint with soap or any other detergent.
- If paint runs into eyes, please wash them with large amount of clean water right away and go to the doctors.



## Q&A



Q. What' s the color of DRALL?

A. DRALL only has silver color.

Q. What' s the zinc-rich paint?

A. The paint takes zinc flake as its main component and has super anti- corrosion performance.

Q. Is DRALL organic or inorganic?

A. DRALL is a hybrid type of silicate (inorganic) and epoxy (organic).

Q. Can DRALL be painted by spray method?

A. DRALL can be painted by both air spray and airless spray methods.  
 Air spray Tip diameter from 1.5mm to 2.0mm is recommended.  
 Airless spray The painting device for zinc-rich paint is also applicable.

Q. Can DRALL be painted twice?

A. Yes. After 60 minutes, touch the surface with fingers and make sure it is dry, and then you can do the second painting.

Q. How to check the film thickness?

A. When DRALL is wet, use wet film thickness meter and the result is above 90  $\mu$  m. When DRALL is dry, use electromagnetic film thickness meter and the result is above 30  $\mu$  m.

Q. Can the drying time be shortened?

A. Yes. DRALL can be dried at 80°C/30 min.

Q. Can DRALL be painted onto iron?

A. Yes. Make sure to remove all the rust and stain and do the substrate adjustment.

Q. What' s the notification when dealing with welding parts and rust parts?

A. Please remove the rust and spatter totally. As for the method of rust removal, please refer to TYPE 1-4.

Q. Can DRALL be painted onto hot dip galvanized or electro-platd layers?

A. Yes. Please make some adjustment to the substrate before painting.

Q. Can DRALL be painted onto galvanized steel sheet?

A. Yes. In order to make better adhesion, please do the substrate adjustment.

Q. Can DRALL be painted onto scale (oxidation film/black oxide)?

A. It may have some problems with adhesion. Rust removal is recommended. The minimum request is to adjust the substrate and eliminate the oil.

Q. Can DRALL be painted onto rust?

A. No. The anti-corrosion performance is not good at all. Please paint DRALL after substrate adjustment and rust removal.

Q. Can DRALL be used to treat casting parts or die cast parts?

A. Yes. Please do the TYPE 2 process and paint DRALL after eliminating the oil.

Q. Can DRALL be painted onto other general paint?

A. No. It has bad influence on adhesion.



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