



Extremely Thin, Superior Anti-corrosion  
Alloy Coating

# LAFRE®

Trademark registered



Coating Thickness 5 microns  
Baking at 200°C  
SST 2000 hours CCT 200 cycles

Environment-friendly



Complete Chrome-free

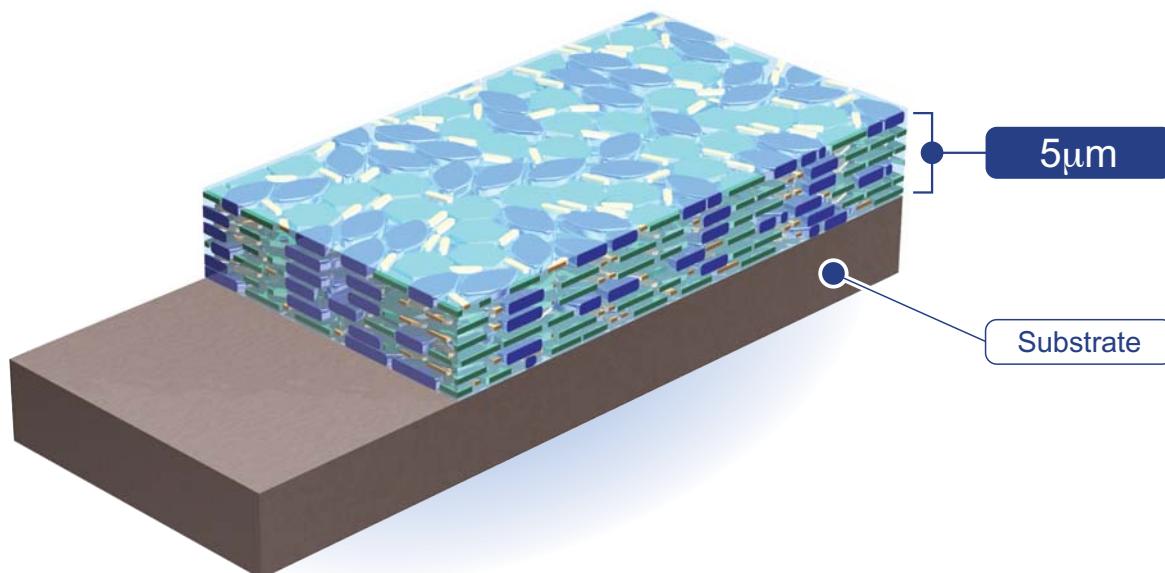


NIHON RUSPERT CO., LTD.



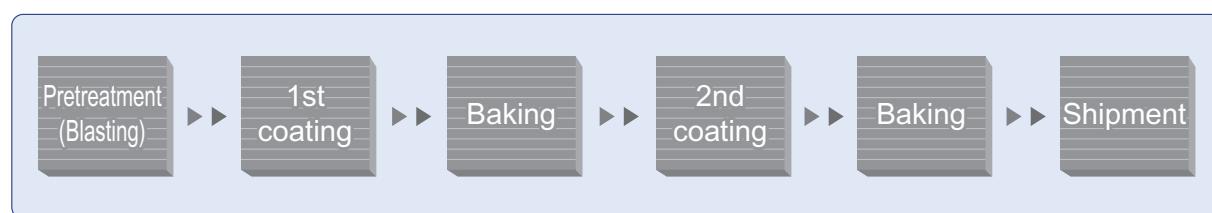
## ■ Coating structure and the corrosion prevention mechanism

The substrate is protected from corrosion by an inorganic coating with excellent adhesion including three kinds of metals of zinc, tin and aluminum, like as alloy coating.



2 coating is standard. However additional top coating is available according to the application.

## ■ Standard processing (Dip-spin method)



\* 2 coat are processed with same coating material

\* Available spray coating(1 coat) depending on the substrate configuration.



LAFRE® is the world first innovative rustpoof finishing technology developed by putting together our technologies that we have cultivated over 40 years, where the basic concept is environment-friendly and high-grade anti-corrosion performance with extremely thin coating.



## ■ Features

### 01 . Environment-friendly

Free from RoHS directive 6 hazardous substances such as lead, cadmium and mercury including hexavalent chromium and trivalent chromium.

### 02 . Extremely thin film, Superior Anti-corrosion

coating thickness of 5 $\mu\text{m}$  withstands SST 2000 hours.  
Stable tightening torque for bolts, etc. is ensured thanks to uniform and smooth coating.  
Free from paint stuffing even on complicated substrate.

### 03 . Low temperature processing

The baking temperature at 200°C protects the products from metallographic changes.  
Energy consumption is reduced by the low temperature processing, contributing to prevent greenhouse effect.

### 04 . Free from hydrogen embrittlement

Pickling and electrolytic processes are not necessary, which makes it invulnerable to delayed fracture of hydrogen embrittlement.

### 05 . Physical properties of the coating

Scratches or loss of the coating at tightening of bolts or drilling of screws is prevented thanks to high coating hardness and excellent adhesion.

### 06 . Additional top coating

Excellent overcoating adhesion allows usage for coloring purpose or primary coating for electro deposition. (Refer to the pictures on the last page.)

## ■ Coating Performance

Salt spray test (JIS Z 2371)

After 2000 hours (Free from red rust)



Combined cycle corrosion test (JASO M609-91)

After 200 cycles (Free from red rust)

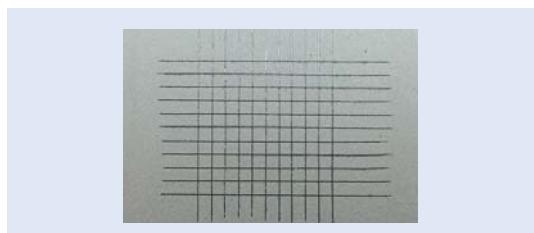


Hardness (Pencil scratch test)

8H (Damaged)

Adhesion (Cross-cut adhesion test)

No remark (Peel-off: 0/100)



### Examples of additional topcoat

[Coloring]



[Electro deposition]



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