Innozinc

4th Generation Zinc Plating Technology
Innovative Eco-friendly Plating

INNOZINC is a new paradigm of galvanizing method that dramatically reduces waste water and air pollutants by using KEMP's unique eco-friendly pre-treatment, inorganic plating and post-treatment, and combining the high corrosion resistance of metal paints with the advantages of economical and powerful properties of conventional plating.

■ Characteristics

1. High corrosion-resistant plating of SST 700hr ~ 1500hr.
2. Eco-friendly coating free of harmful VOCs and heavy metals using eco-friendly pre-treatment, inorganic plating, and eco-friendly post-treatment.
3. Less wastewater generation and no hydrogen embrittlement are ensured since no hydrochloric acid is used in the pretreatment process.
4. The surface is beautiful and made in the form of electroplating to be resistant to physical shocks such as scratches.
5. Full automation and customization are both possible, and the production costs are economical depending on the configuration of the equipment.
6. This product can replace electro galvanized plating, hot dip galvanized plating, and high corrosion resistant metal paint.

Coating thickness	8㎛, 15㎛ (average coating thickness)
1Cycle Time	At least 37min [varies depending on the size of the material]
Corrosion Resistance	SST 700hr ~ 1500hr
Coating method	Eco-friendly pretreatment-> Si zinc plating -> Activation treatment -> Eco-friendly post-treatment
Color	Silver

■ Mechanism

Coating film formed by reaction with moisture in the atmosphere

It is an ultra thin inorganic coating layer that does not cause any problem due to physical shocks and is resistant to ultraviolet rays and chemicals.

Chemical bonding layer of Si-O-Zn

Penetrated deep into the Si galvanized layer and formed by a continuous condensation reaction with zinc, it is a dense and solid network coating layer that prevent the infiltration of corrosion factors and improves corrosion resistance accordingly.

Si galvanized layer

In order to compensate the weak corrosion resistance of the existing electro galvanized, it electrochemically combines zinc with reactive Si, which improves the performance of zinc plating developed by KEMP during the plating process, stabilizes zinc, and protects the material with excellent performance.

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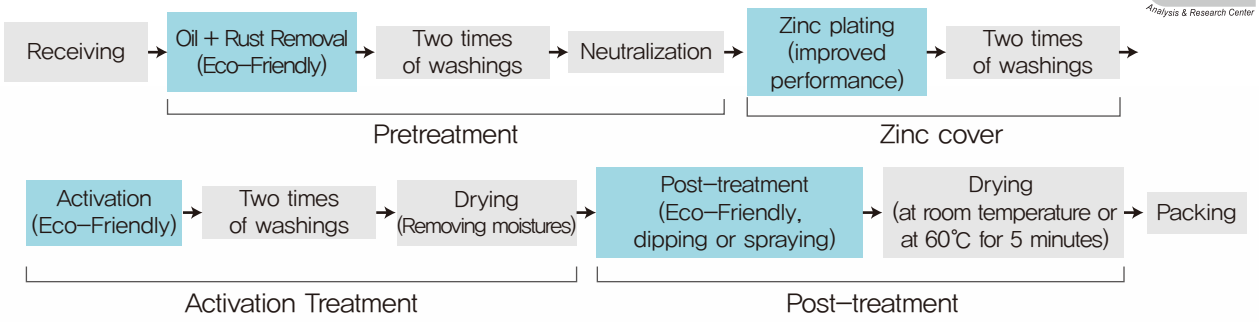
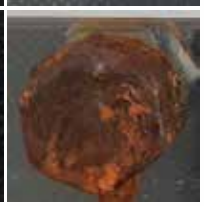
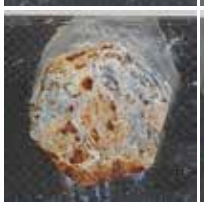
■ Innozinc plating mass production process



1. Pretreatment: Reduces wastewater generation to one third the amount of conventional galvanizing. This is an eco-friendly product that reacts only to rust and zinc, and solves safety and hydrogen embrittlement problems.
2. Zinc Plating: By adding reactive Si, zinc activation is reduced and stable performance is ensured.
3. Activation treatment: Eco-friendly activating material that replaces nitric acid can be used or it can be omitted depending on the product.
4. Post-treatment: No chromium compounds (Cr6+, 3+) are used and no additional washing process is required.
5. The total process time is reduced to less than 37 minutes, increasing production.

■ Corrosion Resistance [After Tooling 2times ASTM B117]

	Innozinc	Erectro Galvanizing	Hot-dip Galvanizing	G##MET
Before Test [After Tooling 2times]				
SST 700hr [After Tooling 2times]				

Before Test	SST 240hr	SST 408hr	SST 880hr	SST 1070hr	SST 1500hr
					

For conventional galvanizing process, electro zinc plating generated red blue when exceeding SST 200hr, while hot dip galvanizing generated red blue when exceeding SST 480hr or more. INNOZINC has no redness in SST1500hr and retains corrosion-resistance even after two turns of tooling tests (physical impact).

■ Applications

Automobile: Electro zinc, nickel plating, metal coating substitute

Shipbuilding: fasteners, cable trays, etc.

Road engineering: steel towers, guardrails, traffic guards, etc.