

# Zinc-Nickel surface-finish for superior protection

## Introduction:

Our Zinc-Nickel process is a total corrosion protection system for steel parts. The coating is based on a Zinc-Nickel alloy with passivation and topcoat and it is applied through electroplating. The system is free of any hexavalent chromium, lead and cadmium and is in compliance with the RoHS II regulation (directive 2011/65/EU).

## General info comparison Zinc-Nickel versus Zinc

Our Zinc-Nickel process is based on a high zinc-nickel alloy which provides an excellent level of corrosion resistance, especially under more extreme, moist and thermal conditions.

Some high-performance features of our Zinc-Nickel process coating:

- Corrodes sacrificially to steel (consistent stable corrosion performance)
- Stable and less voluminous corrosion by-products (lower dissolution rates in a corrosive atmosphere, such as salt solution)
- Adherent conversion film and topcoat (also galvanic corrosion protection)
- Better anti scratch and wear resistance
- The plating process causes close to none hydrogen embrittlement in hardened steel
- Very good adhesion and coverage on cast iron (for example GGG40 / GGG50)

## Properties

*Our Zinc-Nickel process compared to standard zinc plating and hot-dip*

	<b>Zinc – Nickel</b>	<b>Zinc</b>	<b>Hot-dip galvanizing</b>
Alloy composition	10-16% Ni / 84 – 90 % Zn	99,5% Zn / 0.5% Fe	100% Zn
Typical coating thickness	5 – 15 µm	5 – 15 µm	50-100 µm
Hardness	HV 150 – 180	HV 100 - 150	HV 100 – 150
Metal density	7.40	7.14	7.87
Melting point	750 – 800 °C	420 °C	420 °C
Weldability	Good	Poor	Very poor
Thermal stability	Excellent	Poor	Fair
Base for paint adhesion	Good	Fair	Fair

*Our Zinc-Nickel process compared to standard zinc plating and hot-dip regarding corrosion resistance*

	<b>Zinc – Nickel</b>	<b>Zinc</b>	<b>Hot-dip galvanizing</b>
Transparent passivation hours NSS to white rust *	240	120	Immediately
Transparent passivation hours NSS to red rust *	Up to > 1.000 hours	240 – 480 hours	500 - 1000 hours
Mechanical post-treatment (Reaming holes/polishing surfaces, removing drops etc)	None	None	Always
Effects on thin materials	None	None	Deformations
Effects on internal and external threads	None	None	Deformations
Increase of weight as a effect off galvanizing-treatment	(Barely) None	(Barely) None	Significant

- **Corrosion resistance when tested on steel testpanels with average coating thickness as mentioned above in a Neutral Saltspray test according to ASTM B 117**

For more info feel free to contact our company:

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Aan de inhoud van dit schrijven kunnen geen rechten worden ontleend



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