

## Product Description

Traditional water-based inorganic zinc-rich coatings use water-based inorganic silicate emulsions as binders and high-purity zinc powder as filler. Their anti-corrosion mechanism combines cathodic electrochemical protection and physical barrier protection. However, due to the polycondensation reaction of silicate materials during curing, unrelieved shrinkage stress is generated, leading to surface cracking under thermal cycling conditions.

NASDELL High-Temperature Coating, developed through our proprietary fluorine-modified silicone resin composite technology, restructures the molecular architecture of traditional silicate systems. This innovation enhances coating flexibility, temperature resistance, and weather resistance, raising the maximum service temperature to 752°F (400 °C). It overcomes the cracking issues of conventional inorganic zinc-rich coatings under harsh thermal cycling conditions.

## Intended Uses

Can be used as a primer in combination with epoxy primers and high-performance topcoats to provide long-term heavy-duty corrosion protection. Typical applications include: bridges, offshore platforms, hull surfaces above the waterline, superstructures and decks of ships, non-immersed steel structures and pipeline exteriors.

Can also be applied as a single coating to protect high-temperature components such as steam pipelines and heat exchangers.

## Advantages

Outstanding environmental performance: VOC emissions as low as 7 g/L – far below the 50 g/L limits set by the U.S. and EU.

Excellent cathodic protection and salt spray resistance – significantly improves anti-corrosion reliability and safety.

Superior high-temperature performance – operates long-term at 752°F (400 °C).

Resistant to immersion in solvents and oils – broad application scope.

## Typical Characteristics

Name		Test Data	Testing Standard
Cured Density (g/cc)		2.65	–
Solid Content (%)		65	ASTM D3960
Pencil Hardness (H)		2	ASTM D3363
Water Resistance (1000h)		Pass	ASTM D2247
VOC Emissions (g/L)		7	ASTM D3960
Adhesion (psi/MPa)	Sandblasted steel	725 (5)	ASTM D4541
Chemical Resistance (90 Days)	HCl (10%)	Pass	ASTM G20
	NaOH (10%)	Pass	
	NaCl (10%)	Pass	
Salt Spray Test		10000	ASTM B117
Service Temperature (°F/°C)		-22 (-30) – 752 (400)	–

## Package

18 KG/Kit.

## Surface Preparation

Proper surface preparation is critical for optimal performance:

Remove oil and salt from the surface. For marine environments, rinse thoroughly with fresh water to eliminate salt residues.

Remove contaminants and perform mechanical derusting or manual grinding (derusting grade SA2.5 or ST3).

Wipe the surface with a clean cloth to remove residual moisture, dust, or loose rust.

## Mixing

Ensure ambient temperature is 50 – 104°F (10 – 40 °C).

Mixing ratio: 5:13 (By Weight).

Weigh components accurately and stir mechanically for 3 – 5 minutes.

## Application

Apply using a brush or roller.

Single-coat thickness: 60 µm.

Minimum recoating interval: 6 hours.

## Coverage

Based on a 60 µm thickness: 1 kg kit will cover 4.3 m<sup>2</sup> (46 ft<sup>2</sup>).

## Pot Life After Mixing

50°F (10°C) – 8 h, 70°F (25°C) – 6 h, 104°F (40°C) – 4 h.

## Curing Schedule

Temperature	50°F (10°C)	70°F (25°C)	104°F (40°C)
Surface Dry (min)	25	15	10
Complete Curing (h)	10	6	4

## Clean Up

Clean tools immediately after use with solvents (acetone, xylene, alcohol, etc.).

## Storage

Store between 10 °C (50 °F) and 32 °C (90 °F).

Unopened product shelf life: 1 year.

## Safety

Before using any products, review the appropriate Material Safety Data Sheet (MSDS) or Safety Sheet for your area. Follow standard confined space entry and work procedures, if appropriate.

