

NanoPrep

Surface Preparation Coating

NanoPrep is a high-performance surface preparation coating to be used where abrasive blasting is not preferred or possible. It can be applied to rusted, painted, and bare steel, aluminum or galvanized structures.

NanoPrep can be used as an excellent base for:

- ✓ **Water based Epoxy**
- ✓ **Epoxy with 100% solids**
- ✓ **Water based Polyurethanes**
- ✓ **Low VOC coatings**
- ✓ **Coatings specifically approved by Rezitech Services**

SURFACE PREPARATION WITH OR WITHOUT RUST:

LIGHT CLEANING – SSPC-SP WJ-4 pressure water wash at 3,000-3,500 psi (207-241bar) prior to application of NanoPrep. Use of a phosphate free cleaner to remove oil residue may assist in this process. Surfaces must be free of visible deposits of oil, grease, dirt, loose rust and coating or other materials that may interfere with coating adhesion.

If mill scale is present after light cleaning, prepare the surface to SSPC-SP3 standard and repeat light cleaning per SSPC-SP WJ4.

If solvent-soluble foreign matter exists on the surface, remove per SSPC-SP1, then remove all traces of solvents per SSPC-SP WJ-4 pressure water wash.

Surface rust that is not removed by recommended surface preparation can remain.

NanoPrep can be applied to rusted surfaces with greater than 50 microns of rust. If a high quality, uniform surface finish is not apparent after two coats, a third coat may be required. The third coat is only required when heavy rust is present in the initial, untreated substrate. Third coat should be applied at the same thickness as the first coat (70 – 90 microns WFT).

SURFACES WITH OLD PAINT (and rust):

In areas with loose paint flakes and or rust pockets, prepare the surface to SSPC-SP-3 surface standard using power wire brushing, and pressure wash surface to SSPC-SP-WJ4.

CRITICAL: It is critical that any shine or patina be removed from existing paint prior to coating with NanoPrep. This can be achieved through either SSPC-SP-3 or whip blasting to 40-50 microns for larger areas.

APPLICATION INSTRUCTIONS:

NanoPrep can be applied to damp (not wet) degreased rusty surfaces free from contaminants. Best outcomes occur with application on dry surfaces.

Spot prime heavily rusty spots with approx. 70-90 microns wet film thickness; allow to dry and apply Coats 1 & 2

Surface temperature must be at least 5°F (3°C) above the dew point for application. Surface temperature must be between 10°C (50°F) and 73°C (163°F)

SURFACES WITH LESS THAN 50 MICRONS OF RUST:

A) Coat #1	Wet film thickness	70 – 90 microns
	Dry film thickness	Approx. 40 - 50 microns

B) Coat #2	Wet film thickness	80-100 microns
	Dry film thickness	Approx. 45-55 microns

Note: If applied above recommended thicknesses you may experience mud cracking

LARGE SURFACES WITH GREATER THAN 50 MICRONS OF RUST:

NanoPrep can be applied to large areas with greater than 50 microns of rust on the surface. If a high quality, uniform surface finish is not apparent after two coats, a third coat may be required. The third coat is only required when heavy rust is present in the initial, untreated substrate. Third coat should be applied at the same thickness as the first coat (70 – 90 microns WFT).

SURFACES WITH OLD PAINT AND RUST:

Spot prime rust pockets (70 – 90 microns WFT) and allow to dry for 30 minutes. Coat entire area following directions for “Surfaces with less than 50 microns of rust”. The chemical components of NanoPrep include Nano particles that actively react with existing paint to form a reinforced anti-corrosive structure.

When applied over existing paint, NanoPrep will react with compatible paints. With some existing paints, white staining phosphate deposits may occur as a result of this reaction. This is only cosmetic and will not affect the performance of the paint. Compatibility is determined by the absence of bubbles after coat #1 dries and by adhesion testing. NanoPrep cannot be applied over silicon-based paints.

RECOMMENDED DRYING TIMES AT 75% HUMIDITY

Temp	1 st Coat	2 nd Coat
10-15°C (50-59°F)	4 Hrs	4 Hrs
15-20°C (59-68°F)	3 Hrs	3 Hrs
+23°C (+73°F)	2 Hrs	2 Hrs

It is important to wait for complete drying time of each layer before applying subsequent layers.
At higher humidity levels drying time may increase by 25 – 50%.

OVERCOATING

CRITICAL: FOR BEST RESULTS - IT IS CRITICAL THAT THE SECOND LAYER OF NANOPREP BE APPLIED AS SOON AS THE FIRST LAYER IS TOUCH DRY. IF LEFT TOO LONG THE FIRST LAYER WILL START TO HARDEN AND CRYSTALLISE CAUSING REDUCED INTERCOAT ADHESION.

All Surface Preparation and two coats of NanoPrep should be completed on the same day.

Waterbased topcoats can be applied as soon as the second layer of NanoPrep is touch dry.

For two part top coats, sufficient time should be allowed for water to evaporate from the NanoPrep prior to application. Please follow below instructions prior to application:

- Minimum drying time from second coat of NanoPrep: 12 hours at 20°C and 50% RH.
- Longer if: temperature is lower, humidity is higher, or the coating is applied heavily.
- Always check: the film must be fully dry, hard to the touch, and free from tack before overcoating.

OVERCOAT WINDOW FOR TOPCOAT: The maximum the second layer of NanoPrep should be left is 24 hours at 20°C and 50% Relative Humidity. If this window is missed, the product should be lightly abraded to remove any hardness, shine or patina that has resulted prior to application of topcoat.

On larger jobs, the coating system may need to be applied in **stages** to ensure each coat is applied within the specified overcoat window. This may require dividing the structure into **sections** and completing all coats in that section before moving onto the next. Careful planning of work sequencing is essential to maintain adhesion and coating performance.

Applicable Top Coats

There are many applicable topcoats that can be used with NanoPrep including Water based epoxy, epoxy with 100% solids, water based Polyurethanes and coatings with less than 16% solvents. Please contact Rezitech if in doubt on whether potential topcoats are suitable.

RECOMMENDED APPLICATION TOOLS:

Use water to clean application equipment prior to coating. If solvents must be used to clean equipment rinse equipment thoroughly with water to remove all solvents prior to coating.

Airless spray gun:	0.017" - 0.21" Nozzle size (Gun and nozzle must be stainless steel) Operating pressure 1,800-2,200 psi (124-152 Bar) nozzle pressure.
Brush:	Natural bristle
Roller:	3/8" nap, no-lint cover

MIXING NANOPREP

NanoPrep is thixotropic – it settles and gets thicker during storage. Water will also rise to the top of the product whilst stored. Use a mixing disc with a diameter of approximately 1/3 the diameter of the pail. Insert mixing disc into container until it is approximately 1-2" from bottom of container. Mix the coating for approximately 5 minutes at a SLOW SPEED ENSURING NO AIR IS DRAWN INTO THE COATING. Coating is properly mixed when lifting the mixing disc out of the material the coating flows like oil without dripping. As the coating will thicken in storage, confirm there is no material on the side walls or the bottom of the container during the mixing process.

DO NOT DILUTE OR MIX NANOPREP WITH OTHER PRODUCTS
PROPER MIXING OF NANOPREP BEFORE USE IS IMPORTANT

CLEANING EQUIPMENT

Use water to clean application equipment prior to coating. If solvents must be used to clean equipment rinse equipment thoroughly with water to remove all solvents prior to coating.

OTHER APPLICATION NOTES:

- When coating in an enclosed area, ventilation must be provided to facilitate proper drying.
- Allow 48 hours to dry before rain or other application of water to the surface to provide ample time for initial polymerization to take its course.
- When preparing samples for testing, wait a minimum of 7 days to allow the coating to start to cure. Cure to full strength requires 30 – 45 days.
- The product should be stored away from direct sunlight at temperatures of 3°C to 45°C. DO NOT ALLOW TO FREEZE.
- NEVER store NanoPrep in metal containers, as the coating will react with metal and affect its active ingredients. Confirm coating is thoroughly mixed before pouring from a large container into a smaller one.

Re-mix daily before use.

Shelf Life of Product is 24 months.