

PRODUCT DESCRIPTION

- Nano-Clear Industrial Coating (NCI) is a clear, solvented, one component, moisture cured, very highly cross-linked (nano-structured) polyurethane/polyurea hybrid industrial top coating.
- Nano-Clear's excellent physical properties are a result of the high cross-link density, approximately 3X more cross-link density than alternative clear coats.
- NCI is formulated to work with existing paint systems – not replace them – to protect against UV, corrosion, chemical attack and scratch/abrasion/impact. NCI dramatically improves surface hardness, gloss and enhances color.
- Nano-Clear penetrates, fortifies and restores painted and fiberglass surfaces. Using Nano-Clear will provide 5-10 years of protection when applied properly - eliminating a minimum of one maintenance cycle which more than pays for the cost of the Nano-Clear in terms of material and labor.

NCI protects new and oxidized:

- 2K epoxy, polyurethane, polyurea paints and coatings.
- Fiberglass
- Powder Coating
- Concrete
- Anodized aluminum
- Aluminum and stainless steel
- Plastics (not all)
- Wood



TYPICAL PROPERTIES

Solids, by Volume	30%
Mix Ratio	1K (use as received - do not thin)
Hardness	4H Pencil Hardness ASTM D3363 (6-7 pencil hardness with matting additive)
QUV Resistance	100% ASTM 4587
Flexibility	Pass ¼" ASTM D522
Gloss Retention	99% ASTM GI55
Target Thickness	2-3 mils DFT
Abrasion Resistance	8.4 mg loss/1000 cycles ASTM D4060
MEK Resistance	>1500 rubs ASTM D4752
Salt Spray	4,000 hours, no rust, no blisters ASTM B-117
VOC (less exempts)	1.05 lbs. /gallon as received
Viscosity	200 cps
Tack Free Time	25 - 35 minutes @ 75F and 50% RH 15 minutes @ 85F and 50% RH
Application Temperature Range	40F - 90F 30% - 90% RH Low temps & low RH = slower cure. High temps & high RH = faster cure
Service Temperature Range	-40F to 280F, 350F peak

Nano-Clear Industrial Coating

Polyurethane Hybrid Clear Coat

Revision: January 2022

APPLICATION GUIDELINES

IMPORTANT: Consult with Industrial Solutions USA representative for complete and detailed application instructions. **Nano-Clear Industrial Coating is only for industrial/commercial use.**

Safety.

Wear protective eye wear, organic vapor cartridge respirator, skin protection and chemical resistant rubber gloves.

Environmental Conditions.

Nano-Clear Industrial Coating is a moisture cured formulation. As a rule, the higher the humidity and the higher the temperature results in a faster cure.

Ensure the ambient air temperature (40F - 90F) and substrate temperature (40F - 90F) is a minimum of 5 degrees above the dew point. Relative humidity should be a minimum of 20% to a max of 80%.

Substrate Preparations.

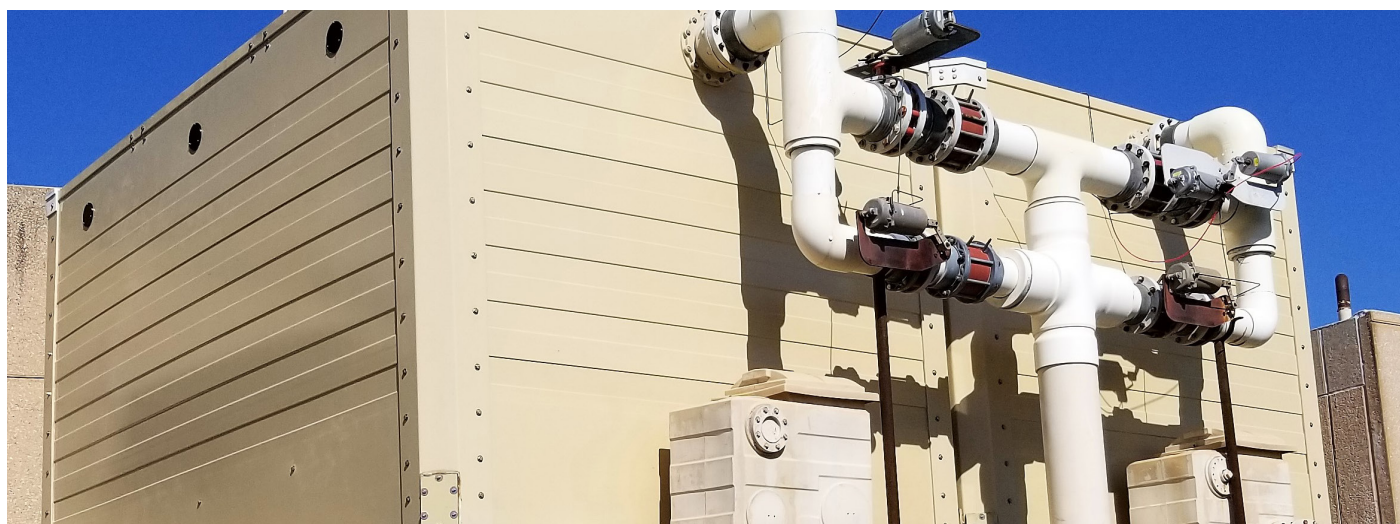
All substrates must be clean and dry prior to the application of NCI. The substrate must have all contaminants removed such as loose material, oxidation, efflorescence, oils, waxes, grease, dirt, grime, anything that can interfere with Nano-Clear creating a mechanical and chemical bond with the substrate.

Be sure to chemically remove salts (all forms) from the substrate prior to applying Nano-Clear.

For specific substrate preparation please contact ISUSA.

Application Equipment.

NOTE: Be sure the source of compressed air has an appropriate air filtration and drier system for best results.



Application.

Airless Spray Equipment

- Tip Size: .017-.019" orifice (Graco 517/617 or 519/619)
- Pump: 30:1 minimum
- Pressure: 800psi (Recommend testing individual system for best pressure setting)
- Suitable for use in a pressure pot system.
- Use dedicated spray lines or thoroughly clean existing spray lines with acetone or MEK to remove previous coating in the lines.

HVLP/LVLP Spray Equipment

- Fluid Tip: Air Spray 1.3mm, 1.4mm, 1.5mm
- Pressure at Gun: 29-30 psi. Adjust pressure first at the compressor or in the pressure line then fine tune pressure at the gun

- Pressure at the spray tip: 10psi (this meets the EPA National Emission Standards for Hazardous Air Pollutants standard).

Manual Application Equipment

- Use a roller (Purdy Parrot or Ultra Finish) or brush (not foam) that can be used with strong solvents or it will fall apart during use.
- Do not overwork the coating while applying.

Application

- Before the application of NCI, read and understand the Safety Data Sheet (SDS).
- Always comply with local, state/provincial and federal regulations.

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- Only dispense the amount of product to be used in the current application session then re-seal the original container immediately to prevent material from initiating cure in the container. An inert gas blanket (PolyPurge, Bloxygen) should be sprayed into the container to maintain the quality of unused material.
- Do not thin NCI.
- Always apply NCI with a minimum of two wet-on-tacky applications. Allow 5-10 minutes between wet coats at 72F to allow for solvent evaporation.
 - Allow less time between coats if applying in higher temperatures and higher humidity conditions.
- A third coat may be required if applying NCI to oxidized substrates (e.g. fiberglass) in order to obtain a smooth, glossy, monolithic finish.
- The target wet film thickness is 4-5 mils per coat.
- The total target dry film thickness is 2-3 mils.
- **Caution:** Too high of a film build combined with high temperatures and high humidity will cause solvent entrapment. Always best to apply several thin wet coats (be careful not to orange peel) than fewer thick coats.
- Clean equipment immediately after use with acetone or MEK. Do not use water or alcohol.

COVERAGE, PACKAGING, STORAGE AND SHELF LIFE

Coverage:

Coverage is approximately 240 square feet per gallon @ 2 mils DFT, less on oxidized substrates.

Packaging:

- 1 gallon can – approx. 8 lbs. (3.7 kilograms)
- 5 gallon pail – approx. 40 lbs. (18 kilograms)
- 55 gallon drum – approx. 440 lbs. (200 kilograms)

Do not re-package Nano-Clear without first consulting your Nano-Clear representative.

Storage:

- Store unused material in the original container after displacing the air in the container with inert gas blanket.
- Storage temperatures between 40F and 75F.

Shelf Life:

- Material has a shelf life of 6 months after the date of manufacture if properly stored unopened between 40F-75F (higher temperatures will reduce shelf life).

- Shelf life after open – 2 to 4 weeks without a gas blanket; 1-2 months with a gas blanket at the recommended temperatures.
- Do not use if the material has turned white, has a noticeable yellow tint or has a gelatinous consistency.

Additives:

- Nano-Clear functional additives were specifically developed to expand the application potential of Nano-Clear Industrial Coating. Nano-Clear functional additives may be used alone or in combination blended together with Nano-Clear to create a variety of “customized” formulations to meet specific service environment requirements.
- NCFP: A proprietary low surface energy fluoropolymer when added to Nano-Clear results in a very low surface energy coating i.e. very hydrophobic. Repels ice, dirt, oil, water, paint, fouling and chemicals.
- NCA: An accelerator to reduce the tack free time of Nano-Clear. Very useful in production environments.
- NCIM: A proprietary matting agent engineered to reduce the specular gloss level of Nano-Clear from high gloss to full matt without compromising the physical properties. NCIM also increases the pencil hardness of the cured coating. NCIM will dramatically improve scratch resistance.
- VV-200: An adhesion promoter to enhance the adhesion of NCI to difficult to stick to substrates. VV-200 may be used as an additive to Nano-Clear or as a clear “primer” coat on the substrate followed by a top coat application of Nano-Clear. Aluminum and stainless steel must be etched prior to application of either VV-200 or VV-200/NCI solution.

PERFORMANCE WARRANTY

Warranty and liability conditions shall be agreed to in writing by the manufacturer.



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Industrial Solutions USA
provides coatings and elastomeric
linings that protect assets
in severe service environments.

INDUSTRIAL SOLUTIONS USA®

Coatings. Protection. Innovation.

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