

Nano-Clear NCIF Easy Clean Coating - TDS



Nano-Clear NCIF Easy Clean Coating is a one component (1K), humidity cured, densely cross-linked, polyurethane / polyurea hybrid nano-coating. NCIF is manufactured using proprietary 3D nano-structured polymers producing extreme crosslink density. NCIF has very low surface energy to significantly reduce surface cleaning and repel water, ice, dirt and algae. NCIF has a high water contact angle of 120° to produce a remarkable hydrophobic surface.

NCIF is the only industrial coating in the marketplace to extend the service life of painted assets by 10+ years. NCIF is designed to dramatically improve corrosion, scratch, abrasion, chemical, and UV resistance and reduce cleaning by 50%. NCIF is also designed to be used in combination with NCIM Matting Additive to produce an easy clean matte finish clear.

APPLICATION USES

Produces a highly durable high-gloss clear coating over painted surfaces including 2K epoxy, 2K polyurethanes, powder coatings.

Application Potential: Fleet Vehicles. Exterior Pipelines, Lifeboats, Cargo Ships, Epoxy Floors, Exposed-Aggregate, Painted Building Structures, Railway Tank Cars, Chemical Tanks, Heavy Duty Equipment, Agriculture Equipment...

- One-component formulation save on labor and preparation time.
- Designed to be applied directly over two-component coatings.
- Extends in-service life of newly painted or highly oxidized painted surfaces.
- Restores original color, gloss, surface hardness and extreme UV resistance.
- High scratch resistance (4H pencil hardness).
- Extreme chemical resistance (>1500 MEK rubs).
- Extreme weathering resistance (98-100% gloss retention).

PAINT / MATERIAL COMPATIBILITY

- Designed to be applied over painted 2K epoxies, 2K polyurethanes, powder coatings, cement, exposed-aggregate and teak wood.

NANO-CLEAR APPLICATION CONDITIONS

Temperature: 40°F (4°C) to 100°F (38°C) Relative Humidity: 20% to 90%

PHYSICAL PROPERTIES

Polymer Chemistry: Nanostructured Polyurethane Hybrid Mixing Ratio: No mixing required Recommended Dry Film Thickness: 2 mil (50 µm) Recommended Wet Film Thickness: 6 mil Pencil Hardness - ASTM D3363: 4H (7H w/NCIM Matte Additive) Pendulum Hardness (Persoz) - ASTM D4366: 220 Abrasion Resistance - ASTM D4060: 8.4 mg loss Impact Strength - ASTM D2794: > 140 Water Immersion Test - ISO 2812-2: Pass QUV Resistance - ASTM D4587: 99% Xenon WOM - ASTM G155: 99% MEK Resistance - ASTM D4752: >1500 Salt Spray - ASTM B-117: 5000 hrs. no rust, no blisters DMA - Crosslink Density - (X103 mol/m3): 2.17 VOC (as received): 1.05 lbs. / gal. Viscosity: 200 cP

NANO-CLEAR 3D POLYMER



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APPLICATION INFORMATION

Consult SDS for proper handling, cleanup, disposal, and use of personal protective equipment. Circulate sufficient air to maintain working environment below the PEL and LEL. Apply according to local, state, and federal (OSHA) regulations.

- Ambient temperature: 40°F (4°C) to 100°F (38°C)
- Relative Humidity: 20% to 90%
- Metal temperature: 40°F (4°C) to 100°F (38°C)
- Surface temperature: At least 5°F (-5°C) above the dew point
- Material temperature: 40°F (4°C) to 90°F (32°C)

SURFACE PREPARATION

Newly Painted / Wet-on-Wet Paint Application:

- Apply directly over two-component epoxies, two-component polyurethanes, two-component topcoatings & powder coatings.
- Allow solvents to fully evaporate-out from the underlying paint prior to the application of Nano-Clear NCI (typically 3-6 hours).

In-Service Painted Surfaces:

- Repair any structural damage (rust or chipping) using a two-component epoxy or polyurethane primer.
- Surface must be sanded with 400 grit orbital sander, then cleaned using SuperClean, then water rinse & dry.
- Surface is ready to be spray apply or roll Nano-Clear NCI using the application instructions below.



RECOMMENDED FILM BUILD

- Number of spray coats: Apply 3 4 wet coats with 2-3 min. between wet coats to allow for solvent evaporation - Avoid recoating additional coats after 20 min. as flow and leveling will be negatively effected.
- Recommended (Wet Film Thickness WFT): 2 3 mil per each wet coat (6 mil wet film build total).
- Recommended (Dry Film Thickness DFT): 2.00 to 2.50 mil depending on surface properties desired.

Wet-on-Wet technique (HVLP spray gun)

- Apply 3 - 4 wet coats @ 2 - 3 mils per each wet coat to "Fill & Fortify" the paint layer for long-term surface protection.

- The number of wet coats required should be determined by the overall gloss level 5 min. after application:
 - * High gloss = Good film build
 - * Low Gloss = Low film build (recommend applying another wet coat to increase gloss and improve properties).

Solvent Flash: Allow 2 to 5 min. between wet coats at 72°F (22°C) to allow for solvent evaporation.

THINNING

- No thinner is required as Nano-Clear has very low viscosity.

EQUIPMENT CLEAN-UP

- Clean equipment immediately after using Acetone or MEK. Never clean spray equipment with water or alcohol.



CURE TIME @ 72°F (22°C), 50% R.H.

Tack free: Handle: Dry Hard:

Dust free: ~ 20-30 minutes ~ 30-40 minutes ~ 4 hours 24 hours @ 72°F (22°C) Full Cure: 48 hours @ 72°F (22°C) CURE TIME @ 90°F (32°C), 50% R.H. Dust free: Tack free: Handle: ~ 3 hours Dry Hard: Full Cure:

- ~ 10-15 minutes ~ 20-30 minutes 24 hours @ 90°F (32°C) 48 hours @ 90°F (32°C)
- * Lower temperatures and lower humidity conditions will slow-down the curing rate.
- * Higher temperatures and higher humidity conditions will speed-up the curing rate.
- * Nano-Clear NCA Accelerator may be added to NCI @ 1-2% by weight to reduce dust-free and tack-free time.
- * Nano-Clear NCIM Matting Additive may be added to NCI @ 10-27% by weight to reduce gloss and improve abrasion.

SURFACE COVERAGE PER GALLON

333 ft² / gal @ 2.00 mil DFT or 31 m² / 3.8L @ 2.00 mil DFT (3 wet coats @ 2.00 mils each wet coat = 6.00 mil wet total).

WEIGHT PER GALLON:

8.0 lbs (3.63 kg)

PACKAGING

1 gal (3.8L), 5 gal (19L), 55 gal (208L)

SHIPPING WEIGHT

1 gal container - 8 lbs (3.63 kg), 5 gal container - 40 lbs (18.14 kg), 55 gal container - 440 lbs (200 kg)

TRANSPORTATION, STORAGE & SHELF-LIFE

Transportation: Min. 40°F (4°C) and Max. 86°F (30°C) for short periods.

Storage & Shelf-Life: Un-opened Container:

40°F (4°C) Minimum: 12 month 72°F (22°C) Max: 12 month 80°F (27°C) Max: 6 month 90°F (38°C) Max: 2 month

Storage & Shelf-Life: Opened* Container:

80°F (27°C) Max: 2 months *Opened is defined as cap is opened-and-closed immediately after pouring contents to avoid solvent evaporation / contamination.

SAFETY INSTRUCTIONS

Consult Nano-Clear NCI Safety Data Sheet prior to use.

APPLICATION EQUIPMENT

- Apply using HVLP, Conventional or Airless spray equipment.
- Nano-Clear may also be applied using a wipe-on technique using a Merit Pro Dynamic 9" Pad (Item 00227).
- Streaking or high spots may occur using a "wipe-on" technique. Avoid high spots by evening surface while wet.



AIR SPRAY EQUIPMENT

Spray Gun: HVLP or LVLP (SATA, Devilbiss or Iwata)
Fluid Tip: 1.3, 1.4 or 1.5 mm
Fan Pattern: Full fan, when applying 2 wet coats @ 3 mil each wet coat (6 mil wet total)
Fluid Control: 2 1/2 turns out
Spray Pattern: 50% overlap
Pressure at Gun: 29 - 30 PSI

AIRLESS SPRAY EQUIPMENT

Tip Size: Graco 415, 515 or 615 or 815 spray tip **Pump:** 30:1 or 40:1 **Pump Pressure:** 800 psi

BUFFING & POLISHING (if needed)

- Equipment: Orbital sander and orbital polishing equipment.
- Orbital Sand: Use 800 grit paper, then 1000, then 1500, then 2000, then 2500 grit paper.
- Compound: Use heavy cut compound with wool pad @ 1,200 to 1,400 RPM.
- Polishing: 3M SRC (scratch resistant clears) polishing paste with wool @ 1,200 to 1,400 RPM.
- Final High Gloss Polish: Use light to medium cut polishing paste with wool pad @ 1,200 to 1,400 RPM.

SURFACE MAINTENANCE / CLEANING

- Use low pH soap and water for clean-up.
- Use lint-free microfiber cloths to clean and dry surfaces.
- Use paint thinner to remove graffiti.

IMPORTANT COMMENTS

- 1. Use dedicated spray lines and equipment for the best results. Clean equipment immediately after use using paint thinner or acetone. Avoid contact with skin and hair as Nano-Clear will adhere like super-glue.
- 2. Avoid recoating after 20 minutes as flow and leveling will be effected.