

## ABOVE GROUND STORAGE TANK PROTECTION – TANK #2



### McCook County Highway Department Salem, SD

**Industrial Customer:**

McCook County Highway Department

**Project:**

Fortify 4+ year old paint beginning to fail on the west above ground asphalt storage tank

**Project Location:**

McCook County, Salem, SD

**Applicator:**

McCook County & Industrial Solutions USA personnel

**Coating Formulation:**

Nano-Clear Industrial (NCI) coating

**Application System:**

HVLP

**Dates:**

Application: 08 September 2016

**Conditions:**

75F, 57%RH, sunny



**PROJECT OVERVIEW:**

Nano-Clear Industrial (NCI) polyurethane/polyurea hybrid aliphatic clear penetrating coating was applied to a second highly oxidized and weathered asphalt aboveground storage tank fortifying the existing paint creating a protective coating system that will extend the protection of the AST well beyond the capability of paint alone. The application of NCI will eliminate one re-painting cycle saving the county money – more than paying for the Nano-Clear application.

**Coating Formulation:**

NCI - a crystal clear, aliphatic, moisture cured, one component polyurethane/polyurea hybrid formulation with extreme cross-link density for UV, chemical and abrasion resistance. NCI is formulated to penetrate and fortify existing paint systems (newly painted or highly oxidized), not replace them.

**Applications:**

Above ground storage tanks, equipment, implements, doors, light posts, railings, signs – any asset that has degraded paint from UV, chemical and abrasion forces. Newly painted assets should also be a primary application consideration.



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### CURRENT SITUATION:

McCook County Highway department has two above ground storage tanks that hold asphalt.

Each tank is approximately 27' long and 9' in diameter = ~13,000 gallons.

The first tank was coated with Nano-0Clear in the Summer of 2015. The decision to coat the second tank was made in the Summer of 2016.

Over the years, exposure to the UV and weather deteriorated the paint system resulting in oxidation to all of the paint on the storage tank.

There were areas the paint had peeled away from the substrate no longer protecting the tank steel and allowing rust to commence.

Applying Nano-Clear Industrial coating to the second tank eliminated the need to re-paint the tank saving the county significant maintenance money.



***Aromatic paint systems  
need help to achieve  
the years of protection  
required by asset  
owners/managers.***



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### ISUSA SOLUTION:

**NCI** is formulated to penetrate and fortify oxidized, weathered paint systems. **NCI** is new cross linking formulation technology. This cross linking creates a “tough” coating that combines with the existing paint system forming a long lasting protection system.

**NCI** chemically bonds to the paint with adhesion promoters and also bonds mechanically by penetrating into the porosity of the underlying coating.



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#### APPLICATION:

The storage tank was coated with **NCI** on 08 September 2016.

#### Preparation:

- Pressure washed with ambient temperature water, no heat.
- The surface was brushed with a low concentration of biodegradable detergent and water.
- The surface was rinsed with the pressure washer and plain water.
- The storage tank air dried, some areas blown off with a power blower to remove pockets of water and loose paint.
- The storage tank was not media blasted or wire brushed.

#### Application:

**NCI** was applied with an HVLP gun using a 1.4mm spray tip and 28psi at the gun.

The paint on the second tank was heavily oxidized and required applying two wet-on-wet coats of **NCI** because the porous paint surface absorbed the **NCI** at different rates which left some areas looking “patchy”. In some areas, a third wet-on-wet coat was required to obtain an even monolithic coating.

- The application began at the top of the tank – the walkway.
- The storage tank is made of “ring” sections” and the application continued at the top of each ring section applying the **NCI** side-to-side working down the section.
- After an area within the ring section was coated, a second wet-on-wet application was performed moving from the top down – cross-hatching the two applications.  
This cross-hatch spray technique results in an even coverage of the substrate.
- The procedure was repeated on each succeeding ring and on both ends.

#### Result:

Approximately 6 gallons of material was used to cover the storage tank.

- It is important to remember **NCI** is not a paint, it is formulated to work with existing paint systems fortifying them. This requires a little more attention to previously coated sections than with conventional paint application procedures to ensure an even coating of **NCI** after it has penetrated the existing paint.

The resulting protective dry film thickness was approximately 1 mil.

Time to complete the storage tank was approximately 3+ hours.

## ABOVE GROUND STORAGE TANK PROTECTION – TANK #2

Before NCI





## ABOVE GROUND STORAGE TANK PROTECTION – TANK #2

**After NCI**



## ABOVE GROUND STORAGE TANK PROTECTION – TANK #2

Before NCI



09/08



## ABOVE GROUND STORAGE TANK PROTECTION





## ABOVE GROUND STORAGE TANK PROTECTION

After NCI



### SUMMARY & CONCLUSION:

**NCI** was applied to an above ground storage tank with approximately 4+ year old heavily oxidized paint.

The substrate preparation prior to application of **NCI** was minimal – rinse with pressure washer using ambient temperature water then brush with low concentration of biodegradable detergent followed with rinsing with pressure washer using ambient temperature water.

The **Nano-Clear Industrial coating** penetrated the paint system and fortified it with superior physical properties – much better physical properties than the original paint and enhanced the color.

The combined **NCI**/paint coating system extends the protection of the storage tank for years eliminating one re-painting maintenance cycle – paying for the cost of applying **NCI**.

**NCI** does not replace paint systems - **NCI** is the economical solution *to extend the performance life* of paint systems.

**Industrial Solutions USA develops and sells “tough”  
ELASTOMERIC LININGS & COATINGS  
to help industrial customers protect their assets from destructive elements**