

NANO-CLEAR INDUSTRIAL COATING FOR OXIDIZED WATER FEATURE



Parks & Recreation Dept.
City of Sioux Falls, SD

Industrial Customer:

City of Sioux Falls Parks & Recreation

Project:

Fortify oxidized paint and enhance the color on a water feature in the aquatic center.

Project Location:

Sioux Falls, SD

Applicators:

Industrial Solutions USA personnel and Parks & Recreation personnel.

Coating Formulation:

Nano-Clear Industrial (NCI) coating

Application System:

Brush and paint mit

Dates:

Application: 5 May 2016

Conditions:

75F, 44%RH, sunny and windy



PROJECT OVERVIEW:

Nano-Clear Industrial (NCI) coating was applied to an oxidized metal water feature in the Drake Springs Family Aquatic Center in Sioux Falls, SD. The paint on the water feature had become oxidized from the sun and was degraded by swimming pool chemicals in the water. The color of the original paint had faded significantly. The Parks & Recreation Department wanted to use NCI on the water feature to extend the paint protection and enhance the color of the paint. The NCI penetrated and fortified the existing paint on the water feature resulting in a paint system that will last for 5-10 more years. This saves the city the high cost of prep and re-painting. The project was completed in approximately 2.5 hours; the asset was able to be put back into service 24 hours later.

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:

Doors, facilities, railings, fiberglass slides, fences (metal and wood), above ground storage tanks, equipment or signs that have degraded paint from UV, chemical and abrasion forces. Newly painted assets should also be a primary application consideration.

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CURRENT SITUATION:

The City of Sioux Falls' Parks & Recreation Department is responsible for maintaining all aspects of the 85+ parks in Sioux Falls. Maintenance is a significant portion of their budget in terms of materials and labor. Industrial Solutions USA presented **NCI** to the Parks & Recreation Department as an effective product to extend the protection of the city's painted assets by eliminating the cost of at least one re-painting maintenance cycle.



The Parks & Recreation Department had a fountain type water feature at the aquatic center that had become oxidized from UV; degraded by exposure to the weather and exposure from chemicals used in the pool.

The oxidized paint film was intact. No areas of rust were noticeable on the pipe structures; a couple of the attachment hardware components were rusted.

The Parks & Recreation Department agreed to use **NCI** on the water feature to enhance the paint color and fortify the existing paint system extending its service life so as not to have to re-paint the asset which would have cost significantly more money in material and labor.

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ISUSA SOLUTION:

NCI is formulated to penetrate and fortify oxidized, weathered paint systems.

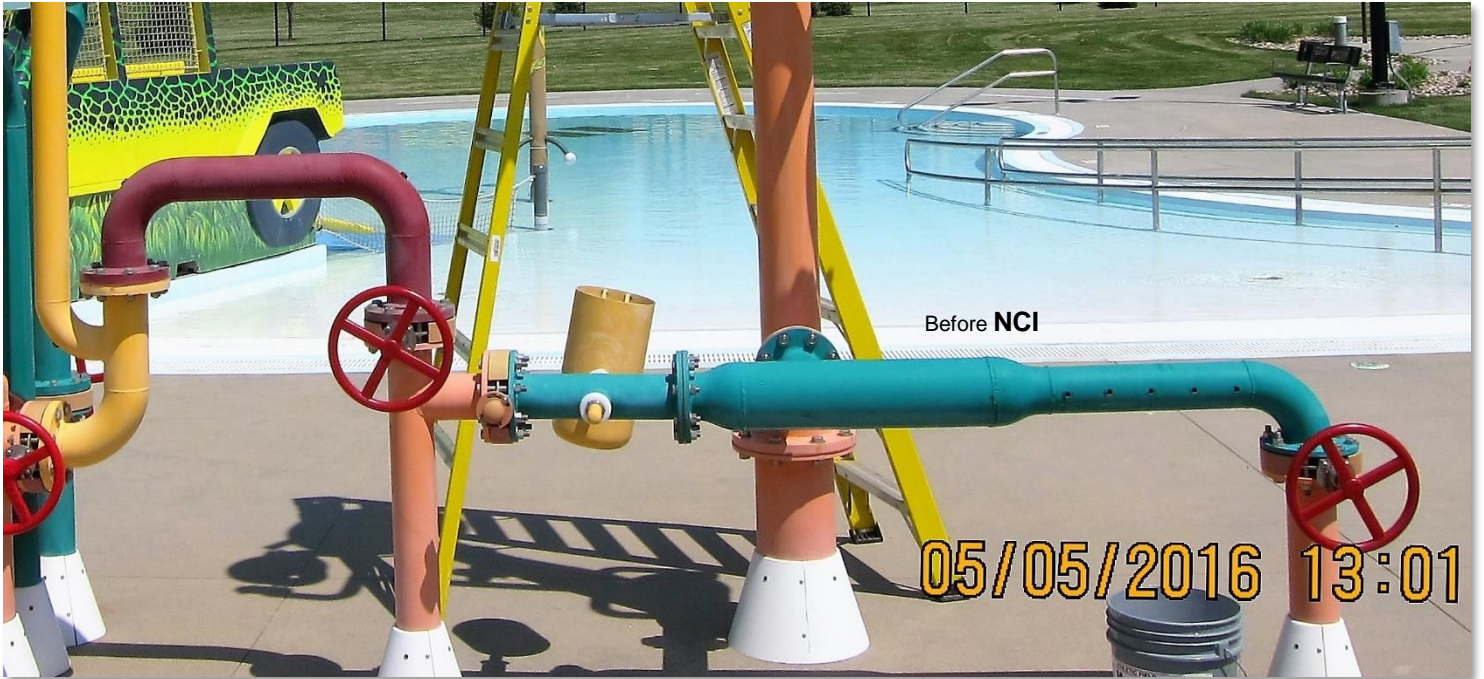
NCI is new cross linking formulation technology. This cross linking creates a “tough” coating that combines with existing paint systems forming a long lasting protection solution.

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



NCI is formulated to work in tandem with existing paint systems (oxidized and new) to enhance the protective properties of the paint system – eliminating at least one maintenance cycle.

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APPLICATION:

The application of **NCI** to the water feature was conducted on 5 May 2016.



Preparation:

- The surface was washed with water and detergent by the Parks & Recreation staff prior to coating.
- The majority of asset was air dried.
NOTE: Some areas were blown dry with a leaf blower. It was important to force dry the “hard-to-reach” areas and the recessed areas such as where the flanges of the pipes are bolted together, around/under the bolts/washers and inside bottom of the buckets where water pooled.
- The surface of the water feature was not media blasted or wire brushed. The integrity of the paint film was acceptable to receive the **NCI** coating.

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Application:

The application of **NCI** was done with a brush and paint mit.

LESSON LEARNED: The paint mit is not recommended because it does not take long for the mit to become degraded by the solvents in **NCI**. Once this begins to happen the mit loses fibers and disintegrates. The other reason not to use a paint mit is it does not deliver a uniform, thick coating of **NCI**.

NCI may be applied with HVLP or airless spray equipment but in this situation it was too windy and the pool had already been filled with water.

- In general, when applying **NCI** with a brush, coat the surface of the existing paint with **NCI**, ensuring all areas of the painted surface are thoroughly coated. Once enough material has been applied to the substrate go back over the coated area and maintain a smooth, light pass with the brush creating an even finish. Stop working the area and allow the **NCI** to “level” which will minimize (if not eliminate) the brush pattern in the finish. Because of the low viscosity of **NCI** (100cps) the finish will “smooth” out.
- The **NCI** was applied at the top of the structure working down to the bottom.
- It is important to watch the previous section you have applied the **NCI** to because on oxidized paint surfaces the **NCI** will absorb into the oxidized paint at different rates. When areas absorb more of the **NCI** than other areas simply go back and apply another light coat (but thoroughly wet out the surface) of **NCI** to even the finish.

Result:

Approximately 2 quarts of **NCI** was used to cover the water feature.

Reviewing the coated asset:

- The overall finish was very good, the **NCI** penetrated and fortified the existing paint system creating an excellent monolithic coating film protecting the water feature.
- The finish has high gloss.
- The original paint color was enhanced.
- The resulting protective dry film thickness was approximately 1 mil.

Time to complete coating the water feature was approximately 2.5 hours using a brush. Using an HVLP spray gun would cut the application to less than one hour.



NANO-CLEAR INDUSTRIAL COATING FOR OXIDIZED WATER FEATURE

A remarkable difference!

NCI is crystal clear so it can be used on any color painted surface.



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SUMMARY & CONCLUSION:

NCI was applied to a fountain water feature that had oxidized paint.

The paint was oxidized over the entire asset.

The substrate preparation prior to application of **NCI** was minimal – wash with water and detergent. It is recommended to use a biodegradable detergent in water and a brush to clean the substrate surface followed with rinsing with clean water using a sponge.

The photos in this report confirm the **NCI** penetrated the paint system and fortified it with superior physical properties – much better physical properties than the original paint was warranted with years earlier.

The combined **NCI**/paint coating system extends the protection of the water feature for years eliminating at least one re-painting maintenance cycle costs which more than pays for the application cost of the **NCI** coating.

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

NCI Saves Money:

- Prevents pre-mature paint failures
- Eliminates substrate preparation required for new paint
- Eliminates labor for same
- Saves primer and paint material costs
- Saves labor for same



CALL TO ACTION:

Inspect the water asset in 12 months – May 2017.

Industrial Solutions USA is asking all departments in the City of Sioux Falls, to implement the application of **NCI** on newly painted and oxidized city assets including doors, light poles, railings, facilities, signs, storage tanks, equipment, implements, trucks and bridges.

Incorporating **NCI** into the City of Sioux Falls maintenance protocol will extend the service life of all assets and save significant money over the current paint system(s) alone.

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