

DECORATIVE LIGHT POLE PROTECTION



Parks & Recreation Dept.
City of Sioux Falls, SD

Industrial Customer:

City of Sioux Falls Parks & Recreation

Project:

Fortify oxidized paint on a park decorative light pole that was beginning to fail

Project Location:

Sioux Falls, SD

Applicator:

Industrial Solutions USA personnel

Coating Formulation:

Nano-Clear Industrial (NCI) coating

Application System:

Mohair paint roller and foam brush

Dates:

Application: 15 September 2015

Conditions:

76F, 60%RH, sunny and breezy



PROJECT OVERVIEW:

Nano-Clear Industrial (NCI) coating was applied to an oxidized metal decorative light pole in Falls Park, Sioux Falls, SD - the top sconces of the light pole were not coated so they could act as a control to compare with the performance of NCI overtime. The paint on the light pole had become oxidized from the sun and was degraded by weather. The protection from the paint was beginning to fail – there were areas where the oxidized paint had started to delaminate. The Parks & Recreation Department wanted test NCI on the decorative light pole to extend the paint protection on the light pole and save money in maintaining the city’s asset. This saves the city the high cost of re-painting.

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, fire hydrants, fences (metal and wood), above ground storage tanks, equipment, implements, bridge rails, steel bridge girders, signs or trucks 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 met with Parks & Recreation team to present **NCI** 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 decorative metal light poles that had become oxidized from UV; degraded by exposure to the weather and exposure from salt used on the roads in winter.

The light poles had been painted with an aromatic epoxy paint formulation (the specific formulation was unknown).

The oxidized epoxy paint film was intact with some areas where the epoxy paint had begun to peel. No areas of rust were noticeable.

The Parks & Recreation Department agreed to use **NCI** on one of the light poles as a best practices trial that will fortify the existing paint system extending its service life so as not to have to re-paint the light pole which would have cost significantly more money in material and labor.



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 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 metal decorative light pole was coated with **NCI** on 15 September, 2015.

Preparation:

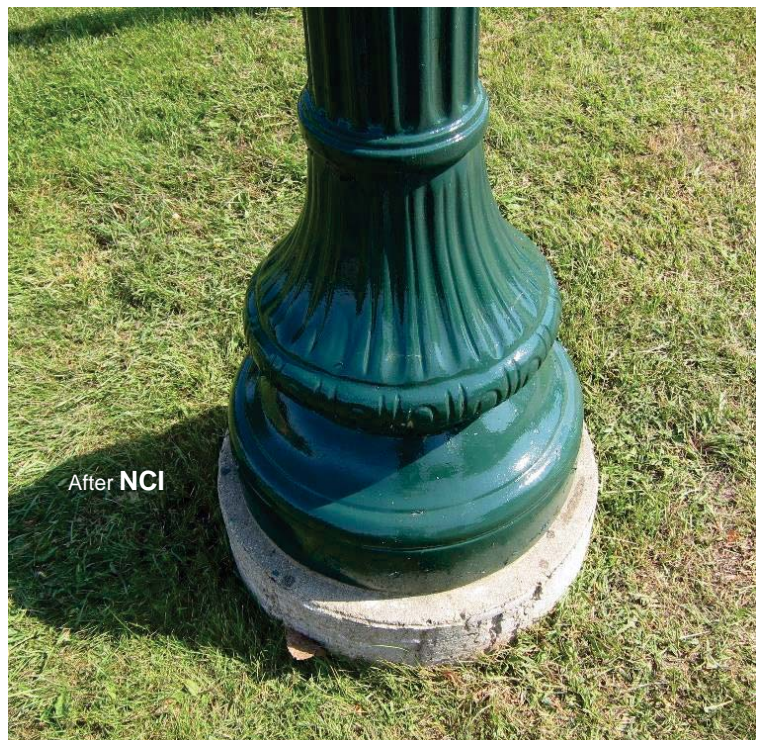
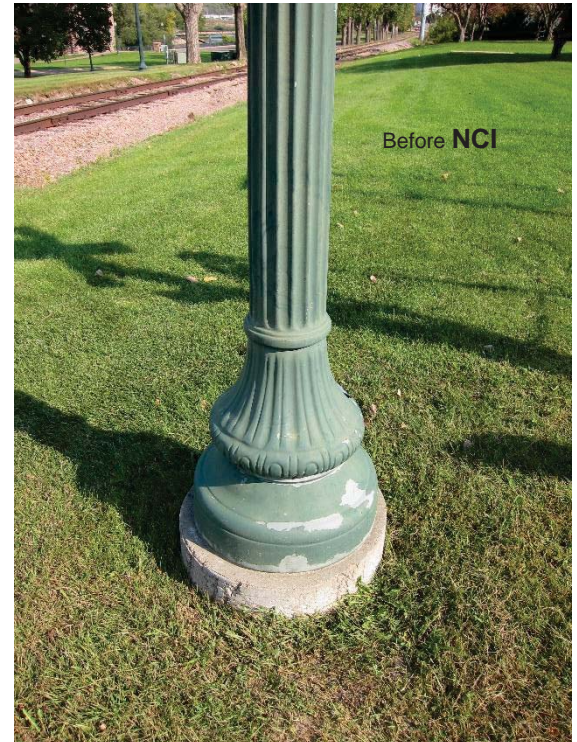
- The surface was washed with water and a sponge.
NOTE: In the future, the surface should be washed with a low concentration of biodegradable detergent and water using a sponge. Then the surface should be rinsed with water using a sponge.
- The light pole air dried, some areas were wiped with a cloth to speed drying.
Alternatively a blower could be used to blow off water, especially in the recesses of the decorative design.
- The light pole was not media blasted or wire brushed.
- Once the existing paint on the light pole was dry, it was ready for application.

Application:

The application of **NCI** was done with mohair paint rollers and a foam brush was used to coat the deeper recesses in the decorative design.

NCI may be applied with HVLP or airless spray equipment but in this situation it was windy and the light pole was close to a parking area - we did not want the overspray to land on any vehicles.

- In general, coat the surface of the existing paint with **NCI**, ensuring all areas of the painted surface are thoroughly coated - cross-hatching is recommended. Then go back to the coated area and maintain a smooth pass with the paint roller creating an even finish. Be careful not to roll too fast as that may create air bubbles in the finish. Once an acceptable finish is obtained stop working the **NCI** and allow it to "level", this will minimize the roller pattern. Because of the low viscosity of **NCI** (40cps) the finish will "smooth" out.
- The **NCI** was applied at the top of the light pole 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 of **NCI** to even the finish.



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Result:

Approximately 2 pints of **NCI** was used to cover the light pole.

Reviewing the coated light pole:

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

Time to complete coating the light pole was approximately 1 hour using a roller and brush. Using an HVLP spray gun would cut the application to less than ½ hour.

The **NCI** was almost tack free in approximately one hour.



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Close-up of the surface of the light pole after the application of **NCI** on 15 September, 2015.



DECORATIVE LIGHT POLE PROTECTION

A remarkable difference!

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



ABOVE GROUND STORAGE TANK PROTECTION

SUMMARY & CONCLUSION:

NCI was applied to a metal decorative light pole that had oxidized paint.

The paint was oxidized over the entire light pole. There were areas of paint delamination.

The substrate preparation prior to application of **NCI** was minimal – wash with water and a sponge. It is recommended to use a low concentration of biodegradable detergent in water 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 light pole for years deferring re-painting maintenance costs.

In the future, it is recommended the **NCI** be applied after new paint has been applied and/or earlier in the lifecycle of the paint system.

NCI does not replace paint systems - **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 light pole in 12 months – September 2016.

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, 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**

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