

NANO-CLEAR INDUSTRIAL COATING FOR COMFORT STATIONS



State of South Dakota Department of Game, Fish & Parks

Industrial Customer:

Department of Game, Fish & Parks

Project:

Coat the concrete block walls of comfort stations with Nano-Clear Industrial coating:

- create a long-lasting barrier to stop water migration through the concrete block/grout lines
- create a “tough” protective coating on top of the concrete block that will minimize maintenance clean-up of mineral deposits, efflorescence and soap scum on the walls.

Project Locations:

Aberdeen, SD

Madison, SD

Coating Formulation:

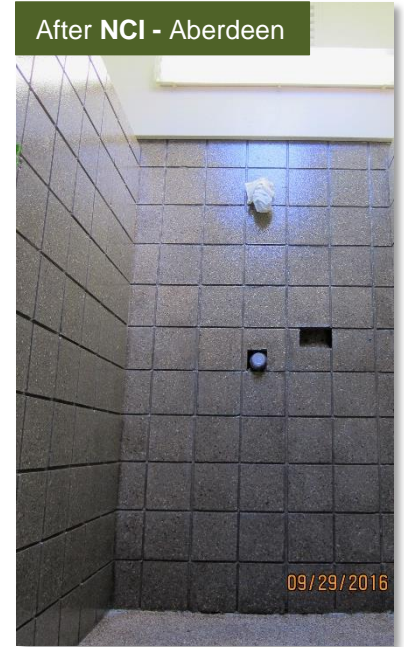
Nano-Clear Industrial (NCI) coating

Application System:

HVLP spray equipment

Dates:

Applications: Sept. & Oct. 2016



PROJECT OVERVIEW:

Aberdeen:

Nano-Clear Industrial (NCI) coating was applied to two of the concrete block walls of one shower stall, the third wall was left as a control wall.

Madison:

Nano-Clear Industrial (NCI) coating was applied to all the showers in both the women’s and men’s sides of the comfort station. In addition, NCI was applied to all the remaining concrete block walls in both the women’s and men’s sides of the comfort station.

Nano-Clear Industrial coating was spray applied to the prepared interior concrete block walls. The NCI penetrated the concrete block and grout lines to create a water migration barrier. Then, the NCI formed a “tough” coating on top of the concrete block and grout lines to protect the concrete block from “severe service” elements and reduce the maintenance required to keep the facilities clean for customers.

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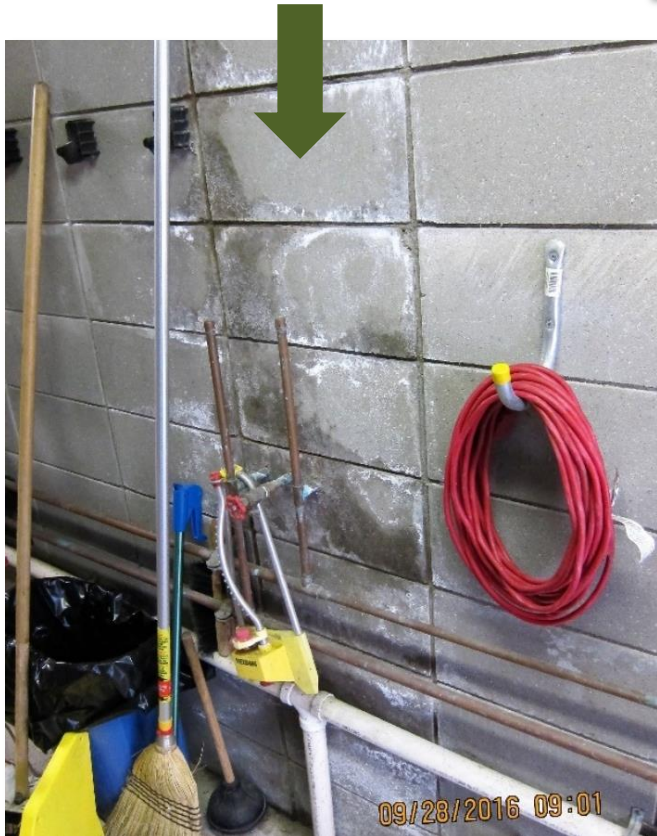
CURRENT SITUATION:

Over the years the sealant that had originally been applied to the comfort station interior and exterior concrete blocks had failed.

The interior concrete block had become increasingly difficult to clean. Water mineral deposits and soap scum accumulated on the walls; efflorescence from the concrete formed on the walls. This has increased maintenance costs – more time required to clean the showers stalls; more material needed to clean the shower stalls.

A very serious problem that has begun is water migrating through the concrete block and grout lines to the opposite side of the concrete block initiating spalling/degradation of the concrete block on the utility hall side of the wall. Left unchecked, this damage will result in a very expensive concrete block replacement repair.

Example of mineral deposit, efflorescence and soap scum build-up.



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Exterior concrete blocks have no protection against the elements.



Exterior block w/ NCI - Madison



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ISUSA SOLUTION:

Nano-Clear Industrial coating is a crystal clear, aliphatic, moisture cured, one component polyurethane/polyurea hybrid formulation with extreme cross-link density for UV, chemical, and abrasion resistance.

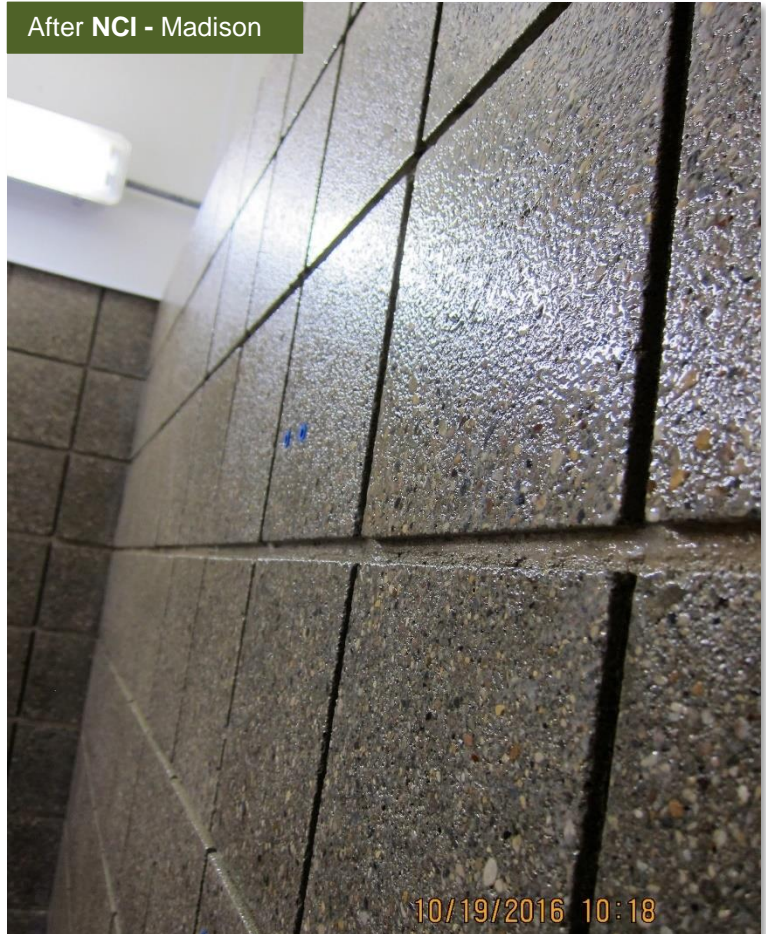
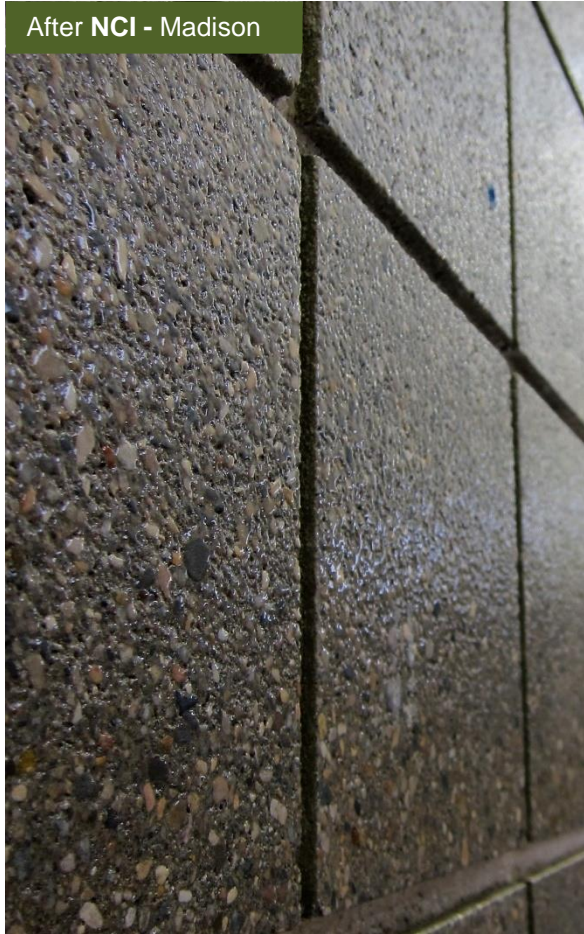
NCI is formulated to penetrate concrete and create an impervious barrier to water.

Nano-Clear is new cross-linking formulation technology that creates a “tough” protective coating on top of the concrete block for long-lasting protection.



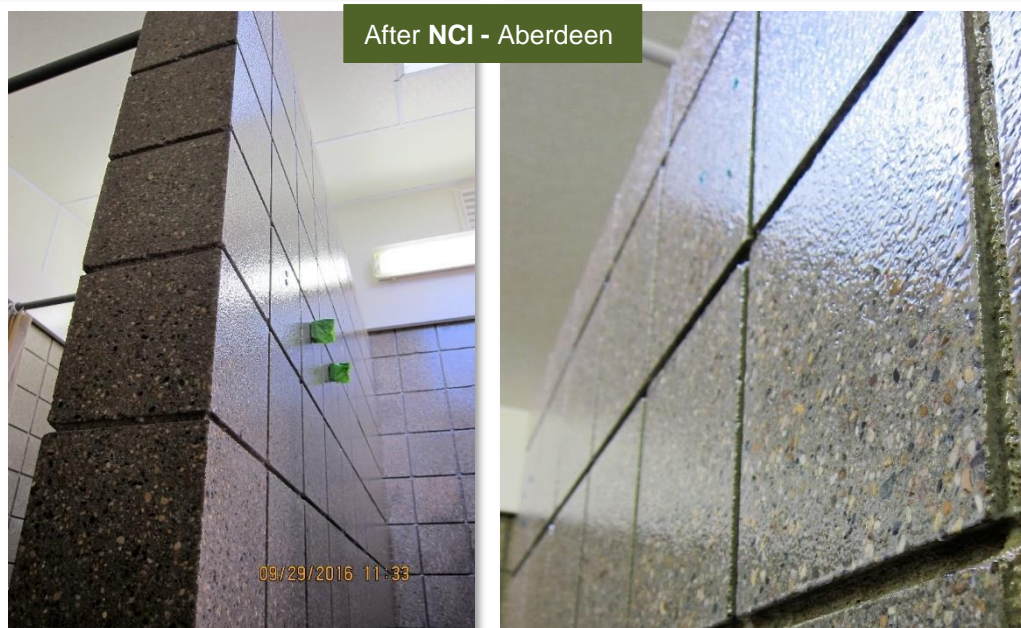
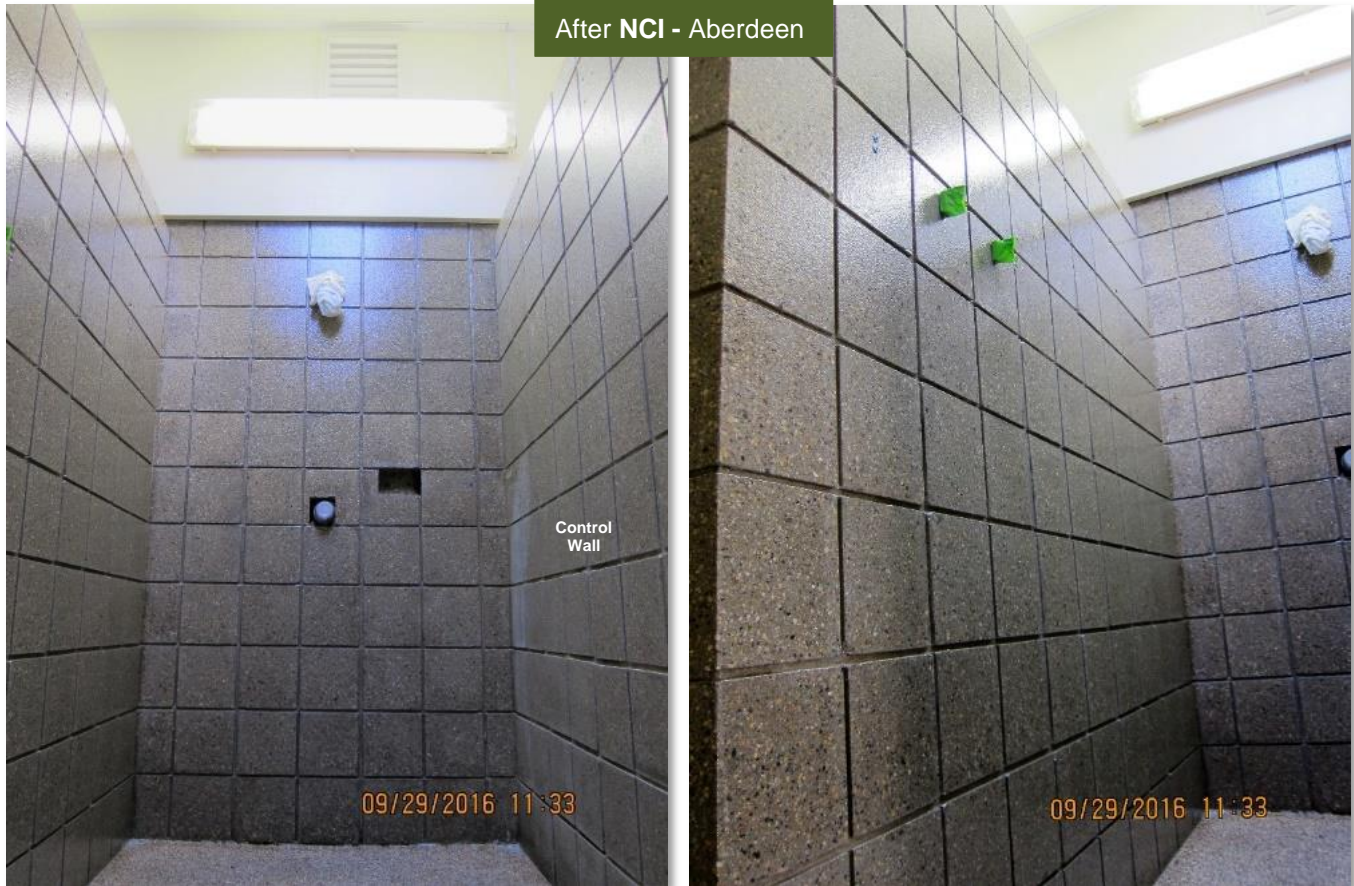
NCI is formulated to penetrate concrete to form an impervious barrier and to create a “tough” coating on the surface – reducing required maintenance resources (time and materials).

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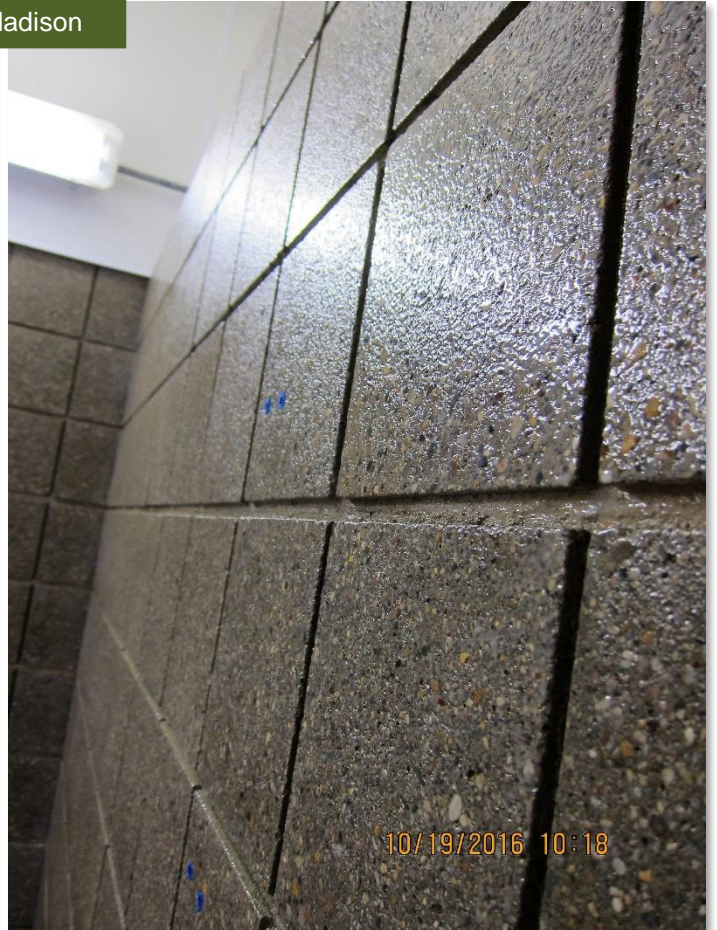


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After the application of Nano-Clear Industrial coating. Note the gloss and thorough coverage.



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SUMMARY & CONCLUSION:

Review of the coated walls:

- The overall finish was very good, the Nano-Clear penetrated the prepared concrete blocks and grout lines.
- After allowing the first coats to flash off, the succeeding coats formed a “tough” protective coating on top of the concrete blocks.
- The finish was even, monolithic and had high gloss.
- The color of the walls was enhanced; evened out.
- The resulting protective dry film thickness was approximately 1-2 mil which will yield at least 10 years of protection and most likely 15-20 years of protection.

The Nano-Clear coating system will protect the concrete blocks in the comfort station allowing for longer service life and easier maintenance (no need to power wash the shower stalls, just a soft/medium bristle broom/brush and detergent).

Nano-Clear Industrial coating is the economical solution *to extend the performance life* of assets.

CALL TO ACTION:

Inspect the Aberdeen and Madison application in September/October 2017.

Incorporate Nano-Clear Industrial coating into South Dakota’s Game, Fish & Parks maintenance program to extend the service life of:

- Comfort stations – interior and exterior
- Vault toilets
- Doors
- Signs
- Gates
- Cash boxes



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