

WHY HIRE AN INDEPENDENT, THIRD-PARTY INSPECTOR ON

HIGH PERFORMANCE COATINGS PROJECTS?

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ABSTRACT

If you are an experienced coatings individual this presentation might bore you. I am just giving you fair warning because this presentation is geared to those of you who are NOT knowledgeable in this industry. By that I mean owners, engineers, or architect and people who have no real coatings experience.

Hiring an independent 3rd party coatings inspector should be written into the coating specifications of all high-performance coatings' projects because of the complexity inherent in this industry; particularly in the complexity in the standards which govern a project's successful completion.

I will focus on actual projects I have been involved in as I proceed to give those of you who are NOT deeply involved in the coatings industry an idea of the complexity of these standards industry. How complex?

First of all, both NACE & SSPC EACH HAVE CERTIFICATION PROGRAMS!

The NACE International Institute Contractor Accreditation Program (NIICAP) is an industry managed accreditation program that validates a contractor's quality assurance program, support practices, and production processes.

SSPC established the Coating Application Specialist (CAS) Certification Program for industrial painters in 2008, at present there are 8 standards for applicators. It includes QP1 FIELD APPLICATION TO COMPLEX INDUSTRIAL AND MARINE STRUCTURES, QP2 FIELD REMOVAL OF HAZARDOUS COATINGS and QP3 SHOP PAINTING ACCREDITATION PROGRAM.

I have more than a few examples to emphasize how complex these NACE/SSPC Standard really are and in this presentation, they take shape from real life scenarios.

CASE #1: "I Pressure Washed It"

My first example take place in the hills of Pennsylvania at a rehabilitated water treatment plant where paint is delaminating from a below ground concrete wall. Twelve inches of concrete separate the failure from a lined filtration basin.

The phone call came into my office and a voice on the other end of the phone said, "Your paint is coming off the walls of the basement of our Water Treatment Plant that we just finished rehabilitating".

If you didn't know, coatings manufacturers always receive these types of calls first. Why? Because they made the coating that is failing. Well, as Hank Williams once said, "I've been down that road before".

My response is always the same, "Do you have a copy of the coating spec?" Why? Because you MUST start at the beginning. The spec was forwarded to me for my analysis.

The engineering firm was a regional powerhouse who had a "corporate spec" and it was indeed sound. It has been written using all the normal standards in a very simple, straightforward way. It called for an SSPC-SP 13/NACE #6 Surface Preparation of Concrete procedure that also incorporates ASTM D4258 and ASTM D4259. Lastly, the spec said that the concrete prior to painting should resemble ICRI CSP 2-3 in relation to the ICRI Technical Guideline No 310-2

Let's talk about these standards and what they mean.

ASTM D4258 and SP 13/NACE 6 - THE CONCRETE MUST BE FREE OF CONTAMINATION

These standards are listed to make sure that the substrate, when cleaned, contains no contamination on the substrate prior to the next step in the Surface Preparation phase. The concern would be that contamination might remain on the substrate and be further driven into the concrete by the removal of the laitance which is the weakest layer of concrete. Laitance is sort of like mill scale. It MUST be removed, or it stands the chance of coming off due to the forces of nature or physics.

ASTM D4259 and SP 13/NACE 6 THE CONCRETE MUST HAVE A SURFACE PROFILE OR ANCHOR PATTERN

"This practice includes surface preparation of concrete to prepare the surface prior to the application of coatings. This practice IS intended to alter the surface profile of the concrete and to remove foreign materials and weak surface laitance". Those two sentences are from the SCOPE section of ASTM D4259.

ICRI Technical Guideline No 310.2 is a standard which basically say "THE CONCRETE SHOULD LOOK LIKE THIS" after it has received the correct surface preparation CSP designation which is based on the amount of coatings which will be applied to the blasted concrete surface.

They are visual standards that look like this:



ICRI Technical Guideline No 310.2 is technically referred to as ICRI TECHNICAL GUIDELINE NO. 310.2R-2013, SELECTING AND SPECIFYING CONCRETE SURFACE PREPARATION FOR SEALERS, COATINGS, POLYMER OVERLAYS, AND CONCRETE REPAIR

A site visit was arranged and I, of course, arrived early which is a policy of mine. Being in the right place at the right time is an art. Soon after I arrived the sales rep showed up. We discussed some potential reasons for the delamination of the coating and in no time the painting contractor arrived.

I was introduced to the painter by the sales rep and he could see I had a copy of the spec in my hands. I mentioned that the spec called for an SSPC-SP 13 and he looked at me realizing that I knew he did not abrasive blast the walls. He looked me in the eye and said, "I power washed the walls".

Now, because I have a lot of experience in this industry, I immediately – without even looking at the failed coating – knew what had happened.

We inspected the failed coating.



and I asked the owner's representative if I could take some of the failed chips. He remarked, "Help yourself".

When you prepare vertical concrete efficiently, you remove the laitance and are left with bugholes, honeycombs, or voids in the concrete which must be filled in with an epoxy resurfacing compound otherwise known as "Bughole Filler". A properly prepared concrete surface before application of the "bughole filler" would look something like this:

