TECHNICAL BULLETIN 111

Subject: Ferrous Metal Surface and Substrate Preparation

SSPC-SP10 or NACE 2 – Near White Blast Cleaning / Dry Abrasive Blasting
A Near-White Blast Cleaned surface, when viewed without magnification, shall be free of all visible oil, grease, dirt, dust, mill scale, rust, paint, oxides, corrosion products and other foreign matter, except for staining. Staining shall be limited to no more than 5 percent of each square inch of surface area and may consist of light shadows, slight streaks or minor discoloration caused by stains of rust, stains of mill scale or stains of previously applied paint. Before blast cleaning, visible deposits of oil or grease shall be removed by any of the methods specified in SSPC-SP1 or other agreed upon methods. For complete instructions, refer to Joint Surface Preparation Standard SSPC-SP10/NACE 2.

SSPC-SP1 - Solvent Cleaning (used in conjunction with SSPC-SP10)
Solvent cleaning is a method for removing all visible oil, grease, soil, drawing and cutting compounds and other soluble contaminants. Solvent cleaning does not remove rust or mill scale. Change rags and cleaning solution frequently so that deposits of oil and grease are not spread over adjacent areas in the cleaning process. Be sure to allow adequate ventilation. For complete instructions, refer to Steel Structures Paint Council Surface Preparation Specification No.1.

SODA BLASTING METHOD – alternate to SSPC-SP10 or NACE 2.
Soda blasting is a non-destructive method for many applications in cleaning, paint stripping, industrial equipment maintenance, rust removal, graffiti removal, molecular steel pacification against rust, oil removal by saponification and translocation, masonry cleaning and restoration, and soot remediation. The soda blasting material consists of formulated sodium bicarbonate (also known as baking soda) having a crystalline structure that has a naked eye appearance of course granular sugar as opposed to the conventional powdery baking soda. Blasting soda is an extremely friable material that has micro fragmentation on impact, literally exploding away surface materials without damage to the substrate. Blasting soda is specially formulated and processed sodium bicarbonate (baking soda) that is nonabrasive, dissolves in water, and is formulated to be pure and free flowing. Blasting soda is typically packaged in easy to handle 50 lb bags. Approved for use by FDA, USDA, CODEX, USP, and EPA.

In the functional process of soda blasting you will use a piece of specialty equipment which is a self contained system that includes a blast generator, high pressure compressed air, moisture decontamination system, blast hose with remote controls, and a blast nozzle that is capable of handling dry or wet blasting material.

When Soda Blasting is used as the surface preparation method in removing old paint and rust in preparation of a protective coating or bonding agent, other phenomenon occur that are unique to the process. Soda Blasting will remove electrolytes, such as acids and chlorides, which is referred to as a passivity process to the metal. The result is that the metal will not have activated anode and cathode steel molecules, which can be observed by the absence of rust over, bare metal after extended periods. Sandblasted and mechanically cleaned surfaces will rust in as little as a matter of hours.

IMPORTANT NOTE:
When possible MM Systems recommends the removal of all ferrous steel used in conjunction with the forming and construction of blockouts and structural expansion joint openings in concrete structures. It is our experience that it is not a matter of “if” the ferrous steel will rust (even after surface treatment) but rather “when” rusting will begin. The propagation of rust may eventually cause delamination of adhesives or sealants that were originally bonded to the steel surface.

MM Systems is providing this information as a courtesy. While every precaution is taken to ensure that all information is as accurate, complete, and useful as possible, MM Systems does not assume responsibility or incur any obligation resulting from the use of methods or information contained herein.

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