ORIGINATION FORM

Date: 9-29-2012
Originator: Paul Vinik
Contact Information: 352-955-6686; paul.vinik@dot.state.fl.us

Specification Title: Coating Structural Steel
Specification Section, Article, or Subarticle Number: Section 560

Why does the existing language need to be changed? To incorporate electronic conductivity meters and to clarify intent on caulking and stripe coating.

Summary of the changes:

Are these changes applicable to all Department jobs? Yes, all jobs that involve painting of structural steel**.**
If not, what are the restrictions?

Will these changes result in an increase or decrease in project costs? Conductivity measurements will result in a reduced cost to contractors.
If yes, what is the estimated change in costs? Depends on surface area of project.

With who have you discussed these changes? Industry, Districts

What other offices will be impacted by these changes? Construction and Maintenance.

Are changes needed to the PPM, Design Standards, SDG, CPAM or other manual? No

Is a Design Bulletin, Construction Memo, or Estimates Bulletin needed? No, these changes will make DCE memorandum 14-12 suitable to be expired.

Contact the State Specifications Office for assistance in completing this form.
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M E M O R A N D U M

DATE: November 14, 2012

TO: Specification Review Distribution List

FROM: Trey Tillander, State Specifications Engineer

SUBJECT: Proposed Specification: **5600204 Coating Structural Steel.**

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change.

This change was proposed by Paul Vinik of the State Materials Office (SMO) to allow the use of an electronic conductivity meter for soluble salts testing and to clarify application intent for caulking and stripe coating.

Please share this proposal with others within your responsibility. Review comments are due within four weeks and should be sent to Mail Station 75 or to my attention via e-mail at SP965TT or trey.tillander@dot.state.fl.us. Comments received after **December 12, 2012,** may not be considered. Your input is encouraged.

TT/dt
Attachment

COATING NEW STRUCTURAL STEEL.
(REV ~~10-1-13~~29*11-13-12*)

SUBARTICLE 560-2.4 (Page 743) is deleted and the following substituted:

560-2.4 Soluble Salts Test Kit: Use a soluble salts test kit in accordance with SSPC-Guide 15 utilizing a Class A retrieval method. ~~-~~Ensure the test sleeve or cell creates a sealed, encapsulated environment during ion extraction and is suitable for testing all structural steel surfaces. *As an alternative~~ly~~, ~~the followinganyuse only~~ electronic conductivity meters approved for use by the ~~State Materials Office (SMO) and listed on the SMO website~~Engineer may be used~~: ARP soluble salt meter, Model #RPCT-070001, the Salt Smart manufactured by Innovative Productivity Inc., or a Brestle Patch in conjunction with a Horiba B-173 Twin Cond Conductivity Meter~~.*

SUBARTICLE 560-2.5 (Page 743) is deleted and the following substituted:

560-2.5 Abrasives: Use properly sized abrasives to achieve the required cleanliness and anchor profile. Use abrasives meeting the requirements of SSPC-AB 1, Mineral and Slag Abrasives, SSPC-AB 2, Cleanliness of Recycled Ferrous Metallic Abrasives, or SSPC-AB 3, Newly Manufactured or Re-Manufactured Steel Abrasive and do not introduce any contamination that interferes with the coating application and performance.

Provide certification to the Engineer that the abrasives used meet the requirements of this Section and do not contain any chlorides and other salts.

For non- metallic abrasives verify compliance with the conductivity and cleanliness requirements of SSPC-AB1. For recycled abrasives, verify compliance with the conductivity and cleanliness requirements of SSPC-AB 2 after each recycling or more frequently if required by the Engineer. Select a sample from each recycling machine in use and conduct the water-soluble contaminant and oil content tests outlined in SSPC-AB 2 at least one time each week or more frequently if directed by the Engineer. Conduct the non-abrasive residue and lead content tests as directed by the Engineer. If test results do not meet requirements, notify the Engineer immediately, remove and replace the abrasive, clean the recycling equipment, and conduct tests each day to confirm the equipment is functioning properly. Return to the weekly testing interval as directed by the Engineer.

SUBARTICLE 560-6.3 (Page 744) is deleted and the following substituted:

560-6.3 Quality Control Inspectors in the Shop and Field: Provide documentation to the Engineer that all personnel performing quality control inspections are certified at a minimum as a National Association of Corrosion Engineers (NACE) Coating Inspector Level I or a SSPC Level 1 Bridge Coating Inspector and that they report directly to a ~~*the Contractor's*~~ Quality Control Supervisor who is certified either as a NACE Coating Inspector Level 3 or a SSPC Level 2 Bridge Coating Inspector.

SUBARTICLE 560-7.4 (Page 745) is deleted and the following substituted:

560-7.4 Washing: Wash all steel surfaces in accordance with the requirements of SSPC-SP 12 *LPWC WJ4*.

SUBARTICLE 560-7.5 (Page 745) is deleted and the following substituted:

560-7.5 Soluble Salts Detection and Removal: *When using SSPC Guide 15, Class A retrieval methods,* ~~D~~*d*etermine the chloride, sulfate and nitrate concentrations on all steel surfaces using soluble salts test kits meeting the requirements of 560-2.4. Measure the concentration levels using the method described in SSPC-TU 4. Perform the tests after washing and after each applied coat of the coating system. *Ensure the non-visible surface contaminant concentrations on blast-cleaned surfaces do not exceed the levels in SSPC-SP 12 Table A1 NV2 for chloride, soluble ferrous iron and sulfate and 10 µg/cm^2 for nitrate. When using electronic conductivity meters, use meters meeting the requirements of 560-2.4 and measure the surface conductivity as prescribed by the manufacturer. The instrument shall be properly calibrated and maintained* ~~*per*~~*according to the manufacturer's recommendations. Ensure the surface conductivity does not exceed 70- micro-Siemens per centimeter squared. For either contaminant assessment method (salt test kits or conductivity meter)* ~~T~~*t*est three random locations in the first 1000 square feet and one random location for each subsequent 1000 square feet. ~~Ensure the non-visible surface contaminant concentrations on blast-cleaned surfaces do not exceed the levels in SSPC-SP 12 Table A1 NV2 for chloride, soluble ferrous iron and sulfate and 10 µg/cm^2 for nitrate.~~ When any concentration *or conductivity measurement* exceeds *the*~~*se*~~ *levels given above,* ~~these levels~~ rewash the entire surface area and retest. If additional washing does not reduce the concentration to the acceptable level, a surface treatment or water additive may be used. Use a surface treatment or water additive that is approved by the coating system supplier and the Engineer.

SUBARTICLE 560-7.7 (Page 745) is deleted and the following substituted:

560-7.7 Hand and Power Tool Cleaning: Prepare steel by power and hand tool cleaning as defined in SSPC-SP 11, *SSPC-SP 15,* SSPC-SP 3, and SSPC-SP 2 for touch up and repair when approved by the Engineer. Use SSPC-VIS 3 as an aid in establishing cleanliness.

SUBARTICLE 560-9.3 (Page 746) is deleted and the following substituted:

560-9.3 Sealing Using Caulk: *Apply caulk after the intermediate coat has fully cured and before application of the finish coat.* Completely seal the perimeter of all faying surfaces, cracks and crevices, joints open less than 1/2 inch, and skip-welded joints using caulk. Apply the caulk to the joint following the caulk manufacturer's recommendations. Ensure the caulk bead has a smooth and uniform finish and is cured according to the caulk manufacturer's ~~recommendation~~ *curing schedule* prior to the application of the *finish* coat~~ing system~~. *It is unnecessary to caulk cracks and crevices less than* ~~*3 thousandths of an*~~*0.003* ~~*-*~~*inches in width, located on the interior surface area of box girders.*

SUBARTICLE 560-9.7 (Page 747) is deleted and the following substituted:

560-9.7 Stripe Coating: Apply stripe coats to achieve complete coverage and proper thickness on welds, corners, crevices, sharp edges, bolts, nuts, rivets, and rough or pitted surfaces. *Subsequent coats shall not be applied until the stripe coat has ~~fully~~ cured per the manufacturer's product data sheet for recoating.* Stripe coating is not required for the inside surface area of all steel box girders.

SUBARTICLE 560-9.8 (Page 747) is deleted and the following substituted:

560-9.8 Thickness of Coats: Apply coatings to the thickness as identified in the manufacturer's product data sheet. After application of each coat, thoroughly inspect the surfaces and measure the dry film thickness (DFT) in accordance with SSPC-PA 2. *As an exception to SSPC-PA2, the DFT of the prime coat shall not be less than the minimum specified by the manufacturer's product data sheet.* When the DFT is deficient or excessive, correct in accordance with the coating manufacturer's recommendations and retest the area.