ORIGINATION FORM

THE INFORMATION BELOW IS TO BE PROVIDED BY THE ORIGINATOR

☒ Modify Specification _____9750000SS_____.
Section/File number

☐ New Section _____.
Section number

Subject: Elastomeric Coating System – Anti-Graffiti Coating Materials

Origination date: January 25, 2006

Originator: Dale Cook
Office/Phone: State Maintenance Office/ 410-5757 suncom: 210-5757
Email address/ Userid: dale.cook@dot.state.fl.us

Problem statement: The specified material composition in the current Spec 563 has limited the manufacturer's that can apply for QPL status as follows:

1. Only those using a carbon based polymer material with limited formulations can apply. This was not the intent at the time of the rewrite. Extensive research was done on the existing materials at the time but the way the spec was rewritten, this has eliminated new technology such as siloxane and silicon based materials and more common materials with different formulations.
2. The volatile organic content (VOC) limits required in Spec 563 are 3 to 6 times below that of the official EPA limits for anti-graffiti coatings as defined in 40 CFR Part 59, Subpart D. It appears the limits in Spec 563 were a combination of product and material achievable values and the EPA requirements for structural coatings (as in paint).
3. To date, only one manufacturer has been able to qualify as a sacrificial coating and no manufacturers have qualified as non-sacrificial coatings on the QPL.
   In addition, the current specification does not require any graffiti-removal performance based testing.

Information source: The Department is prepared to support cleaning of nonsacrificial coatings. The State Maintenance Office has opened pay items for cleaning of graffiti at the District's request.

Background data: A preliminary investigation into alternate anti-graffiti materials and formulations has identified that the costs per square foot are comparable to the existing QPL material and they will meet the EPA VOC requirement of 600g/L maximum

In 2000, a FDOT team rewrote the existing Specification 563. The rewrite did not contain any performance criteria for removal of graffiti, but did contain a summary of the formulation requirements for sacrificial and non-sacrificial coatings. The file indicates that the team had a copy of the "Guidelines for Graffiti Removal and Protection Technologies", Prepared by the Highway Innovative Evaluation Center (HITEC) in 1998, as well as "Anti-Graffiti Systems and Cleaners", Northeastern Association of State Highway and Transportation Officials Regional Testing Program, June 1997. Both of these documents outlined performance criteria for anti-graffiti coatings and removal of graffiti, but this information was not included in the specification change. In addition, there does not appear to be any record of the team comparing the EPA requirements for anti-graffiti vs. industrial coatings categories for VOC.

The performance of anti-graffiti technology, that is its ability to perform its intended task, is the most important evaluation criteria. Performance requirements of anti-graffiti coatings can be classified into three categories: durability, functionality, and properties. Durability is defined as the ability to remain in place and function as intended. Functionality is defined as capable of preventing the adhesion of graffiti and/or facilitating the removal of graffiti. Other important properties are inherent characteristics of coating materials such as resistance to fluids, color, gloss, and appearance.

Recommended Usage Note: All Jobs

Desired implementation date: Beginning with the January 2007 letting.

Florida Department of Transportation

JEB BUSH
GOVERNOR

605 Suwannee Street
Tallahassee, FL 32399-0450

DENVER J. STUTLER, JR.
SECRETARY

M E M O R A N D U M

DATE: March 3, 2006

TO: Specification Review Distribution List

FROM: Duane F. Brautigam, P.E., State Specifications Engineer

SUBJECT: Proposed Specifications Change: 9750900 - Structural Coating Materials

In accordance with Specification Development Procedures, we are sending you a copy of a proposed specification change to Section 975.

This change was proposed by Dale Cook of the State Maintenance Office to add Anti-Graffiti Coating material requirements.

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 SP965DB or duane.brautigam@dot.state.fl.us. Comments received after March 31, 2006 may not be considered. Your input is encouraged.

DFB/jf

Attachment

COMMENTS:

Submitted by: Phone #:

STRUCTURAL COATING MATERIALS.
(REV 2-16-06)

SECTION 975 (of the Supplemental Specifications) is expanded by the following new Article:

975-9 Anti-Graffiti Coating Materials.

975-9.1 General Requirements: Anti-graffiti coatings intended for use under this specification shall be of a composition to be capable of preventing the adhesion of graffiti and/or facilitating the removal of graffiti. All anti-graffiti coatings must possess the physical and handling characteristics that are compatible with the requirements of Section 563.

Anti-graffiti coatings shall contain less than 600 g/L ~~[5.0 lb/gal]~~ volatile organic compounds (VOC) as defined by 40 CFR Part 59, Subpart D.

The manufacturer will supply the following additional information:

a. Cleaning instructions and materials, as applicable. Surfaces must be cleanable with nonproprietary cleaners as defined in ASTM D6578.

b. Sacrificial Coating Removal instructions, as applicable.

c. Recommended base coat, as applicable.

d. Identification of coating system and type, as applicable.

e. Clear coats must contain a UV degradable color for inspection purposes. UV degradable color must dissipate in a reasonable time period to allow inspection but not detract from visual impact of the structure.

975-9.2 Material Tests: Meet the following requirements:

Additional Laboratory Performance and Tests		
Test	Method	Limits
Accelerated Weathering	AASHTO R-31	No blistering, cracking, checking, chalking, or delamination; color change less than 1 Delta E CIE LAB units; Retention of 60° Gloss ratio >= 0.80
Abrasion Resistance	ASTM D968, 1,000 liters of sand	No loss of coating thickness per ASTM D1005
Impact Resistance	ASTM D2794	Minimum of 30 inch-pounds
Graffiti Resistance	ASTM D6578, Use identified marking materials; initial and recleanability; and after exposure initial and recleanability	Cleanability Level 1, 2, or 3.
Sacrificial Coating removability	Per Manufacturer's specifications: 6 months exposure at FDOT test site	Complete removal of material from substrate
MEK Double Rub	ASTM D 5402; 50 rubs	No coating wear through (4 minimum rating)

Additional Laboratory Performance and Tests		
Test	Method	Limits
Fluid Resistance	ASTM D1308; Paint Thinner, Gasoline	No blistering, discoloration, softening or adhesion loss.