



## Florida Department of Transportation

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SECRETARY

May 21, 2007

Dr. Leslie McCarthy, PhD, P.E.  
Program Operations Engineer  
Federal Highway Administration  
545 John Knox Road, Suite 200  
Tallahassee, Florida 32303

Re: Office of Design, Specifications  
Section 975  
Proposed Specification: **9750007**

Dear Dr. McCarthy:

We are submitting, for your approval, two copies of a proposed Supplemental Specification for Painting Galvanized Strain Poles, Mast Arms and Monotube Assemblies.

This change was proposed by Paul Vinik of the State Materials Office to establish the adhesion and color retention requirements for painted galvanized strain poles, mast arms and monotube assemblies.

Please review and transmit your comments, if any, within two weeks. Comments should be sent via Email to SP965DB or [duane.brautigam@dot.state.fl.us](mailto:duane.brautigam@dot.state.fl.us).

If you have any questions relating to this specification change, please call Duane F. Brautigam, State Specifications Engineer at 414-4110.

Sincerely,

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

DFB/dr

Attachment

cc: General Counsel  
Florida Transportation Builders' Assoc.  
State Construction Engineer

**PAINTING GALVANIZED STEEL STRAIN POLES, MAST ARM ASSEMBLIES AND MONOTUBE ASSEMBLIES.**

**(REV 4-05-0727 5-10-07)**

ARTICLE 975-7 (Pages 882 and 883) is deleted and the following substituted:

**975-7 *Painting* Steel-Strain Poles, *Steel*-Mast Arms and *Steel*-Monotube Assembly*ies* Coatings.**

**975-7.1 General:** *Paint systems used on galvanized steel steel-l sstrain poles, galvanized steel steel-mast arms and galvanized steel steel-monotube assemblies shall meet the color requirements as specified in the Contract Documents and shall exhibit no loss of adhesion or loss of color greater than 68ΔEs for five years after final acceptance as specified in 5-11. A rating less than 4A per ASTM 3359 on any steel signal mast arm assembly strain pole, steel mast arm or steel monotube assembly that also exhibitings a cumulative surface area of peeling delamination in excess top coat paint in excess of 100 square inches will constitute an adhesion failure. Delamination shall be defined as any area of exposed metal surface subsequent to hand tool cleaning in accordance with SSPC-SP2. A change in the coating color in excess of 68ΔEs per the CIE L\*a\*b\* 1976 will constitute a color retention failure. The Department will measure the CIE 1976 color chromaticity coordinates for the color of the top coat of the two sample coupons provided with a BYK-Gardner Handicolor colorimeter- using D65 illuminant and 2 degree geometry Thesettings. The Department measured L\*a\*b\* chromaticity coordinates shall define the initial color and will used for resolution of color retention failures and the resolution of color retention disputes. All disputes. All coatings paint systems must possess physical properties and handling characteristics that are compatible with the application requirements of Section 649. All top coats must create a finished surface that is visually uniform and resistant to color and gloss degradation. Materials must be specifically intended for use over galvanized steel. Furnish product testing information according to AASHTO R-31, Section 8 and using galvanized KTA Flat test panels: the coating should not blister, soften or loosen bond at the end of the test period; there will be no primer creep, blistering or loss of adhesion relative to a scribed line applied prior to testing exceeding 0.05 inch at any point at the scribe and no corrosion in the field per ASTM D 610; color retention, ΔE≤3, in accordance with ASTM D 2244; and 10% max gloss loss in accordance with ASTM D 523.*

Additional Laboratory Performance and Tests		
Property	Test Method	Limits
Impact Resistance	ASTM D 2794, 30 inch/lbs	Pass
Elongation	ASTM D 522, 1/2 inch cylindrical mandrel	No cracking
Chemical Resistance	ASTM G 20, 180 days: 5% Ammonia, 5% Urea, and Diesel fuel	The coating should not blister, soften or loosen bond at the end of the test period

~~\_\_\_\_\_ The default finish coat must meet Federal Color Standard No. 595B, Table VIII, Shade No. 36622 unless otherwise specified by the Engineer.~~

~~\_\_\_\_\_ **975-7.2 Composition Requirements:** Coating systems must meet the requirements of Section 649 and 975-5 intermediates and finish coats.~~

~~\_\_\_\_\_ **975-7.3 Field Qualification:** Attain a numerical rating of not less than 9 in accordance with ASTM D 610 and ASTM D 1654 and 9F in accordance with ASTM D 714 when applied to galvanized KTA Flat test panels and exposed at the Department's beach corrosion test site or applied at a test location. The coatings will be evaluated initially following an exposure period of 18 months. The coatings must continue to provide acceptable protection and performance for a period of 5 years. Application Characteristics must be judged acceptable prior to beach testing.~~

**PAINING GALVANIZED STEEL STRAIN POLES, MAST ARM ASSEMBLIES  
AND MONOTUBE ASSEMBLIES.**

**(REV 5-10-07)**

ARTICLE 975-7 (Pages 882 and 883) is deleted and the following substituted:

**975-7 Painting Strain Poles, Mast Arms and Monotube Assemblies.**

Paint systems used on galvanized steel strain poles, galvanized steel mast arms and galvanized steel monotube assemblies shall meet the color requirements as specified in the Contract Documents and shall exhibit no loss of adhesion or loss of color greater than  $8\Delta E_s$  for five years after final acceptance as specified in 5-11. A steel signal mast arm assembly or monotube assembly that exhibits a cumulative surface area of delamination in excess of 100 square inches will constitute an adhesion failure. Delamination shall be defined as any area of exposed metal surface subsequent to hand tool cleaning in accordance with SSPC-SP2. A change in the coating color in excess of  $8\Delta E_s$  per the CIE  $L^*a^*b^*$  1976 will constitute a color retention failure. The Department will measure the CIE 1976 color chromaticity coordinates for the color of the top coat of the two sample coupons provided with a BYK-Gardner Handicolor colorimeter using D65 illuminant and 2 degree geometry settings. The Department measured  $L^*a^*b^*$  chromaticity coordinates shall define the initial color and will be used for resolution of color retention failures and the resolution of color retention disputes. All paint systems must possess physical properties and handling characteristics that are compatible with the application requirements of Section 649. Materials must be specifically intended for use over galvanized steel.