



Florida Department of Transportation

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OFFICE OF MAINTENANCE MEMORANDUM 20-01

DATE: April 7, 2020

TO: Rudy Powell, District Maintenance Engineers, District Structures Maintenance Engineers

FROM: Jeffrey A. Pouliotte, P.E., State Structures Maintenance Engineer

DocuSigned by:
Jeffrey Pouliotte
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SUBJECT: Guidance for Metalizing Traffic Signal Mast Arms

In order to provide the Districts with flexibility for managing the inventory of Traffic Signal Mast Arms and provide economic savings to the State, the attached guidance has been developed for recoating Traffic Signal Mast Arms in place. This guidance can be used for metalizing Traffic Signal Mast Arms where peeling of paint, deterioration of the galvanizing material and corroding of the base metal is present, but the structural capacity remains. The Districts are encouraged to coordinate with the State Materials Office if they decide to use this guidance.

JAP/fp
Enclosures

Guidance for Metalizing Traffic Signal Mast Arms

Description

Coat steel Traffic Signal Mast Arms (TSMAs) using a thermal spray coating (metalizing) system with a zinc base coat.

Applicability

For TSMAs where peeling of paint, deterioration of the galvanizing and corroding of the base metal is present, but the structural capacity remains. Elements 8480 (Mast Arm Foundation), 8481 (Mast Arm Vertical Member – Metal) and 8484 (Mast Arm Horizontal Member – Metal) are in Condition State 3 or better.

Procedure

1. Perform a Life Cycle Cost Analysis, demonstrating that metalizing is the more economical alternative.
2. Develop Contract Plans, to determine the Maintenance of Traffic Operations by showing each traffic control phase.
3. Until a Developmental Specification exists that meets the specific requirements of this guidance, a Technical Special Provision shall be created and included as part of the Specifications Package.
4. Surface must be prepared by removing galvanizing with abrasives following the requirements from Specification 560.2-5. Surface must be abrasive blast cleaned to “near white” metal condition as defined in SSPC-SP 10/NACE No. 2. A minimum 5 mil angular profile is required on all surfaces. Measure along the base metal profile in accordance with ASTM D4417. If abrasive blast cleaning does not achieve the required angular profile to support the specified target value for adhesion strength, use surface grinding to remove all hardened surfaces due to previous galvanizing and repeat abrasive blast cleaning to achieve the required angular profile.
5. Apply metalizing in accordance with modifications to the Developmental Specification Section 564. The minimum adhesion value for zinc metalizing must be ≥ 500 psi.

Notes

1. Contact the State Materials Office (SMO) to determine if the location is applicable for metalizing without the need of a seal coat.
2. If a seal coat is needed, include the maintenance costs of this top coat in the Life Cycle Cost Analysis estimates. SMO may be able to recommend a clear seal coat that could reduce maintenance costs.
3. Most of the costs involved in recoating TSMAs are for containment, disposal, and Maintenance of Traffic, and not in the application of the coating.
4. TSMAs where environmental conditions are likely to cause accelerated deterioration of anchorage to foundation area (bolts, base plate, weld, and pole), may warrant consideration to metalize sooner.
5. A Technical Special Provision is needed because Developmental Specification Section 564 only addresses metalizing with aluminum and does not address metalizing over previous galvanizing.