



Bureau of Materials Materials Approval Procedures

MAP Number: **120-15**

Effective Date: April 1, 2015

Approved By: Eileen Sheehy

PROCEDURE FOR APPROVAL OF STRUCTURAL STEEL PAINT – EPOXY MASTIC (EU) PAINT SYSTEMS

PURPOSE:

To establish a procedure to approve Epoxy Mastic, Urethane (EU) Paint Systems for addition to the NJDOT Bureau of Material's Qualified Products List (QPL).

REFERENCES:

New Jersey Department of Transportation Standard Specifications for Road and Bridge Construction
Section 912.01.01

Materials Procedure MP-44, Infrared (IR) Spectrophotometry Analysis of Structural Steel Paint

Materials Procedure MP-34, Chemical Analysis of Structural Steel

ASTM B 117, Standard Practice for Operating Salt Spray (Fog) Apparatus

ASTM D 5894, Standard Practice for Cyclic Salt/Fog UV Exposure of Painted Metal (Alternating Exposure in a Fog/Dry Cabinet and a UV/ Condensation Cabinet).

AASHTO R 31, Standard Practice for Evaluation of Coating Systems with Zinc-Rich Primers

Society for Protective Coatings SSPC – SP2, SP3

New Jersey Department of Environmental Protection, New Jersey Administrative Code (NJAC)

Title 7, Chapter 27, Subchapter 23 – Prevention of Air Pollution From Architectural Coatings

PROCEDURE:

A. Manufacturer's Request for Approval.

The Manufacturer shall request in writing for the approval of the paint system. Include the following information in the request:

1. The name, address, and contact information for the manufacturer.
2. Technical datasheets for the primer and finish paints used in the system.
3. VOC data for the primer and finish paints used in the system.
4. Materials Safety Data Sheet (MSDS)

With the request, the manufacturer shall submit a quart sample of the components (Parts A and B) for the primer and finish paints for testing by the ME. The manufacturer also shall submit eight (8) panels prepared as shown in Figure MAP 120-1. Mail the request for approval and samples to the following:

Mailing Address (USPS):

Manager, Bureau of Materials (Thiokol Bldg. 4)
New Jersey Department of Transportation
P.O. Box 600
Trenton, NJ 08625-0600

Street Address(UPS, FedEx, etc.):

Manager, Bureau of Materials (Thiokol Bldg. 4)
New Jersey Department of Transportation
930 Lower Ferry Road
West Trenton, NJ 08628

B. Bureau of Materials Review of Test Data.

If the system meets the VOC content limits in NJAC 7:27-23, then the ME will test the submitted samples. If the data indicates that the paint system does not meet the VOC requirements, the ME will reject the paint system for approval.

C. Bureau of Materials Laboratory Testing

The ME will test two panels for 5000 hours of exposure to salt fog (ASTM B 117) and two panels for 5000 hours of exposure to cyclic weathering (ASTM D 5894). The ME will evaluate the test panels after exposure according to AASHTO R 31, Section 8.2.2. If the paint system meets the criteria listed in Table MAP 120-1 and Table MAP 120-2, the ME will approve the system. If the paint system does not meet the criteria in Table MAP 120-1 and Table MAP 120-2, the ME will reject the paint system for approval.

Table MAP 120-1 Salt Spray (Fog) Resistance (ASTM B 117)	
Maximum Creep @ 5000 hours ¹ (maximum)	4 mm
Maximum Creep @ 5000 hours ¹ (maximum)	2 mm
Blister Conversion Value @ 5000 hours ¹ (minimum)	6
¹ Evaluation of the specimens according to AASHTO R 31, Section 8.2.2.	

Table MAP 120-2 Cyclic Weathering Resistance (ASTM D 5894)	
Maximum Creep @ 5000 hours ¹ (maximum)	4 mm
Maximum Creep @ 5000 hours ¹ (maximum)	2 mm
Blister Conversion Value @ 5000 hours ¹ (minimum)	6
¹ Evaluation of the specimens according to AASHTO R 31, Section 8.2.2.	

If the paint system is approved, the ME will test each component of the paint system to establish a baseline and tolerance for acceptance of production run samples. The ME will establish the tolerance with the manufacturer for viscosity, weight per gallon, percent solids, percent pigment content and IR spectrophotometry.

PROJECT ACCEPTANCE REQUIREMENTS:

Qualification of a product and addition to the QPL does not constitute a blanket approval of the material. The Contractor for each proposed project must submit the product and source on a Materials Questionnaire as specified in Section 106. The ME will approve the product and source on a project to project basis based on the specifications for the project. The ME will sample, test and accept the material according to the applicable Section of the *NJDOT Standard Specifications for Road and Bridge Construction*.

DISQUALIFICATION:

The ME may remove the product from the QPL for non-conformance with specification requirements or for a documented history of poor field performance. The manufacturer shall notify the ME, in writing, of any change in product formulation. Failure to notify the ME of changes in product formulation will result in disqualification.

REQUALIFICATION:

The ME will reevaluate a product which has been disqualified and removed from the QPL only after submission of a formal request along with acceptable evidence that the problems causing the disqualification have been resolved.

The ME may require the manufacturer to requalify the product for any of the following reasons:

1. To ensure that obsolete products are not kept on the list, the ME may request written confirmation from the manufacturer that the product is still available and has not changed formulation. Failure to respond to the Bureau's written request will result in the product being removed from the list.
2. If the formulation of the product has changed, the ME may require that the new formulation be requalified.
3. If the Department's standard specifications change or if the referenced Standards change, the ME may require requalification to ensure that the product meets the new specification.

1. Use ASTM A-36 Steel only,
1/16" or 3/32" Thick.
2. Prepare and paint as follows:

Clean	SP-2,3
Alum. Epoxy Primer	3.0-5.0
Urethane Finish	2.0-3.0
3. Before painting, seal all edges
by soldering or high build epoxy.
4. After painting, mark scribe
down to bare steel as shown.
(Note: Scribing to be done by ME.)
5. Coat back of panel with prime
coat only.
6. Let coated test panel age for
14 days prior to testing.
7. Check all DFT of each coat with
magnetic DFT gauge (done by ME).

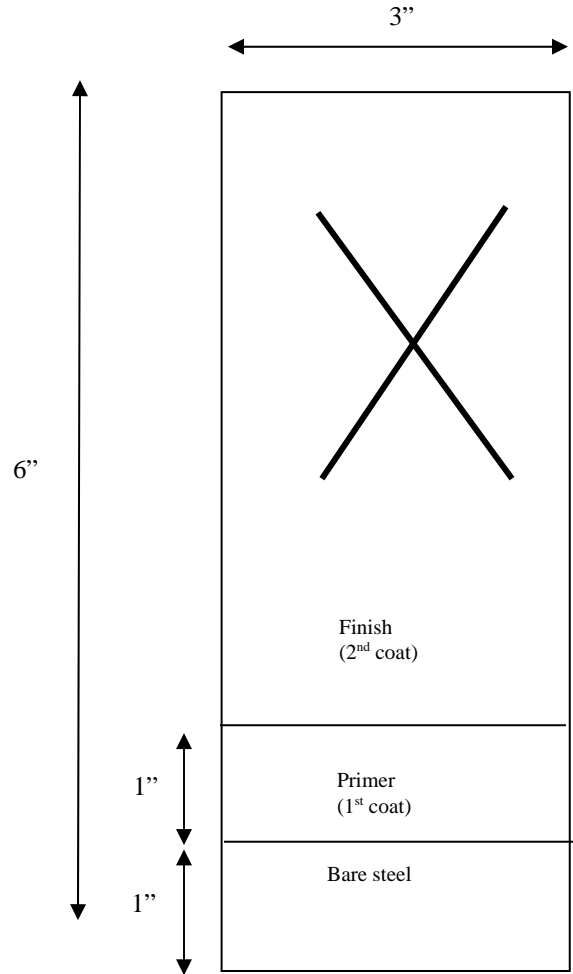


FIGURE MAP 120-1 - Preparation of Steel Test Panel for Salt Fog or Cyclic Weathering Testing.