BUREAU OF MATERIALS
MATERIALS PROCEDURES

MP NUMBER: 10-25
EFFECTIVE DATE: 03/03/2025

APPROVAL: *Edward Inman*

REINFORCING AND EPOXY COATED REINFORCING STEEL INSPECTION DUTIES

PURPOSE:

To establish standard procedures for the inspection and testing of reinforcing steel and epoxy coated reinforcing steel.

SUPERCEDES:

Materials Procedure Number 10 – Dated 07/01/2008.

REFERENCES:

Special Provisions, Supplemental Specifications, Standard Specifications, Addenda and Attachments
AASHTO M31 - Deformed and Plain Billet - Steel Bars for Concrete Reinforcement
ASTM-A615 - Deformed and Plain Billet - Steel Bars for Concrete
ASTM-A706- Deformed and Plain Low-Alloy Steel Bars for Concrete
Manual of Standard Practice - Concrete Reinforcement Steel Institute
AASHTO M285 – Bend Test for Bars for Concrete Reinforcement
ASTM-A775-Epoxy-Coated Reinforcing Bars

FORMS:

Site Manager Materials;

NJDOT Form LB-010
NJDOT Form LB-905

I. Assignment Procedure:

The inspector shall receive from their supervisor the following:

A. Plant location.

B. Project, if possible, and release numbers for the inspection to be performed.

C. Applicable bridge releases (approved by Bureau of Structural Design), road items or both.

II. Sampling Prior to Fabrication:

The inspector shall:

A. Report to fabrication shop when directed by the supervisor. Make presence known to responsible company representative.

B. Obtain notarized mill certifications for each sampled heat.

C. Obtain four 24" lengths of bar from each heat up to and including #6 bar; and four 30” lengths of bar for #7 and up.

D. Perform bend test on one bar from each heat sampled, if working schedule permits, and if bending machinery is available. If test bar cannot be bent in the shop, submit to laboratory for bend test.

E. Submit the three remaining bars to the laboratory for testing if the field bend test is acceptable, attaching LB-88 and LB-10 forms. If the bend test fails, randomly test two additional bars from the same heat. If any additional bars fail the bend test, reject heat and complete Non-complying Material report. If both additional bars pass the bend test, submit three bars to the laboratory for testing as above.

III. Duties during Fabrication

The inspector shall:

A. Compare approved bridge and road item releases with fabrications cutting lists. Check for approval stamps on cutting list/shop drawing.

B. Assure that fabrication is from approved heats.

C. Inspect bars utilizing approved cutting lists for length, size of bar, condition of bar, dimension of bends, grade and quantity. The Bureau

of Structural Design need not approve Road items.

D. Following completion of fabrication, tag all approved bundles with N.J.D.O.T. approval stamp. Place a railroad seal on the end of the longest bundle. The sealed bundle shall be located on the right side of the truck. If all bundles are tagged, railroad seal is optional.

E. Stamp the fabricator's copies of releases for their distribution to Resident Engineer and Bureau of Materials.

IV. Optional Inspection and Fabrication Procedures

(Shipment before Test Completion)

Inform the fabricator that if he exercises this option, it is his responsibility to replace the order if the sampled re-bar fails to comply.

The inspector shall:

A. Obtain from supplier all mill certifications pertinent to respective heats used during fabrication.

B. Utilizing approved cutting lists, inspect bars for length, size of bar, condition of bar, dimension of bends, grade specified and quantity. The Bureau of Structural Design need not approve Road items.

C. Obtain four, 30" samples for each heat used in fabrication.

D. Apply spray paint to the ends of sampled bundles if more than one bundle of a specific eat and size is to be furnished. Record heat numbers on sample tags.

E. Stamp each bundle "Sampled". Do not place railroad seal on truck shipment since bar acceptance is contingent upon approval of the heat.

F. Submit samples to the laboratory for testing within two working days and enter sample data into the AASHTO Site Manager Materials for acceptance testing.

The Supervisor shall:

A. If shipment is for epoxy coating, the coater will be informed of test results, if known, before coating. The coater will advise the Supervisor of his coating schedule.

Note: This may be done before epoxy coating, but this is generally not done for black bar.

V. Epoxy Coated Bar Inspection: Optional (If information is known)

The inspector shall:

A. Identify bars that are to be epoxy coated with approved releases. Mark bundles from fabricator with tags labeled "Sampled". Compare releases with coater's order release number of cutting list.

B. Confirm with supervisor that all release numbers are inspected and approved if tags indicate "Sampled".

C. Compare bar sizes with order or coater releases.

VI. Duties during Epoxy Coating Operation:

The inspector shall:

A. Assure that sand blasting of steel is near white blast. Take corrective action if bar is not properly cleaned.

B. Observe Holiday Detector on production feed line to assure proper operation. Check heating elements before and during coating. Pyrometer temperatures should indicate 800 degrees Fahrenheit for induction heating. Check water bath for proper cooling and for time after coating and before cooling.

C. Randomly check each heat for holidays with calibrated pin hole detector, or other device. Allow no more than 2 holidays per linear foot.

D. Check coating mil thickness with micro test thickness gauge according to ASTM A-775.

E. Make visual checks of all coated bars. Scratches on bars, or uncoated surfaces will require touch up with compatible epoxy material as recommended by the manufacturer. Maximum damaged area shall not exceed 2%.

F. Perform bend test (120 degrees) on randomly selected bar. Check for cracking or chipping in bend area.

G. Obtain certifications for epoxy coated steel.

H. Obtain manufacturer's certification for epoxy powder.

I. Place railroad seal on approved coated bars that are to be shipped directly to job site.

VII. Authority and Responsibility:

Bring to the attention of their supervisor any uncertainties regarding the quality of material, equipment, methods of operation or sampling. Document the discussion and the corrective action taken in inspector's diary.

VIII. Distribution of Forms:

Forms	Distribution
LB-10	1. Bureau of Materials File
LB-905	2. Fabricator/Manufacturer
	3. Resident Engineer
	4. Product Approval Group