HOW TO UTILIZE NTPEP DATA IN MAINTENANCE

DANNY LANE
TENNESSEE DEPARTMENT OF TRANSPORTATION
Traffic Safety

Evaluations

- Pavement Marking Materials (PMM)
- Portable Changeable Message Signs & Flashing Arrow Panels (PCMS/FAP)
- Raised Pavement Markers/Snowplowable Raised Pavement Markers (RPM/SRPM)
- Sign Sheeting Materials/Roll Up Signs (SSM/RUP)
- Temporary Traffic Control Devices (TTC)

Construction

Evaluations

- Asphalt Release Agents (ARA)
- Concrete Admixtures (CADD)
- Concrete Curing Compounds (CCC)
- Epoxy and Resin Based Adhesive Bonding Systems (ERB)
- Portland Cement Concrete Joint Sealants (JS)
- Warm Mix Asphalt (WMA)

Audit Programs

- Erosion Control Products (ECP-SRD)
- Elastomeric Bridge Bearing Pads (EBB)
- Geosynthetics (GTX & REGEO)
- Guardrail (GRL)
- High Density Polyethylene Plastic Pipe (HDPE PIPE)
- Polypropylene Pipe (PPP)
- Polyvinyl Chloride Drainage Pipe (PVC)
- Reinforcing Steel/Welded Wire Reinforcement (REBAR/WWR)

Maintenance

Evaluations

- Polymer Concrete Overlays (PCO)
- Hot Mix Asphalt Crack Sealant (CS)
- Rapid Set Concrete Patch Materials (RSCP)
- Spray Applied Non-Structural Pipe Liners (SAPL)
- Structural Steel Coatings/Concrete Coating Systems (SSC/CCS)
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

Maintenance

Evaluations

- Polymer Concrete Overlays (PCO)
- Hot Mix Asphalt Crack Sealant (CS)
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Maintenance Statewide Contracts

SWC 110 Corrugated Pipe and Pipe Liner
SWC 126 Highway Markings
SWC 148 Sign Posts, Blanks, Delineator
SWC 178 Traffic Paint and Glass Beads

Rapid Set Patching Materials for Portland Cement Concrete
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

Rapid Set Patching Materials for Portland Cement Concrete

Project Work Plan for Evaluation of Rapid Set Concrete Patch Materials
Rapid Set Concrete Patch Materials

1. Prepared patch hole
2. Product packaging
3. Mixing product
4. Placing and screeding product
5. Finishing product
6. Finished product
Rapid Set Concrete Patch Materials
User Guide 2015

Review of Evaluations and Significance of Data Generated

The standard practice provides details’ regarding the standard testing that is used for evaluation of these products.

The following discussion and suggested parameters for acceptance of products is intended only as a guide.

The descriptions and suggested values are abbreviations (and some modifications) of information found in ACI 546.3R-06, ASTM C 928 and other referenced specifications.

Individual agencies may elect to only utilize a portion of these tests and the suggested values may be altered to correspond to the needs of their agency.
QPL 1 TRAFFIC CONTROL MATERIALS

SECTION: A. RAISED, SNOWPLOWABLE REFLECTIVE PAVEMENT MARKERS AND REPLACEMENT LENS

PROCEDURES

A completed Product Evaluation Form, MSDS sheets, if applicable, product data information and a sample of the product being tested must be submitted to the Division of Materials and Test. The Department bases product approval on a review of NTPEP data.
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HOW DOES A STATE REQUIRE NTPEP PARTICIPATION

**Marker Case Condition:**
- 5 = Excellent, Completely intact, “Like New” condition
- 4 = Good, Minor scrapes and scratches
- 3 = Fair, Obvious damage but still functional
- 2 = Poor, Major damage, marginally functional
- 1 = Very Poor, Non-functional
- 0 = Missing

**Lens Surface Condition:**
- 5 = Excellent, Completely intact, “Like New” condition
- 4 = Good, Minor scrapes and scratches
- 3 = Fair, Some abrasions and scares
- 2 = Poor, Scarring over large areas
- 1 = Very Poor, Non-functional
- 0 = Missing

**Lens Internal Condition:**
- 5 = Excellent, Completely intact, “Like New” condition
- 4 = Good, Minimal delamination
- 3 = Fair, Moderate delamination
- 2 = Poor, Major delamination
- 1 = Very Poor, Non-functional
- 0 = Missing
The Tennessee Department of Transportation utilizes National Transportation Product Evaluation Program data for approval of PCMS. All PCMS shall have completed a full evaluation cycle (1-year) by the NTPEP.

Upon conclusion of the full evaluation cycle, the prospective producer or vendor must provide complete data on the unit evaluated from the test decks to the Division of Materials and Tests.

All units meeting the following minimum requirements based on NTPEP data will be placed on the Department’s Qualified Products List:
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July 18th – 24th

Wilson Industrial Air Center

VOTE
DANNY LANE
FOR PRESIDENT
A completed Product Evaluation Form, MSDS sheets, if applicable, product data information, and NTPEP test data, must be submitted to the Division of Materials and Tests. The Department bases product approval on a review of NTPEP data and additional weathering criteria.
Flexible Delineator and work zone Drums

- Flexible Delineator Posts with an impact angle of 25°
- Flexible Delineator Posts at an angle perpendicular to the front of the post
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18\textsuperscript{th} – 24\textsuperscript{th}

TESTING VEHICLE

BUMPER IMPROVEMENT
BEFORE IMPACTS
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

TESTING VEHICLE

BUMPER IMPROVEMENT

AFTER WINTER IMPACTS
5 DECKS
25 IMPACTS
AND
5 DRUM IMPACTS
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

FLEXIBLE DELINEATOR POSTS
(GROUND AND SURFACE MOUNTED)

Ground Mounted

Surface Mounted

Posts with an angle of 25° clockwise from the angle perpendicular to the front of the posts
Direction of Travel

List = Front 0°, Side 0°

List = Front 5°, Side -5°

List = Front -5°, Side -5°

List = Front 10°, Side 5°

List = Front -5°, Side -15°

List = Front -15°, Side 15°
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Des Moines, Iowa
July 18th – 24th

Direction of Travel

Front List

0°
+2°
-2°

Side List

0°
-2°
+2°
### GROUND AND SURFACE MOUNTED DELINEATOR POSTS

#### SUMMER / WINTER IMPACT DATA & PHOTOGRAPHS

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#### Winter Impact Photographs

- Initial
- Impact #1
- Impact #2
- Impact #3
- Impact #4
- Impact #5

#### Impact #1
- Split
- Cracked
- Bumper
- Shearing Loss %
- Other

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- Split
- Cracked
- Bumper
- Shearing Loss %
- Other

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- Split
- Cracked
- Bumper
- Shearing Loss %
- Other

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- Split
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- Bumper
- Shearing Loss %
- Other

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#### Impact #5
- Split
- Cracked
- Bumper
- Shearing Loss %
- Other

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#### Save

- Impact #1
- Impact #2
- Impact #3
- Impact #4
- Impact #5

#### Update Delete

- Initial
- Impact #1
- Impact #2
- Impact #3
- Impact #4
- Impact #5

#### Save All
PLASTIC WORK ZONE DRUMS

Side by side

Re-stackable
WORK ZONE CHANNELIZING DRUMS SUMMER / WINTER IMPACT DATA & PHOTOGRAPHS
Task Force Report

IR Finger Print Delineators and Drums
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

NTPEP
Polymer Concrete Overlays (PCO)
Test Decks
Asphalt Pavement
Concrete Pavement
Bridge Deck
# NTPEP
Polymer Concrete Overlays (PCO)
Test Decks

## Laboratory Evaluation

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<th>Neat and Cured Resin</th>
<th>Aggregate</th>
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NTPEP
Polymer Concrete Overlays (PCO)
Test Decks

FIELD TEST DECK

ASPHALT PAVEMENT

CONCRETE PAVEMENT

BRIDGE DECK
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

NTPEP
Polymer Concrete Overlay (PCO)
Test Deck Prep

Asphalt Pavement
Concrete Pavement
Bridge Deck
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th

Application
Asphalt Pavement
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th
Application
Concrete Pavement
2015 Sub Committee on Maintenance
Des Moines, Iowa
July 18th – 24th
Application
Bridge Deck
TDOT’s Use of NTPEP Polymer Concrete Overlays (PCO)

SECTION D: THIN OVERLAY SYSTEMS FOR BRIDGE DECKS (1/2 INCH THICKNESS OR LESS)

SECTION D1: POLYMER MODIFIED CEMENTOUS SYSTEM

PROCEDURES

GENERAL
This evaluation procedure outlines the Department’s approval process for polymer-modified cementitious, epoxy urethane and low modulus epoxy materials applied as thin overlays on bridge decks used to seal the decks and improve skid resistance.

SPECIFICATIONS
AASHTO T 259
AASHTO T 260
NTPEP

PROCEDURES
A completed Product Evaluation Form, MIDS sheets, if applicable, product data information, and a sample of the product being tested must be submitted to the Division of Materials and Tests.

A six-inch by twelve-inch hardened Portland cement concrete cylinder will be used as a test specimen. The six-inch by twelve-inch concrete cylinder will be sawed in half at an angle of ninety degrees from the twelve-inch axis. The concrete surface shall be abraded using sandblasting techniques. Next place a datum around the top edge of the concrete cylinder. The submitted product will be applied to the concrete surface as recommended by the manufacturer and allowed to cure. The concrete specimen will be cored with a 3% solution of NaCl to a depth of one-half inch and maintained for ninety days in accordance with AASHTO T 259. After ninety days of exposure the specimen shall be allowed to dry and then the surface shall be wire brushed until all salt crystals have been completely removed. A test sample of the concrete shall be taken at the one-half to one-inch depth from each end of the test cylinder. The untreated end of the test cylinder will be the control. The chloride content of each sample shall be determined in accordance with the procedure in AASHTO T 259. The amount of NaCl absorbed into the test cylinder shall be determined by subtracting the control from the sample taken from the area treated with the submitted product and covered with a 3% solution of NaCl.

The maximum amount of chloride ion penetration allowed is 1.0 pound per cubic yard of concrete.

A one-year field demonstration and evaluation period will be required prior to product approval. Smoothness, sealing capabilities, and skid resistance will be evaluated on the in-place product.

QPL 31 HIGH FRICTION SURFACE TREATMENTS FOR ROADWAYS

POLYMER MODIFIED EPOXY SYSTEMS

PROCEDURES

GENERAL
This evaluation procedure outlines the Department’s approval process for a high friction surface treatment for roadways, applied as thin overlays on bridge decks or roadways used to improve skid resistance using basalt aggregate only.

SPECIFICATIONS
FP-xc-14 Standard Practice for High Friction Surface Treatment for Asphalt and concrete Pavements
TP06 HFST
AASHTO T 277
NTPEP Evaluation

PROCEDURES
A completed Product Evaluation Form, MIDS sheet, if applicable, product data information, and NTPEP test data, must be submitted to the Division of Materials and Tests. The Department bases product approval on a review of NTPEP data.

Review of NTPEP Evaluation Data

Laboratory Data
The results of the shall meet the minimum requirements for FP-xc-14 Standard Practice for High Friction Surface Treatment for Asphalt and concrete Pavements and TP06 HFST

Field Data
A three year field evaluation period through the NTPEP PCO test deck will be required prior to product approval. Sealing capabilities, bond strength and skid resistance will be evaluated on the in-place product.

After one year of the evaluation a manufacturer may submit the product to the Division of Materials and Tests for inclusion on the Department Qualified Products list.
Thank You