



AASHTO's National Transportation Product Evaluation Program

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NTPEP Joint and Crack Sealant Evaluation Update

2006 MPPP Meeting

Presented by Jim McGraw
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NTPEP Oversight Committee



Purpose of NTPEP...

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“NTPEP pools the physical and professional resources of State DOTs to coordinate national evaluation on proprietary, engineered products of common interest, including a wide array of highway safety products, construction and maintenance materials.”



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National Transportation Product Evaluation Program

NTPEP -- AASHTO's Win-Win Solution for Government and Industry

Wednesday, January 18, 2006

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Home

- Temporary Traffic Control Devices
- Pavement Marking Materials
- Portable Changeable Message Signs & Flashing Arrow Panels
- Raised Pavement Markers
- Sign Sheeting Materials
- Snow-Plowable Raised Pavement Markers
- Rolled Up Signing Materials

NTPEP Model Deployment Handguide

NEW! HDPE Thermoplastic PIPE Reports

NEW! Reinforcement Geosynthetics Appl

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What's New

- NTPEP DataMine

Exploration & Analysis

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Concrete Admixtures
Concrete Curing Compounds
PCC Joint Sealants
Rolled Erosion Control Products
Geotextiles and Geosynthetics
HDPE Plastic Pipe
Reinforcing Steel
Geosynthetic Soil Reinforcement

NTPEP Model Deployment Handguide

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Bridge Deck Overlays
HMA Crack Fillers
Rapid Set Concrete Patch
Structural Steel Coatings

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NEW! Reinforcement Geosynthetics Appl

What's New
■ NTPEP DataMine

Exploration & Analysis

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Data Mine

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Reference
The references section allows users to view and download the PMM reference documents. The reference documents are classified by year, thus providing access to previous as well as latest references.

Search
Search the specific pavement marking product by selecting appropriate Properties of the product. Select attributes like Manufacturer, Color, Component used or even you can search products based upon their reflectivity or color data.

Explore
Explore reports of specific PMM Products. Reports are organized by each Test Deck site as well as they are organized by comparative charts for the product properties.

Visualize
Draw x-y Color graphs as well as property vs. time graphs for PMM Products. Specifications can be overlayed on the graph to provide you visual clarity if a product satisfies the standards or not.

Export
Interested in further analysis of NTPEP's PMM Data? Download selected data as Microsoft Excel spreadsheet or Microsoft Access database.

start Novell GroupWise - M... Microsoft PowerPoint ... NTPEP - Home - Micro... Pavement Marking M... 8:07 AM

Last Rev. 5/23/03

[NTPEP Home](#) : Joint Sealers

Joint Sealers for PCC Pavements



- Mn/DOT hosted the first NTPEP field evaluation of Concrete Joint Sealers in September '03.

- 3 yr field and lab evaluation

- 18 Products will be tested from 9 manufacturers.

- [PROJECT PANEL](#)
- [PROJECT WORK PLAN](#)
- [SHRP Manual on Joint Sealants](#)
- [SUBMIT A PRODUCT](#)
 - ▶ [2003 MnDOT Project Description](#)
- [Project Panel Minutes](#)

NEW [2003 NTPEP Joint Sealers for PCC Pavements](#)
[ONLINE APPLICATION FORMS](#)



Water Infiltration

✠ Water Infiltration -
$$\%L = (L_f/L_{tot}) * 100$$

No Water Infiltration:
$$\%L = 0\% < \%L < 1\%$$

Low Severity Water
Infiltration: $1\% < \%L < 10\%$

Medium Severity Water
Infiltration : $10\% < \%L < 30\%$

High Severity Water
infiltration: $\%L > 30$





Debris Retention



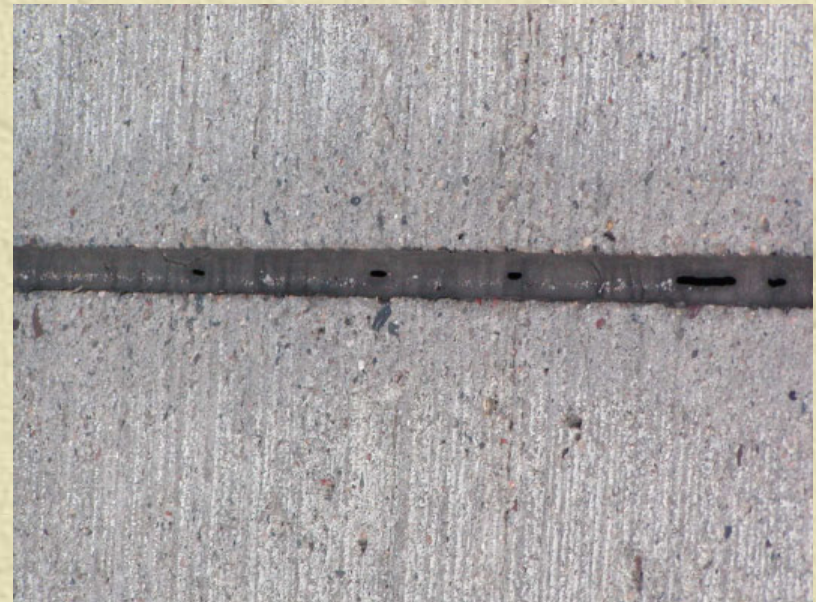
- **Subjective Rating for Debris Retention**

- **Photos used to establish visual rating system**



Seal Condition Number (SCN)

- ✦ SCN –water infiltration and debris retention.
- ✦ Low, medium, or high severity distress
- ✦ $SCN = 1(L) + 2(M) + 3(H)$





Silicone Joint Sealants



- ✦ 6-Non Sag Silicone
- ✦ 6-Self Leveling Silicone
- ✦ 2- 2 Component Silicone



Hot-Pour

- ✦ 3- ASTM D6690-Type IV- Low Modulus
- ✦ 30-60% Resilience for Minnesota Climate
- ✦ 1- Coal Tar-PVC





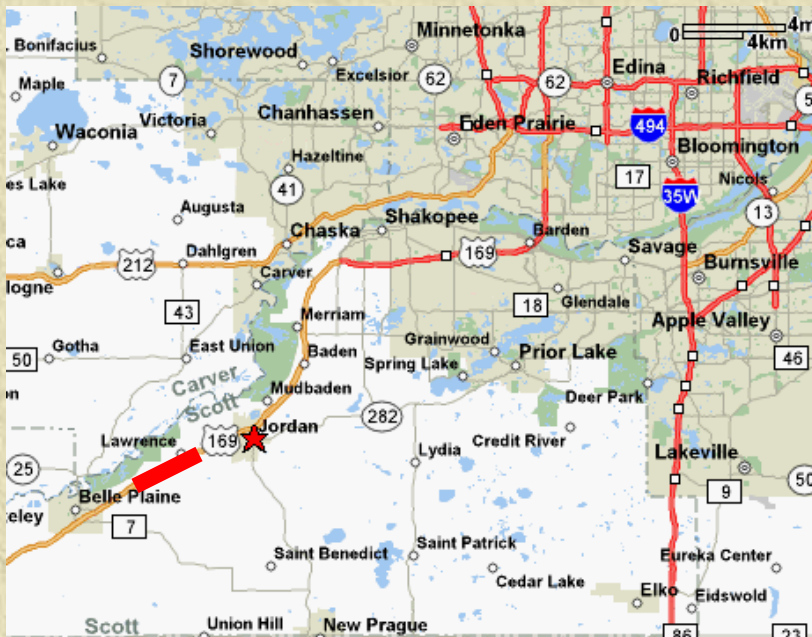
JS-PCC Second Year Results Cohesion/Adhesion Loss

- ✦ Hot Pour/NS/SL – 3%
- ✦ 1/8 " – 51%
- ✦ Neoprene- 0.5%
- ✦ Unsealed





2005 Crack Sealant Evaluation



- ✦ September 2005
- ✦ 12 Hot-Pour Sealants
 - Type II/IV
 - Mn/DOT 3723/3725
- ✦ 7 Manufacturers
- ✦ 5 Contractors
- ✦ Mn/DOT/NCPP



2005 Crack Sealant Evaluation



- ✱ 2001 3" OL/6"BOC
- ✱ Rubblized Concrete
- ✱ 25-30' crack spacing
- ✱ No secondary cracks
- ✱ 1/16 – crack opening
- ✱ 21,900 AADT



2005 Crack Sealant Evaluation

✦ Overband/Band-Aid

- ✦ 3 ½ - 4" width
- ✦ 1/16- 1/8" thick

✦ Routing

- ✦ 9- 1" x 1"
- ✦ 1- ¾" x ¾"
- ✦ 2- 1" x ½"

✦ Lab Testing

✦ Tracking/RV





CS November Review

- ✦ Rout Filling/tape
- ✦ Wheel Track Wear
- ✦ Nov. Crack Opening-
1/8"





Allied Research- Joint Sealant

- ✦ Extend Evaluation time
- ✦ 1-Neoprene
- ✦ 3- Unsealed
- ✦ 1/8" Mn/DOT 3723
- ✦ Redo Mn/DOT APL





Allied Research- Crack Sealant

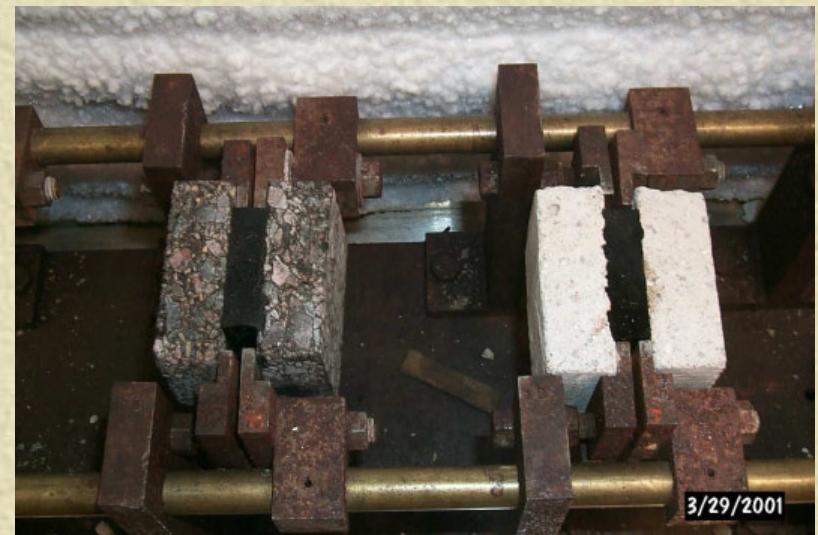
- ✱ Control – no sealing
- ✱ 3/4" x 3/4"- Low Mod
- ✱ 3/4" x 3/4"- 3405





NTPEP Sealant Technical Committee

- ✦ Next- Add Crack Filling
- ✦ Add other locations
- ✦ Loop Detector Sealant





LRRB Inv 822

- ✦ PB-CS Selection
- ✦ Construction Practices
- ✦ Best Practice
- ✦ New QPL/APL
- ✦ Training Video
 - Pre-con Meeting
 - Certification





Benefits to Mn/DOT

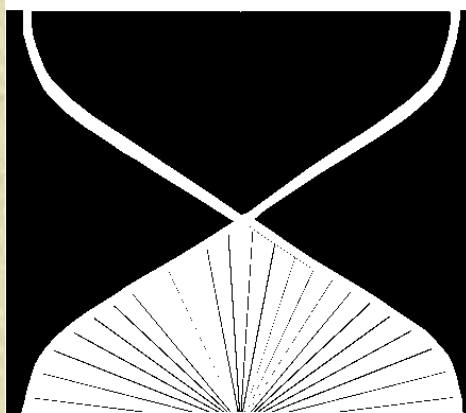


- ✦ Quick and Cheap Method to evaluate Construction and Maintenance products
- ✦ Easy method to generate Approved Product Lists
- ✦ Keep current on new technologies
- ✦ Networking with National Experts
- ✦ Advance expertise within Mn/DOT



NTPEP Contacts

AASHTO'S



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Questions?

