

North Central Superpave Center News

**Volume 2, Number 1
Fall/Winter 1999/2000**

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NCSC Vision and Mission:

To be an industry-recognized source of Superpave expertise and to lead further development and implementation of Superpave technology by providing services to its customers, through excellence in research, training, and communication.



HMA Warranties Gain Momentum

Asking a hot mix contractor to guarantee his work was almost unthinkable a decade ago. As more and more states implemented quality control/quality assurance specifications, contractors assumed more responsibility for their products and the idea of a warranty became palatable. Now the concept is gaining momentum across the country. A few states initiated trial projects and demonstrated that there were ways to deal with some of the administrative obstacles to the use of warranties. One major hurdle was making the warranty provisions work within a low-bid contracting process.

One of the leaders in the use of warranties was the Wisconsin Department of Transportation, which constructed its first HMA warranty project in 1995. Since then they have done a total of 16 projects. Most of their warranted projects have been placed over milled and relaid granular base, but one was over jointed PCC. Their largest project was a 100,000 ton interstate job. Warranties have been used on a variety of roadway types.

The five-year warranties used in Wisconsin cover a wide range of distress types, including:

- | | |
|-------------------------|---------------------------|
| • Alligator cracking | • Block cracking |
| • Edge raveling | • Flushing |
| • Longitudinal cracking | • Longitudinal distortion |
| • Rutting | • Surface raveling |
| • Transverse cracking | • Transverse distortion |
| • Patching | • Potholes |

The acceptable levels of these distresses were developed from the data in the Wisconsin DOT pavement management system. If the distresses exceed the acceptable level, the contractor is required to perform and pay for the remedial action required to correct the problem. A warranty bond is required to cover the cost of placing a 1.5-inch overlay over the entire project.

The DOT specifies the pavement thickness and the five-year warranty period. The contractor takes it from there. Selecting the binder grade and mix design, among other things, are up to the contractor.

Wisconsin reports that a 1998 study showed the warranty projects were performing slightly better than their conventional pavements. They are planning to expand the use of warranties in hot mix, PCC and other types of construction. (The DOT has already completed three PCC warranty projects.)

The Missouri DOT may have been the first to use pavement warranties in this region. Back in 1991, they did two experimental rehabilitation overlays using rubberized asphalt. A three-

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NCSC Superpave Training

The NCSC will again offer hands-on laboratory training in binder testing and mix design at the NCSC. In addition this year, we are offering a four-day mix design course intended for laboratory technicians with limited mix design experience. This new class will include such procedures as determining Rice and bulk specific gravities, batching aggregates and mixing samples. The three-day mix design course assumes participants are already familiar with these procedures.

Superpave Volumetric Mix Design - Experienced

December 13-15, 1999 Indianapolis

January 26-28, 2000 West Lafayette

Superpave Volumetric Mix Design - Beginner

Four-Day Intensive Course for Beginners

February 29-March 3, 2000 Indianapolis

Superpave Binder

February 7-9, 2000 Indianapolis

February 23-25, 2000 Indianapolis

Additional customized training is available at the NCSC or on location. For more information please call the North Central Superpave Center, Rebecca McDaniel, Technical Director.

NHI Goes High Tech

It seems everyone is busy these days and we all need to be in several places at the same time. Recently National Highway Institute (NHI) instructors took advantage of the technology offered by Tel8 to teach Superpave Fundamentals in five states simultaneously.

Tel8 is a network that uses a land-based system (telephone lines) to transmit video and audio signals to various locations in up to eight Western states from a well-equipped studio at North Dakota State University in Fargo. The interactive system allows participants in the remote locations to ask and answer questions through cameras located at their sites.

Jan Olek and Becky McDaniel of the North Central Superpave Center were invited to Fargo to pilot the newly developed Superpave Fundamentals course for about 90 people in North and South Dakota, Montana, Utah and Wyoming. This course is a one-day overview of the Superpave system suitable for agency and contractor personnel who need to know the general concepts behind the Superpave system and the rationale behind some of the requirements, but who do not need to know all of the technical details of binder testing or mix design. The course summarizes the philosophy of the binder specification and selecting an appropriate binder grade. The course also briefly reviews mix volumetrics and the basics of mix design so that participants will understand the potential impacts of making field changes to the mix design. The course concludes with a review of the possible differences between Superpave mixes and conventional mixes that might be observed during production and placement and suggestions for how to deal with these differences.

Use of this type of technology takes some getting used to for both the student and the instructor. The participants must make an effort to actively participate in the course discussions. It is easy to sit in a remote location and "watch TV" without getting involved. Instructors have to try to draw the participants in and get them to share in the experience. Instructors also have to adjust to the fact that some of the tools they use when teaching in person do not come across well at a distance. For example, the instructor cannot point to features on the screen, but has to describe the important points instead.

Once the instructor and participants get accustomed to distance learning, though, the technology provides a very efficient and effective means of reaching a large number of people. NHI hopes to make more use of the technology in the future and is planning some refinements to courses to make them more conducive to this type of instruction.

The new Superpave Fundamentals course is undergoing final revisions now and will be widely available soon. NHI courses can be arranged by contacting NHI at 703/235-0500. See their website at <http://www.nhi.fhwa.dot.gov>.

Warranties

Continued from page 1

year warranty on materials, work and performance was required. Both projects failed and have been replaced; one at contractor's expense during the warranty period and the other on the state's tab after the warranty expired. The department has discontinued use of rubberized asphalt. There are no immediate plans for warranty projects of other types, but the department has not ruled out the possibility.

In Ohio, the state legislature passed a bill requiring the DOT to use warranties on certain percentages of their work. The legislation requires not less than seven-year warranties on new construction, five-year warranties on resurfacing and rehabilitation and two-year warranties on preventative maintenance, bridge painting, pavement markings, raised pavement markers, guardrail and other project items. The department had constructed four trial five-year warranty projects in 1997-98, which have performed acceptably.

The Illinois state legislature also passed a law requiring the department to implement a demonstration project under which 20 contracts over the next five-year period shall have a performance-based warranty of at least five years. Ten of these projects must be designed for a 30-year life cycle. The department is now working with industry on the warranty provisions and is planning PCC pavement warranties as well as HMA.

Other states using HMA warranties include Indiana (six projects since 1996) and Michigan (over 100 three-year preventative maintenance warranties and 16 five-year Superpave warranties). Both states report few problems and satisfactory performance.

Iowa is not currently using warranty specs, but is discussing the possibility as part of a multi-level quality control plan. Kansas is planning a design/build/warranty project to be let in a few months. Minnesota is not using HMA warranties but does have two-year warranties on microsurfacing and routing and sealing cracks.

Lead State Team Prepares to Sunset

At the last meeting of the Superpave Lead State Team, plans were made for sunsetting the team in the year 2000. Although the team expects that the need for the type of support offered by the Lead State Team will diminish, there are some key functions that should be continued. The team held a brainstorming session to identify critical activities, resources and support that would be needed to move Superpave into the future. The lead state teams for other SHRP products are making similar transition plans.

Some of the critical support roles identified by the team include the support of the SHRP Implementation Coordinator in AASHTO; the technical guidance from the reconstituted Expert Task Groups and the oversight provided by the TRB Superpave Committee; the encouragement of the TRB/AASHTO/FHWA partnership to maintain the visibility of Superpave; and the regional sources of expertise at the Superpave centers. FHWA will still have a role to play in technical support through their Resource Centers and technical coordination, in the view of the team.

Key strategic planning needs identified by the committee include plans for further refinement of a performance prediction system and for performance measurement of Superpave. When new research leads to refinements in Superpave, there should be a mechanism to ensure these technological advances are implemented.

Communication efforts need to be continued to keep people, including managers, apprised of future developments in Superpave. As one part of the communication efforts of the Lead State Team, team members will attend each User-Producer Group meeting to update the UPG on Lead State activities.

There will be continuing needs for training when the Lead State Team sunsets. The team suggests that Local Technical Assistance Program (LTAP) Centers or some other organizations be engaged to provide appropriate training for utilizing Superpave at the local level.

More information about the work of all seven Lead State Teams is available at the Lead State Team website at <http://leadstates.tamu.edu>. This site contains a listing of Superpave resource people, articles and information. The site also offers an index of all SHRP reports and Focus articles. Full text copies of all Focus and RoadSavers articles are available. Current plans call for the site to be maintained until September 2000.

NORTH CENTRAL ASPHALT USER PRODUCER GROUP (NCAUPG) PLANS MEETINGS

The annual meeting of the North Central Asphalt User Producer Group (NCAUPG) will be held January 19-20, 2000, at the Kansas City Airport Hilton, (800) 525-6322.

Technician Workshop, January 18-19, 2000

Prior to the annual meeting, the North Central Asphalt User Producer Group will be sponsoring a workshop for agency and industry technicians across the ten States and two Canadian Provinces that are a part of the North Central Asphalt User Producer Group region. The open forum format will allow participants the opportunity to exchange information on Superpave problems and solutions. Topics to be covered include national issues, binder, aggregate, mixture design, construction practices, QA/QC procedures and technician development. The workshop begins January 18, 2000, at 12:30 p.m. and continues until noon, January 19, 2000. Discussions on Tuesday afternoon will cover the National Superpave Program, binders, aggregates and mix design. On Wednesday morning, the discussions will turn to construction, QC/QA, and technician qualification and training.

NCSC Steering Committee Meeting, January 19, 2000

The NCSC Steering Committee will have their annual meeting on Wednesday, January 19, 2000 from 8 a.m. until noon. Guests are welcome to attend the meeting. Please check the box on the registration form if you plan to attend. A working lunch for Steering Committee members only will follow the meeting.

NCAUPG Meeting, January 19-20, 2000

A full program is planned for the NCAUPG meeting itself. The meeting begins at 1:00 p.m. on January 19 and concludes at noon on January 20. Wednesday's topics include the Sunsetting of the Lead States, by Dave Andrews, INDOT; the TRB Committee on Superpave Implementation, by Joe Mickes, MODOT; Superpave Update, by John D'Angelo, FHWA; National Perspective on Construction Issues, by Dave Newcomb, NAPA; NCSC Update, by Jan Olek, NCSC; Binder Update, by Mike Anderson, AI; Report on Technician Workshop, by Erv Dukatz, Mathy Construction; and the National Asphalt Research Program, by Ray Brown, NCAT.

Thursday's agenda focuses more on regional, rather than national issues. Ken Archuleta, FHWA, will open the morning's program with a report on Standardization of Test Procedures. Then six state agencies and contractors will share their experiences, problems and solutions; the states are Iowa, Nebraska, Kansas, Illinois, Wisconsin and Indiana. The meeting will conclude with an open discussion on future plans for the group.

For registration form and information please visit the North Central Superpave Center website at:

<http://ce.ecn.purdue.edu/~spave/>

NCAUPG Meeting Information - January 18-20, 2000

or call the NCSC at 765/463-2317 ext 224, or Ken Archuleta, FHWA, at 816/276-2732.

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The National and Regional Superpave Newsletters are published three times a year and are coordinated by the North Central Superpave Center. The NCSC is one of five Superpave Regional Centers established to assist with implementation of the Superpave performance-based system for designing asphalt pavements. The NCSC is a joint effort of Purdue University, the Indiana Department of Transportation, and the Federal Highway Administration and is administered by the Joint Transportation Research Program at Purdue University.

Calendar of Events 2000

- January 9-13 **79th Annual Transportation Research Board Meeting**
Washington, DC
Contact: TRB (202) 334-3214,
<http://www4.nationalacademies.org/trb/homepage.nsf>
- January 18-20 **North Central Asphalt User/Producer Group Annual Meeting**
Kansas City Airport Hilton, Kansas City, MO
Contact: Ken Archuleta, FHWA, (816) 276-2732
<http://ce.ecn.purdue.edu/~spave/>
- February 13-17 **45th National Asphalt Pavement Association Annual Convention** Hilton Waikoloa Resort, Island of Hawaii
Contact: DKKAPA@aol.com
- March 12-15 **Association of Asphalt Paving Technologists**
Nugget Hotel, Reno, NV
Contact: AAPT, (651) 293-9188
- March 28-29 **Superpave Mix ETG**
Washington, DC
- April 10-12 **Superpave: Building Roads for the 21st Century**
Denver Marriott Tech Center, 4900 S. Syracuse Street
Denver, CO 80237 Phone: (303) 740-2531
- April 24-28 **Engineering Pavements for the 21st Century and FHWA Workshop on Specific Pavement Studies**
sponsored by NCHRP, FHWA, and AASHTO
Newport, Rhode Island and sponsored by NCHRP, FHWA, and AASHTO
- May 22-24 **4th International Symposium on Pavement Surface Characteristics of Roads and Airfields** Nantes, FRANCE
Contact: Michel.Boulet@lcpc.fr
- November 15-17 **Eighth Annual HMA Conference**
Regal Cincinnati Hotel, Cincinnati, OH
- December 10-13 **Asphalt Technology 2000**
University of Texas, Austin
Contact: scampos@mail.utexas.edu or <http://lifelong.engr.utexas.edu>



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