State Discussion Topics – 2003

Nevada DOT Response

1. What is the status of Superpave implementation for both binder and mixtures?

   NDOT has implemented the PG binders in Southern Nevada. Starting in 2004 we will begin transition to PG graded binders. We are placing test sections of Superpave designed mixtures on several projects in 2004. These will be monitored for field performance. We do not anticipate full implementation of the Superpave mixtures for several years.

2. What are the primary PG binder grades being used? Does your state use any SHRP plus tests and the reason for their use? Do you have any plans to implement AASHTO MP1a?

   NDOT is using a PG76-22NV in Southern Nevada and some pilot projects with a PG64-28NV in Northern Nevada. We have added cold ductility, Toughness & Tenacity, a minimum polymer content, sieve test, and modified the original DSR and Rotational Viscometer specification limits. We did this to assure polymer-modified binders. We do not plan on implementing MP1a.

3. There has been much recent discussion on the affects of acid modification of binders. Is your state concerned with the issue of chemical modification? Does your state have any specifications to address chemical modification of PG binders?

   At this time NDOT is not concerned with chemical modification. We believe with our modifications noted above, testing binder samples taken during production, and testing of mixture from behind-the-paver, we would detect any detrimental effects of chemical modified binders.

4. There has been a concern that Superpave mixtures may be over compacted, resulting in low binder contents and reduced durability and fatigue life. Is your state doing any testing, other than gyratory compaction, do determine if the mixture has adequate binder? Has your state taken any action or modified the Superpave procedures to insure adequate binder in the mixture?

   NDOT is only placing test sections of Superpave mixtures. We have added Hveem stability to the specification as a strength test. This also helps us to monitor the asphalt content of the mixtures.

5. What procedures does your state use to specify aggregate durability for HMA (sodium sulfate, magnesium sulfate, freeze thaw, or other)? Have you done any research with Micro Deval and do you have any plans to replace your present specifications with Micro Deval?

   NDOT uses LAR and sodium sulfate soundness. We have not done any research with the Micro Deval nor do we plan on replacing our present specification with it.

6. Does your state routinely specify Stone Mastic Asphalt (SMA) mixtures? Approximately how many tons of SMA is placed each year? Do you use AASHTO MP2 and PP41 for specifications and design or what significant modification to these have you made? Do you have any construction quality issues and how are SMA mixture performing?

   NDOT does not use SMA.

7. Has the performance of longitudinal joints been as issue? What type of joint is required or generally constructed by contractors? Do you require any QC or QA procedures such as density or permeability at the joint?

   Longitudinal joints are an issue in Nevada. The joint type is not dictated but left up to the contractor to construct. Most of them just use the vertical joint created during paving. We do not require any QA at the joint. We are performing a research project with the University of Nevada, Reno to implement and monitor joint compaction.

8. Do you regularly see paver related segregation (linear streaks either at or just below the mat surface) and do you have a specification to address it? Do feel temperature segregation is a problem and do you have a specification to address it?

   Yes, NDOT does see paver related segregation. Again we do not have any specification that address's it. Based on visual inspection the contractor is notified and hopefully will make changes to correct it. We also feel temperature segregation is a problem. We did purchase a thermal camera and are looking at the extent of it. We then plan to implement a maximum temperature difference specification to help reduce it.

9. Are there any recent or pending rule changes by your state EPA that may impact specifications or changes to products? Has there been any recent legislation that will impact the refining or HMA paving industries?

   Not that we are aware of.

10. What is the single most concerning issue with the quality of HMA in your state?

We believe the most concerning issue is achieving quality construction. This includes joint density, segregation, compaction, smoothness, quality binders, and producing mixtures that meet the mix design and other specifications.