

STATE OF NEBRASKA  
DEPARTMENT OF ROADS  
ADDENDUM NO. 1  
PROJECT NO. EACNH-BH-34-4(120)  
CONTROL NO. 41729  
CALL ORDER F08  
US-281/US-34, SOUTH OF GRAND ISLAND  
LETTING DATE: OCTOBER 25, 2001

On pages 32 – 33 of the Special Provisions, the provision titled TEMPORARY PAVEMENT MARKING is void.

The provision titled TEMPORARY PAVEMENT MARKING, pages 33 – 35, is used for this project.

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On page 62 of the Special Provisions, the provision titled PERFORMANCED GRADED BINDER (Superpave) is void and superseded by the following:

**PERFORMANCE GRADED BINDER  
(Superpave)**

Section 503 in the Standard Specifications and Supplemental Specifications is amended to include Performance Graded Binders.

I. Description:

The performance graded binder to be used on this project shall be PG Binder 70-34 for Asphaltic Concrete, Type SP4, and PG Binder 64-22 for Asphaltic Concrete, Type SPS, supplied by a Certified Supplier.

Certified Supplier

A supplier must be certified by the Nebraska Department of Roads to be allowed to supply Performance Graded Binder in Nebraska. A certified supplier must be a participant in one or more of the following PG Binder groups.

1. AASHTO Materials Reference Laboratory (AMRL)
2. Western Cooperative Testing Group
3. Combined States Binder Group

The supplier must maintain and follow the requirements of the group or groups in which they participate in to maintain certification by the Nebraska Department of Roads. In addition, active participation is required to maintain certification by the Department. Active participation will include submitting of round robin samples results, along with meeting other requirements of the group or groups. Failure to do so will result in loss of certification by the Department.

A certified supplier may be asked to supply to the Department, past round robin results, laboratory inspection reports, reasons for and investigative reports on out lying results, quality control testing, and/or technician training and proficiency testing reports.

#### Supplier Certification

A supplier may request certification by contacting the Nebraska Department of Roads, Materials and Research Division, Flexible Pavement Engineer at (402) 479-4675. A temporary certification may be issued for a period of up to one year. Split sample testing will be required prior to receiving a temporary certification. Split sample testing will be done on all grades of binder that the supplier intends to supply during the temporary certification. The supplier will have up to one year to become certified by participating in and following the requirements of one or more of the approved binder groups.

A supplier may become certified through active participation in other binder certification/round robin groups that are approved by the Department. The Department may request from the supplier prior to approval, past or current round robin results, quality control testing, laboratory inspection reports, and/or technician training and proficiency testing reports.

#### II. Binder Sampling and Testing:

1. Lots. Each 3750 tons (3400 Mg) of HMA produced will be a binder lot.
2. A binder lot will include only one PG Binder grade or a blend as allowed in paragraph 6.e.
3. A Binder lot will only include one supplier of the PG Binder or a blend as allowed in paragraph 6.e.
4. Blending of different binder grades and binders from different suppliers will be allowed with restrictions as noted in paragraph 6.e. The Engineer must be notified of the intent to blend prior to actual blending.
5. All binders shall be sampled at the rate of one sample per lot with a minimum of three samples per project.
  - a. The sample shall consist of two one-quart (liter) cans and shall be taken by the Contractor's Certified Sampling Technician, with assistance from or under supervision of NDR personnel. The sample shall be taken at the plant from the line between the storage tank and the mixer or from the tank supplying material to the line, at a location at which material sampled is representative of the material in the line to the mixer. One can will be tested for compliance with MP1 specifications and the other can portion will be saved for dispute resolution, if needed. The sampling process shall follow procedures of the NDR Materials Sampling Guide and NDR T 40.
  - b. Testing. When the tested PG Binder is in compliance, the binder lot will be accepted and both cans of the sample can be discarded. If the tested

PG Binder does not comply, then the price of the PG Binder lot represented by the sample shall be adjusted according to Table 1. Overall project average testing requirements and price adjustments will also apply, as stated in Table 2.

6. Material Requirements:

- a. Performance graded binder, as specified in the contract items shall be in accordance with AASHTO Designation MP1 and meet all minimum and maximum requirements.
- b. Substitution of a PG Binder, which exceeds the upper and lower grade designations from the specified, requires advance notification of the Engineer, and be documented by a no cost change order. The bill of lading or delivery ticket shall state the binder grade and specific gravity.
- c. Material Certification - A Material Certification shall be submitted prior to construction stating, the type of modifier being used, and the recommended mixing and compaction temperatures for the Hot Mix Asphalt.
- d. The Contractor shall receive from the supplier, instructions on the proper storage and handling of each grade and shipment of PG Binder.
- e. Blending of PG Binders at the hot mix plant site will be allowed only when transitioning to an asphalt mixture requiring a different grade of binder and with the following restrictions:
  - (1) The resultant blend will meet MP-1 specifications when tested as  $\pm 3^\circ$  of the specified PG binder. The sample of the blended material will 1) be considered as a lot sample, 2) will be taken during initial production following the blending of the binders, and 3) deductions when not meeting MP-1, will apply. On the blended sample's identification form will be a note explaining the blending conditions and a statement that the sample is a blend of materials. The next lot sample, following the sample representing the blend, will be tested as the specified binder grade for the asphalt mixture being produced and shall meet MP-1 specifications.
  - (2) Modified Binders - When a type of modification is used and stated in the Material Certification as required in paragraph 6.c., it will not be allowed to be blended with a binder containing a different type of modification. Blending of the same type of modifiers will be allowed.

**TABLE 1**

<b>SINGLE SAMPLE TOLERANCE AND PRICE REDUCTION TABLE</b>		
	<b>Price Reduction<sup>1</sup> Pay Factor of 0.75</b>	<b>Determined by Engineer<sup>2</sup> Pay Factor of 0.50 or Removal</b>
<u>Tests on Original Binder</u> Dynamic Shear, $G^*/\sin \delta$ , kPa	0.86-0.92	< 0.86
<u>Tests on Rolling Thin Film Oven Residue</u> Dynamic Shear, $G^*/\sin \delta$ , kPa	1.76-1.97	< 1.76
<u>Tests Pressure Aging Vessel Residue</u> Dynamic Shear, $G^*\sin \delta$ , kPa	5601-6200	> 6200
<u>Creep Stiffness</u> S, Mpa	325-348	> 348
m-value	0.270-0.284	< 0.270

**NOTE:** If more than one test fails to meet requirements, the largest individual price reduction (pay factor of 0.75 or 0.50) will be used to calculate price reduction for the asphalt binder.

<sup>1</sup> Price Reduction will be based on contract unit price of asphalt binder.

<sup>2</sup> The Engineer will determine if the non-compliant material will be removed. If the non-compliant material is accepted, a price reduction of 50% will be applied. The price reduction shall be based on the contract unit price of asphalt binder.

The pay factor will be applied to the quantity of material that the sample represents.

#### Overall Project Average - Price Reduction Based on Complete MP-1 Testing

Out of specification material will be determined by the specifications outlined in AASHTO MP-1, excluding Direct Tension.

The Nebraska Department of Roads, Materials and Research, Bituminous Laboratory will do complete testing, per MP-1 specifications, on a minimum of three samples or 20% of the total samples from the project, whichever is the greatest. The Department will randomly select one sample for complete MP-1 testing out of every five samples received. When any test result shows sample not meeting MP-1 specifications, the previous and following sample received will be tested for complete MP-1 compliance. Testing will continue in this manner until tested samples meet all of MP-1 specifications.

Original Dynamic Shear Rheometer testing will be completed on all samples. When a sample being tested for only Original Dynamic Shear Rheometer compliance falls out of MP-1 specification, it will then be tested for complete MP-1 specification compliance. Adjacent samples will be tested when results, other than the Original Dynamic Shear Rheometer result, do not meet specification. This additional complete testing for MP-1 compliance is in addition to the minimum number of samples that will be tested for complete MP-1 compliance.

At the completion of testing, all complete MP-1 test results will be averaged. For averages that do not meet MP-1 specifications, the largest reduction shown in Table 2 will be applied to all the Performance Graded Binder used on the project.

**Table 2**

<b>OVERALL PROJECT AVERAGE - PRICE REDUCTION TABLE</b>		
	<b>Range of Average</b>	<b>Pay Factor Applied</b>
<u>Tests on Original Binder</u> Dynamic Shear, $G^*/\sin \delta$ , kPa Min. 1.00 kPa	< 1.00 - 0.98	0.98
	< 0.98 - 0.96	0.95
	< 0.96 - 0.94	0.92
	< 0.94	0.85
<u>Tests on Rolling Thin Film Oven Residue</u> Dynamic Shear, $G^*/\sin \delta$ , kPa Min. 2.20 kPa	< 2.20 - 2.156	0.98
	< 2.156 - 2.09	0.95
	< 2.09 - 2.024	0.92
	< 2.024	0.85
<u>Tests Pressure Aging Vessel Residue</u> Dynamic Shear, $G^*\sin \delta$ , kPa Max. 5000 kPa	< 5000 - 5100	0.98
	< 5100 - 5250	0.95
	< 5250 - 5400	0.92
	< 5400	0.85
m-Value Min. 0.300	< 0.300 - 0.298	0.98
	< 0.298 - 0.293	0.95
	< 0.293 - 0.290	0.92
	< 0.290	0.85
<u>Creep Stiffness</u> S, MPa Max. 300 MPa	< 300 - 306	0.98
	< 306 - 315	0.95
	< 315 - 324	0.92
	< 324	0.85

### Single Sample Reduction and Overall Project Average Reduction

A sample representing a lot, not meeting MP-1 Specification, will have a reduction for the material that the sample represents. Only the largest reduction from Table 1, will apply when more than one result of a single sample does not meet MP-1 specifications. Only the largest overall project average reduction from Table 2, will apply when more than one test average falls out of MP-1 specifications. Pay Factors based on both Table 1 and Table 2 test results are separate from each other and both will be applied.

### Investigation of Verification Lot Samples That Do Not Meet Specifications

When the lot sample shows test results out of specification limits, the process of resolving the sample failure will include the following actions as appropriate:

1. The Bituminous Lab may conduct retesting of the remaining portion of the original can sample as determined necessary to confirm or disaffirm the original test result(s).
2. The Flexible Pavement Engineer will notify the Contractor who will arrange to investigate all aspects of the testing, loading, handling and delivery of the material in question. The Contractor shall report findings to the Central Laboratory, Flexible Pavement Engineer.
3. The Department will collect and compile all information and prepare a report. A copy of the report will be distributed to the District and the Contractor.
4. The Bituminous Laboratory will issue the standard report of tests for all samples tested, to include any resulting pay factor deductions. A copy of the report of tests will be distributed to the District, Construction Division, and Contractor.

### Dispute Resolution

After testing and investigations have been completed on the one can of the sample and there is still a dispute, the Department will select an independent laboratory for referee testing to take place on the second can of the sample. If the independent lab's tests indicate failing results and pay deductions equal to or great than the Department's, the Contractor will reimburse the Department for the cost of testing. If the independent lab's tests indicate that the material meets specification or is at a pay deduction less than the Department's, the Department will assume the cost of testing. When the independent lab's tests indicate a pay deduction, the lesser of the Department's and the independent lab's deductions will be applied.

### Basis of Measurement

PG Binder shall be measured in accordance with Subsection 503.05 in the Standard Specifications and Supplemental Specifications.

Basis of Payment:

Subsection 503.06 in the Standard Specifications and Supplemental Specifications is amended to provide that PG Binder, accepted by the Engineer for use in asphaltic concrete, will be paid for at the contract unit price per ton (Megagram) for the item "Performance Graded Binder \_\_\_\_\_", less any deductions as prescribed in the tolerance and price reduction tables.

DEPARTMENT OF ROADS

Claude Oie  
Construction Engineer

Issued: October 16, 2001

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NOTICE: Only the contractors issued bidding proposals receive this addendum and responsibility for notifying any potential subcontractors or suppliers remains with the contractor.