KANSAS DEPARTMENT OF TRANSPORTATION
SPECIAL PROVISION TO THE
STANDARD SPECIFICATIONS, 1990 EDITION

SUBSECTION 1206

GENERAL REQUIREMENTS FOR SECTION 1200-BITUMINOUS MATERIALS

Page 819, 1206.02(b) Shipping Facilities. Delete the last paragraph and replace it with the following:

Maintain a loading log showing the contract or project number, date, time, ticket number, shipping container number, contractor, and the grade and quantity, for each shipment to Kansas Department of Transportation projects. Mail a copy of the log to the Engineer of Tests monthly during the shipping season.

Page 820, 1206.02(d)(3) *Tests by Producer.* Delete the entire subsection and replace it with the following:

(3) *Tests by Producer.* Provide for a testing laboratory with laboratory and sampling equipment meeting the appropriate AASHTO or ASTM specification requirements to be available to all production and terminal facilities servicing Department projects. The laboratory must be staffed with competent personnel who can conduct tests to assure all bituminous material intended for shipment to Department projects complies with the specifications before it is shipped. Perform testing necessary to maintain continuous quality control.

(3.1) The minimum quality control testing and reporting requirements for any product shipped to Department projects is as follows:

a. Asphalt Cement (AC) and Performance Graded Asphalt Binder (PGAB).

(1) Definition of Tests.

(a) Complete AASHTO Specification Compliance (SC) test for AC
Viscosity, 60°C
Viscosity, 135°C
Penetration, 25°C
Flash Point, COC
Solubility
Tests on Residue from TFOT
Loss on heating
Viscosity, 60°C
Ductility, 25°C

(b) Complete AASHTO Specification Compliance (SC) test for PGAB:
Original Binder:
Flash Point (COC)

Brookfield Viscosity, 135°C
Dynamic Shear
Separation Test, 163°C, 48 hours (Polymer modified only)

Rolling Thin Film Oven Residue:
Mass Loss
Dynamic Shear
Elastic Recovery, 25°C (Polymer modified only)

Pressure Aging Vessel Residue:
Dynamic Shear
Creep Stiffness, S, 60s
Slope, m

Viscosity @ 60°C
Penetration @ 25°C

(c) Quality Control (QC) Tests for AC and unmodified PGAB:
Viscosity @ 60°C (AC and unmodified PGAB)
Penetration @ 25°C (AC and unmodified PGAB)
Original Binder DSR (unmodified PGAB only)
Brookfield Viscosity, 135 and 165°C (unmodified PGAB only)

(d) Quality Control (QC) Tests for modified PGAB:
DSR on Original Binder
DSR after RTFO

Any other short-term test(s) the producer has found to provide useful information for quality control of the product.

(2) Refineries and Blending Facilities.

(a) For a tank which is filled prior to beginning shipping, and then emptied before more material is added, perform one complete AASHTO SC test per tank when filled, and weekly QC tests.

(b) For a tank being continually filled while continuous shipping is made from the tank, perform one complete AASHTO SC test per week, and daily QC tests

(c) When blending directly into a tanker, sample every third truck for QC tests, and perform one complete AASHTO SC test per week.

(d) Under any of the operations described above, if the results of any of the QC tests indicate the product may be out of specification, stop shipment from that source immediately. Perform a complete AASHTO SC test to ascertain the product status and recertify the source.

(3) Terminals.

(a) For operations where a tank is filled prior to beginning shipping, and then emptied before more material is added, complete the following:

Perform a complete AASHTO SC test at the refinery on the material being shipped. When the shipment arrives at the terminal, run the QC tests to verify the material as it is being unloaded. After that, perform the QC tests weekly until the tank is emptied.

(b) For operations where a tank is being continually filled while continuous shipping is being made from the tank, complete the following:

Perform a complete AASHTO SC test at the refinery on the material being shipped. When the shipment arrives at the terminal, run the QC tests to verify the material as it is being unloaded. Perform the QC tests on the contents in the tank weekly. Perform a complete AASHTO SC test on the contents in the tank once per month.

(c) Under any of the operations described above, if the results of any of the QC tests indicate the product may be out of specification, stop shipment from that source immediately. Perform a complete AASHTO SC test to ascertain the product status and recertify the source.

b. Emulsions and Asphalt Rejuvenating Agents.

(1) Perform one complete AASHTO test each time a batch of material is produced. A tank must be tested each time new material is added to it.

(2) A complete AASHTO test for Emulsions is defined as follows:

Saybolt Furol Viscosity, 25°C or 50°C
Residue by Distillation
Oil Distillate
Settlement, 5 day
Storage Stability, 1 day
Sieve Test
Demulsibility-**WHEN REQUIRED**
Particle Charge-**WHEN REQUIRED**
Tests on Distillation Residue:
- Penetration, 25°C
- Ductility, 25°C
- Float Test, 60°C **HFMS-1 ONLY**
- Saybolt Furol Viscosity, 82.2°C **CMS-1 ONLY**

(3) A complete AASHTO test for asphalt rejuvenating agents is defined as follows:

Saybolt Furol Viscosity, 25°C
Residue by Evaporation
Sieve Test
Tests on Residue
- Kinematic Viscosity, 60°C
- Asphaltenes
- Maltenes Ratio

c. Cutbacks and Hot Recycling Agents.

(1) For a tank being filled and emptied before more material is added, perform one complete AASHTO test per tank, and weekly tests for 60°C viscosity.

(2) For a tank being continually filled while continuous shipping is made from the tank, perform one complete AASHTO test per week, and daily tests for 60°C viscosity.

(3) When blending directly into a tanker, sample every third truck for 60°C viscosity, and perform one complete AASHTO test per week.

(4) A complete AASHTO test for cutback asphalt is defined as follows:

Kinematic Viscosity, 60°C

Flash Point, TOC
Water
Distillation Test:
Distillates
Residue
Tests on Distillation Residue:
Vacuum Viscosity, 60°C or Penetration, 25°C
Ductility, 25°C or 15.6°C
Solubility

(5) A complete AASHTO test for hot recycling agents is defined as follows:
Viscosity, 60°C
Flash Point, COC
Tests on Residue from TFOT
Loss
Viscosity Ratio
Chemical Analysis
Maltenes Ratio
Saturates

(3.2) For all types of products discussed above, prepare quarterly summary reports for all quality control and specification compliance testing performed during that period, including any statistical analysis associated with process control. Retain the reports for a minimum of one year. Submit them to Kansas Department of Transportation if requested.

Page 821, 1206.02(e) Prequalification. Delete the entire subsection and replace it with the following:

(e) Prequalification.

Producers will be required to submit qualification samples of any type or grade of material furnished under this specification which has not previously been produced by them, or which has not been used on Department projects within the last 12 months. For each material being qualified or requalified, submit a four-liter sample taken from a production batch, along with a copy of the producer's complete AASHTO test results on the same material to the Engineer of Tests. The Engineer will test the sample and compare the results. The producer will be notified of the results in writing.

Any change in formulation will require requalification. Changes in base stock or major components may require requalification. Contact the Engineer of Tests' Chief Chemist to determine if requalification is necessary.

All producers supplying material to KDOT projects must have a written quality control plan addressing the requirements of this specification. Producers of performance graded asphalt binder must also address any requirements in the latest edition of AASHTO R 26 that are not specifically covered here. In addition to the requirements specified in AASHTO R 26, include in the QC plan provisions for maintaining the mixing and compaction temperature ranges using the following guidelines:

(1) **Unmodified PGAB Suppliers:** Record the initial mixing and compaction temperature ranges on the certificate. Once three sets of tests for temperature ranges have been accumulated, then maintain a 3-point moving average. Maintain the mixing and compaction temperature ranges constant unless there is a change to any component (example: upper compaction temperature) of the 3-point moving averages by more than 5°C. If this occurs, then replace all of the old temperature ranges with the 3-point moving average temperature ranges.

Provide a monthly copy of all individual and 3-point moving average temperature ranges to the Chief Chemist at the Materials and Research Center. Provide the contractor with the most current mixing and compaction temperature ranges as outlined above.

(2) **Modified PGAB Suppliers:** In additional to the requirements stated in **subsection (e)(1)**, include in the QC Plan a detailed description of the method used by your laboratory to determine the modified PGAB mixing and compaction temperature ranges.

Submit a copy of the written quality control plan to the Bureau of Materials and Research for review and approval. Quality control plans and the testing information contained therein will be maintained as confidential by KDOT**. An approved plan is a required prerequisite to prequalification of any product.**

The Bureau of Materials and Research will maintain a list of producers that are qualified to supply specific types and grades of materials. Qualified producers will be permitted to supply qualified materials on a certification basis. Monthly loading logs and results of the producer's quality control testing are required to be forwarded to the Engineer of Tests to maintain status on the prequalified list.

An annual split-sample testing program will be conducted for each producer on the Prequalified List. Producers will participate in this program for each type of material they have prequalified. When notified by KDOT, producers will be required to split a sample, test the material according to specifications, and send KDOT a portion to test along with their test results. The two sets of test results will be compared using the precision and bias guidelines outlined by AASHTO. If there are any discrepancies in the test results that cannot be resolved, a laboratory inspection may be necessary. Producer laboratories that are AMRL certified will be exempt from this program.

Results of the split-sample testing program, producer quality control testing required by **subsection 1206.02(d)(3)** and verification testing conducted by the Department will be used to determine the reliability of the producer's certifications. If any of these data indicate that the certifications are not reliable, permission granted to the producer to supply bituminous materials on the basis of certification will be withdrawn. The producer may still supply bituminous materials, but the contents of each shipping container must be sampled and tested by KDOT prior to acceptance for use. This procedure will be followed until the producer has provided to the Chief of Materials and Research, adequate indication that future certifications will be reliable.

Page 821, 1206.02(f) Basis of Acceptance. Delete the entire subsection and replace it with the following:

(f) Basis of Acceptance.

(1) For producers prequalified as required by **subsection 1206.02(e)** above, bituminous materials covered by this specification will be accepted upon receipt and approval by the Field Engineer of a certification prepared by the producer to cover the quality and quantity of material in each shipping container. Certifications must be based on the results of the producer's quality control testing as required in **subsection 1206.02(d)(3)**.

(2) For producers who are not prequalified, bituminous materials covered by this specification will be accepted based on the results of tests by the Materials and Research Center on samples from each shipping container. Testing must be completed prior to incorporation of the product into the project.

08-17-01 M&R(MT) (RTS)