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### DIVISION 1200
**ASPHALT MATERIALS**

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1201 - GENERAL REQUIREMENTS FOR DIVISION 1200 - ASPHALT MATERIALS

SECTION 1201

GENERAL REQUIREMENTS FOR DIVISION 1200 – ASPHALT MATERIALS

1201.1 DESCRIPTION
This specification covers general requirements for asphalt materials specified in DIVISION 1200.

1201.2 REQUIREMENTS

a. Storage and Heating. Provide storage tanks, pipelines and loading facilities for asphalt materials that are equipped with adequate heating equipment that will not damage the material.

b. Shipping Facilities. Provide shipping containers that are equipped with appropriate hoses and pumps, are insulated and are equipped for heating the contents when requested by the KDOT. Do not heat asphalt materials in transit by open flame heaters on tank trucks.

Before loading, examine the shipping container and remove all remnants of previous cargoes that might contaminate the material to be loaded.

For each shipment to KDOT projects, maintain a loading log showing the following items: contract or project number, date, time, ticket number, shipping container number, contractor, grade and quantity. Mail a copy of the log to the Engineer of Tests monthly during the shipping season.

c. Weighing Equipment. For quantities measured by weight, provide a scale having a platform of adequate length to weigh the longest truck or truck-trailer combination in one operation. Calibrate the scales through the range of use by an approved scale company as often as necessary to verify their accuracy, with intervals not greater than six months. For manufacturers not operating through the winter, calibrate the scales before the production season and thereafter at intervals not greater than 6 months for the duration of the production season. Provide a copy of the calibration report to the Engineer of Tests.

d. Sampling and Inspection.
(1) General. The Engineer will perform the sampling of asphalt materials. Permit inspection of all tanks, tank cars, tank trucks, blending units, loading lines and other items relating to the production and loading of asphalt materials being shipped to KDOT work.

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

The minimum quality control testing and reporting requirements for each product that is shipped to KDOT projects is described in the following sections.

e. Performance Graded Asphalt Binder (PGAB).
(1) Definition of testing levels.
Complete AASHTO Specification Compliance (SC) test for PGAB:
Original Binder:
Flash Point (COC)
Brookfield Viscosity, 275°F
Dynamic Shear
Separation Test, 325°F, 48 hours (Polymer modified only)
Rolling Thin Film Oven Residue:
Mass Loss
Dynamic Shear
Elastic Recovery, 77°F (Polymer modified only)
Pressure Aging Vessel Residue:
Dynamic Shear
Creep Stiffness, S, 60s
Slope, m

Quality Control (QC) Tests for 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) When shipping from Refineries and Blending Facilities, use the following guidelines:
(a) For a tank which is filled before beginning shipping, and then emptied before more material is added, perform 1 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 1 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 1 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 re-certify the source.

(3) When shipping from Terminals, use the following guidelines:
(a) For operations where a tank is filled before beginning shipping, and then emptied before more material is added, 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, 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 re-certify the source.

f. Emulsions and Asphalt Rejuvenating Agents.
(1) Perform 1 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, 77°F or 122°F
   - Residue by Distillation
   - Oil Distillate - WHEN REQUIRED
   - Storage Stability, 1 day - WHEN REQUIRED
   - Sieve Test - WHEN REQUIRED
   - Demulsibility - WHEN REQUIRED
   - Particle Charge - WHEN REQUIRED
Tests on Distillation Residue:
   - Penetration, 77°F
   - Solubility - WHEN REQUIRED
   - Ductility, 39°F or 77°F - WHEN REQUIRED
   - Elastic Recovery - EMULSIONS with a “P” DESIGNATION
(3) A complete AASHTO test for asphalt rejuvenating agents is defined as follows:
   - Viscosity, Saybolt-Furol, 77°F
   - Residue by Evaporation
   - Sieve Test
Tests on Residue:
   - Penetration @39°F, 50g, 5 sec.
   - Asphaltenes
   - Rotational Viscosity @ 275°F
g. Cutbacks.
(1) For a tank being filled and emptied before more material is added, perform 1 complete AASHTO test per tank, and weekly tests for 140°F viscosity.
(2) For a tank being continually filled while continuous shipping is made from the tank, perform 1 complete AASHTO test per week, and daily tests for 140°F viscosity.
(3) When blending directly into a tanker, sample every third truck for 140°F viscosity, and perform 1 complete AASHTO test per week.
(4) A complete AASHTO test for cutback asphalt is defined as follows:
   - Kinematic Viscosity, 140°F
   - Flash Point, TOC or COC
   - Distillation Test:
     - Distillates
     - Residue
   - Tests on Distillation Residue:
     - Vacuum Viscosity, 140°F or Penetration, 77°F
     - Ductility, 77°F or 60°F

h. Reports. 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 1 year. Submit them to KDOT if requested.

1201.3 TEST METHODS
As described in the specification for each type of asphalt material.

1201.4 PREQUALIFICATION
a. Producers are required to submit qualification samples of any type or grade of material provided under this specification that has not previously been produced by them, or which has not been used on KDOT projects within the last 12 months. PGAB producers will also be required to submit material that complies with SECTION 1202. For each material being qualified or re-qualified, submit samples 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.

b. 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.

c. 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. 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.

In addition to the requirements specified in AASHTO R 26, include provisions in the QC plan 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 3 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 40°F. 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 addition to the requirements stated in (1) above, include a detailed description of the method used by your laboratory to determine the modified PGAB mixing and compaction temperature ranges in the QC Plan.

d. 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.

e. An annual split-sample testing program will be conducted for each producer on the Prequalified List. Producers must 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 2 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.

f. Results of the split sample testing program, producer quality control testing required by subsection 1201.2d.(2) and verification testing conducted by the KDOT 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 asphalt materials on the basis of certification will be withdrawn. The producer may still supply asphalt materials, but the contents of each shipping container must be sampled and tested by KDOT before 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.

1201.5 BASIS OF ACCEPTANCE

a. For producers prequalified as required by subsection 1201.4 above, asphalt 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 1201.2d.(3).

b. For producers who are not prequalified, asphalt 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 before incorporation of the product into the project.
1202 - PERFORMANCE GRADED ASPHALT BINDER

SECTION 1202

PERFORMANCE GRADED ASPHALT BINDER

1202.1 DESCRIPTION
This specification covers polymer modified performance graded (PG) asphalt binders.

1202.2 REQUIREMENTS
a. Provide material* that complies with the applicable requirements of SECTION 1201 and AASHTO M 320 except with the added requirements for polymer modified binders as shown in TABLE 1202-1. All binders shown in TABLE 1202-1 must be polymer modified.
*Perform all tests after adding 0.5% high molecular weight amine antistripping agent (by weight) to the PGAB. Contact the Chief Chemist, Bureau of Materials and Research, for a list of acceptable high molecular weight amines.

<table>
<thead>
<tr>
<th>TABLE 1202-1: PERFORMANCE GRADE (PG)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Separation, ASTM D5976, Sec. 6, 163°C, 48 hrs. Difference in R&amp;B from Top to Bottom, °C max. Run on Original Binder</td>
</tr>
<tr>
<td>--------------------------------------</td>
</tr>
<tr>
<td>Separation, ASTM D5976, Sec. 6, 163°C, 48 hrs. Difference in R&amp;B from Top to Bottom, °C max. Run on Original Binder</td>
</tr>
<tr>
<td>Elastic Recovery, ASTM D6084, 25°C, 10 cm elongation, % min. Run on RTFO Residue</td>
</tr>
</tbody>
</table>

b. Provide the grade of material designated in the Contract Documents. KDOT will not make changes in the grade of asphalt. The Contractor may substitute PG asphalt that complies with or exceeds the upper and lower grade designations for the grade specified. For example, if a maintenance overlay specifies a PG 58-22, a PG 64-22 or a PG 58-28 will also be accepted. Such substitutions require advance approval by the Engineer and a no-cost change order.

1202.3 TEST METHODS
Test according to the applicable provisions of ASTM D4402, D5976, D6084 and AASHTO T 48, T 313 and T 315.

1202.4 PREQUALIFICATION
Prequalify material according to SECTION 1201.

1202.5 BASIS OF ACCEPTANCE
See applicable requirements under SECTION 1201.
1203 - EMULSIFIED ASPHALT

SECTION 1203

EMULSIFIED ASPHALT

1203.1 DESCRIPTION
This specification covers emulsified asphalt used for asphalt mixes, surface sealing, microsurfacing and
tack coats.

1203.2 REQUIREMENTS
  a. General. Provide emulsified asphalt that is an intimate, homogenous mixture of base asphalt and
emulsifying agent held suspended in water. Certain emulsified asphalt grades may contain petroleum distillates.
  The grade of material is designated in the Contract Documents. The KDOT reserves the right to change
the grade and class as necessary due to aggregate type, road surface or weather conditions. Make the required
change after being notified in writing by the KDOT.
  Provide emulsified asphalt that remains homogenous and stable during transportation, storage and
distribution. Material that performs unsatisfactorily in any of the above situations will be rejected even if the
material passes all laboratory tests.

  b. Chemical and Physical Requirements. Provide emulsified asphalt that complies with TABLES 1203-1,
1203-2 and 1203-3.

<table>
<thead>
<tr>
<th>TABLE 1203-1: SPECIFICATIONS FOR ANIONIC EMULSIFIED ASPHALT</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Viscosity, Saybolt Furol</td>
</tr>
<tr>
<td>At 77°F, sec.</td>
</tr>
<tr>
<td>At 122°F, sec.</td>
</tr>
<tr>
<td>Residue by Distillation,</td>
</tr>
<tr>
<td>(% by Mass)</td>
</tr>
<tr>
<td>Oil Distillate, (% by Volume)</td>
</tr>
<tr>
<td>Storage Stability, %</td>
</tr>
<tr>
<td>Demulsibility:</td>
</tr>
<tr>
<td>55 ml of 0.02 N CaCl2, %</td>
</tr>
<tr>
<td>50 ml of 0.1 N CaCl2, %</td>
</tr>
<tr>
<td>Sieve Test, % Retained</td>
</tr>
<tr>
<td>Tests on Distillation</td>
</tr>
<tr>
<td>Penetration, 77°F, 100g, 5 sec.</td>
</tr>
<tr>
<td>Solubility, %</td>
</tr>
<tr>
<td>Ductility, 77°F, mm.</td>
</tr>
<tr>
<td>Ductility, 39°F, mm.</td>
</tr>
<tr>
<td>Elastic Recovery @ 50°F, 20 cm elongation, %</td>
</tr>
</tbody>
</table>
### TABLE 1203-2: SPECIFICATIONS FOR CATIONIC EMULSIFIED ASPHALT

<table>
<thead>
<tr>
<th>CRS-1H</th>
<th>CSS-1H</th>
<th>CMS-1</th>
<th>CSS-Special</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Min.</strong></td>
<td><strong>Max.</strong></td>
<td><strong>Min.</strong></td>
<td><strong>Max.</strong></td>
</tr>
<tr>
<td>Viscosity, Saybolt-Furol:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>At 77°F, sec.</td>
<td>----</td>
<td>----</td>
<td>10</td>
</tr>
<tr>
<td>At 122°F, sec.</td>
<td>75</td>
<td>300</td>
<td>----</td>
</tr>
<tr>
<td>Residue by Distillation, (% by Mass)</td>
<td>65</td>
<td>----</td>
<td>57</td>
</tr>
<tr>
<td>Oil Distillate, (% by Volume)</td>
<td>----</td>
<td>3</td>
<td>----</td>
</tr>
<tr>
<td>Storage Stability, %</td>
<td>----</td>
<td>1</td>
<td>----</td>
</tr>
<tr>
<td>Sieve Test, % Retained</td>
<td>----</td>
<td>0.50</td>
<td>----</td>
</tr>
<tr>
<td>Particle Charge</td>
<td>Positive</td>
<td>Positive</td>
<td>Positive</td>
</tr>
<tr>
<td>Tests on Distillation Residue:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Penetration, 77°C, 100g, 5 sec</td>
<td>75</td>
<td>150</td>
<td>50</td>
</tr>
<tr>
<td>Solubility, %</td>
<td>97.5</td>
<td>----</td>
<td>97.5</td>
</tr>
<tr>
<td>Ductility, 77°C, mm.</td>
<td>800</td>
<td>----</td>
<td>800</td>
</tr>
<tr>
<td>Viscosity, Saybolt-Furol, 180°F, sec</td>
<td>----</td>
<td>----</td>
<td>----</td>
</tr>
</tbody>
</table>

(A) Current of the particle charge may need to be more than 8 mA.
(B) Determined by the producer.

### TABLE 1203-3: SPECIFICATIONS FOR EMULSION BONDING LIQUID

<table>
<thead>
<tr>
<th>EBL</th>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Tests on Emulsion:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Viscosity, Saybolt-Furol @ 122°F, sec</td>
<td>25</td>
<td>125</td>
</tr>
<tr>
<td>Storage Stability Test, 24 h, %</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sieve Test, % Retained</td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Residue by Distillation, %</td>
<td>63</td>
<td></td>
</tr>
<tr>
<td>Oil Distillate by Distillation, %</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Demulsibility, % (35 ml, 0.02 N CaCl2) (Anionic Version)</td>
<td>60</td>
<td></td>
</tr>
<tr>
<td>Demulsibility, % (35 ml, 0.8% Dioctyl Sulfosuccinate) (Cationic Version)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Tests on Distillation Residue:**

<table>
<thead>
<tr>
<th>Min.</th>
<th>Max.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penetration, 77°C, 100g, 5 sec</td>
<td>90</td>
</tr>
<tr>
<td>Solubility in Organic Solvent, %</td>
<td>97.5</td>
</tr>
<tr>
<td>Elastic Recovery, %</td>
<td>60</td>
</tr>
</tbody>
</table>

1. After standing undisturbed for 24 hours, the surface shall show no white, milky colored substance, but shall be a smooth homogeneous color throughout.
2. The sieve test is waived if successful application of the material has been achieved in the field.
3. AASHTO T 59 with modifications to include a 400 ± 10°F maximum temperature to be held for a period of 20 minutes.
4. The organic solvent shall be approved by the Engineer as suitable. The test may be waived by the Engineer.
5. Elastic recovery, AASHTO T 301, 50°F, 20 cm elongation, 5 minute hold, % min., run on Distillation Residue.

### c. Mixing Grade Emulsions

Formulate mixing emulsions (MS-1 and CMS-1) for use with regional aggregate types. In general, these will be crushed limestone and/or dolomite with sand for the eastern section of the state and sand-gravel with mineral filler for the central and western sections. Formulate emulsions for use by both windrow and plant mixing methods and for either damp or dry aggregates. Provide an emulsion formulated for the intended end use if these conditions cannot be met by a single formulation. Provide an emulsion that enables material in a stockpile to easily be removed at temperatures as low as 39°F for an extended period of time after mixing.
**d. Modified Emulsions, RS-1HP, CRS-1HP and CSS-1HM.**

1. Provide anionic emulsified asphalt (RS-1H) that complies with TABLE 1203-1 or cationic emulsified asphalt (CRS-1H or CSS-1H) that complies with TABLE 1203-2.

2. Provide a modified emulsion that contains a minimum of 3.0 percent polymer solids by weight of asphalt. RS-1HP and CRS-1HP will have an Elastic Recovery@ 50°F, 20 cm elongation of 60% minimum. CSS-1HM will have a Vacuum Viscosity of 7100 poise minimum.

3. Provide material that shows no evidence of a white substance on the surface after standing for 24 hours.

4. For use in Microsurfacing. Formulate the modified emulsified asphalt so that if the paving mixture is applied at a thickness of 1 inch, and the relative humidity is not more than 50 percent with the ambient air temperature at least 75°F, it will cure sufficiently so rolling traffic can be allowed on the pavement in 1 hour with no damage to the surface. It must show no separation after mixing.

   If the Contractor's storage tanks are equipped with a mechanical propeller type agitation device, and the entire contents of the tank are thoroughly mixed before each day's use, the requirement for satisfactory compliance with the 5 day settlement test will be waived.

**1203.3 TEST METHODS**

a. Test in accordance with the applicable provisions of AASHTO T 44, T 49, T 51, and T 59.

b. When testing modified emulsions, test the Elastic Recovery using AASHTO T 301. In addition, modify the distillation procedure of AASHTO T 59 as follows:

   “Slowly bring the temperature of the lower thermometer to 350 ± 9°F and maintain for 20 minutes. Complete the distillation in 60 ± 15 minutes from the first application of heat.”

**1203.4 PREQUALIFICATION**

Prequalify material under this specification according to SECTION 1201.

**1203.5 BASIS OF ACCEPTANCE**

See applicable requirements under SECTION 1201.
1204 - CUTBACK ASPHALT

SECTION 1204

CUTBACK ASPHALT

1204.1 DESCRIPTION
This specification covers cutback asphalt used for bituminous mixes and surface sealing.

1204.2 REQUIREMENTS

a. General. Provide material that complies with the applicable requirements of SECTION 1201. Provide the grade of material designated in the Contract Documents. The KDOT reserves the right to change any grade of asphalt due to the characteristics of the roadbed, seasons of the year or weather conditions. This change will be to obtain a material having the characteristics of the next higher or lower grade of cutback asphalt of the same type (RC or MC). Make the required change after being notified in writing by the KDOT.

b. Rapid Curing Cutback Asphalt. Provide Rapid Curing Cutback Asphalt consisting of an asphaltic base fluxed with suitable petroleum distillates. Provide a material that shows no separation before use and complies with all requirements for the designated grade shown in AASHTO M 81, Table 1.

c. Medium Curing Cutback Asphalt. Provide Medium Curing Cutback Asphalt consisting of an asphaltic base fluxed with suitable petroleum distillates. Provide a material that shows no separation before use and complies with all requirements for the designated grade shown in AASHTO M 82, Table 1.

1204.3 TEST METHODS
Test according to the applicable provisions of AASHTO M 81 and M 82.

1204.4 PREQUALIFICATION
Prequalify material under this specification according to SECTION 1201.

1204.5 BASIS OF ACCEPTANCE
See applicable requirements under SECTION 1201.
SECTION 1205

ASPHALT REJUVENATING AGENT

1205.1 DESCRIPTION
This specification covers materials to be used as an emulsified polymer-modified asphalt rejuvenating agents for the use in hot in-place recycling of asphalt pavements.

1205.2 REQUIREMENTS
Provide material that has a record of satisfactory performance based on the capability of the material to increase the ductility and lower the viscosity of the asphalt binder in the pavement surface. Provide an asphalt rejuvenating agent composed of a polymer-modified asphalt emulsion. Modify the asphalt base stock with a minimum of 1.5% styrene-butadiene solution polymer. Blend the polymer modified base stock with process oils or other additives before emulsification to achieve the desired finished product properties. The material must comply with the following physical and chemical requirements in TABLE 1205-1:

<table>
<thead>
<tr>
<th>Property</th>
<th>Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Viscosity, Saybolt-Furol at 25°C, sec</td>
<td>15 – 100</td>
</tr>
<tr>
<td>Residue, % min.</td>
<td>60</td>
</tr>
<tr>
<td>Sieve Test, % max.</td>
<td>0.10</td>
</tr>
<tr>
<td>Oil Distillate, % max.</td>
<td>2.00</td>
</tr>
<tr>
<td>Storage Stability, 24 hrs., % max.</td>
<td>1.0</td>
</tr>
<tr>
<td>Tests on Residue from Distillation:</td>
<td></td>
</tr>
<tr>
<td>Asphaltene, % max.</td>
<td>15</td>
</tr>
<tr>
<td>Penetration @ 4°C, 100g, 5 sec.</td>
<td>150-250</td>
</tr>
</tbody>
</table>

1205.3 TEST METHODS
Test in accordance with the applicable provisions of AASHTO T 59, ASTM D 4402 and KT-MR20, “Chemical Analysis of Asphalt Rejuvenating Agents”.

1205.4 PREQUALIFICATION
Prequalify material under this specification according to SECTION 1201.

1205.5 BASIS OF ACCEPTANCE
See applicable requirements under SECTION 1201.