LOUISIANA
DEPARTMENT OF TRANSPORTATION AND DEVELOPMENT
SPECIFICATION

ASPHALT MIXTURE SAMPLES AND PROFICIENCY PROGRAM

SCOPE OF WORK

Contractor to provide all labor, materials and services necessary to supply the Louisiana Department of Transportation Development certified lab technicians with asphalt mixture samples "loose mix" for proficiency certification testing and statistical analysis of the testing results on a bi-annual (two (2) test cycles per year) basis.

SAMPLE REQUIREMENTS

One-hundred fifty (150) lab technicians will run each of the tests noted in the Test Methods chart, two (2) times per year, as prescribed by the AASHTO or ASTM test method.

Quality:
Samples shall be made with aggregate of sufficient hardness and low water absorption typical of Louisiana mixtures (LA abrasion loss of <30% and water absorption <1%). The asphalt binder shall meet a Performance Grade as specified in Table 1002-3 for Performance Grade Asphalt Cements of the Louisiana Department of Transportation and Development's 2016 Standard Specifications for Roads and Bridges. A copy of Table 1002-3 is included in this specification.

If the mixture properties of the sample(s) deviate from the above conditions, the Contractor shall provide the Department with the reported mix aggregate hardness and water absorption for the samples to allow LADOTD to make any necessary adjustments where applicable.

Quantity:
Test sample sizes shall be a minimum of 60 lbs., per sample, per technician. The sample must be divided into four (4) boxes not to exceed 20 pounds each.

NOTE: Four (4) boxes of material equals one sample.

Packaging and Delivery:
Each box shall be wax-lined or lined in a manner that will prohibit the sample from sticking to the sides of the box. Packaging shall be heat resistant up to 350^{o}F.

Boxes shall be delivered on pallets or skids in order to use a forklift for unloading.

REPORTING REQUIREMENTS

Technicians shall provide the Contractor with test result data after each completed test run, identified by technician ID number. The Contractor shall analyze the data collected on a per test method per technician basis and shall submit the report(s) back to the Department within ninety-(90) days of the closing of the data submission window (to be determined for each cycle). Reports shall be supplied in an electronic spreadsheet format, such as Excel, or made available via online access that is exportable.

Reports shall include the following test data:

- Statistical averages of submitted data for each test in the cycle
- Standard deviations of submitted data for each test in the cycle
- Technician ID number for each technician
- Submitted data and Z scores for each technician on each of the following tests:
  - Maximum specific gravity (Gmm)
  - Bulk Specific Gravity (Gmb)
  - Percent Asphalt Content (%AC)
  - Percent Air Voids
  - Aggregate gradation (percent passing) on the #4, #8, and #200 sieves
  - Loaded Wheel Tester (LWT) results at 5000 and 20000 passes

Contractor shall also provide the Department with a consolidated raw data report of all data submitted by each technician for each test in an electronic spreadsheet, such as Excel, or make the data available for export or download.

CODE OF ETHICS

The contractor acknowledges that Chapter 15 of Title 42 of the Louisiana Revised Statues (R.S. 42:1101 et. Seq., Code of Governmental Ethics) applies to the Contracting Party in the performance of services called for in the Contract. The Contractor agrees to immediately notify the Department if potential violations of the Conde of Governmental Ethics arise at any time during the term of the Contract.

CONFIDENTIALITY

The following provision will apply unless the Department specifically indicates that all information exchanged will be non-confidential:

All financial, statistical, personal, technical and other data and information relating to the Department's operations which are designated confidential by the Department and made available to the Contractor in order to carry out the contract, or which becomes available to the Contractor in carrying out the contract, shall be protected by the Contractor from unauthorized use and disclosure through the observance of the same or more effective procedural requirements as are applicable to the Department. The Department in writing shall provide the identification of all such confidential data and information from unauthorized use and disclosure to the Contractor. If the methods and procedures employed by the Contractor for the protection of the Contractor's data and information are deemed by the Department to be adequate for the protection of the Department's confidential information, such methods and procedures may be used, with the written consent of the Department, to carry out the intent of this paragraph. The Contractor shall not be required under the provisions of the paragraph to keep confidential any data or information, which is or becomes publicly available, is already rightfully in the Contractor's possession, is independently developed by the Contract outside the scope of the contract, or is rightfully obtained from third parties.

TEST METHODS CHART

Asphalt Mixture Proficiency Samples "Loose Mix" DOTD Test Methods and Related AASHTO / ASTM Methods							
DOTD Method	**AASHTO Method**	**ASTM Method**	**Test Description**	**Number of test specimens to be run**	**Technician records**	**Report (Minimum)**	**Comments**
TR 327	T 209	D2041	Maximum Specific Gravity of Loose Mix Bituminous Paving Mixtures	2	Individual and average Maximum Specific Gravity (Gmm)	Average Gmm	
TR 304	T 166	D2726	Bulk Specific Gravity of Compacted Bituminous Mixtures using Saturated Surface Dry Specimens	2	Individual gyratory specimen height, individual and average Bulk Specific Gravity (Gmb), and individual gyratory specimen air voids, Va, using average Gmm value	Average Gmb, % air voids	Prepared using AASHTO T312 / ASTM D6925 Gyratory Compactor, Air voids by AASHTO T 269 / ASTM D3203
TR323 & TR309	T 308 / T 30	D6307 / D5444	Determining the Asphalt Binder Contend of Loose Mix Asphalt by the Ignition Method	1	% asphalt binder, individual sieves (1/2", 3/8", #4, #8, #16, #30, #50, #100, #200, pan)	% AC, Sieves (#4, #8, #200)	
TR 332	T 324		Loaded Wheel Tester (Hamburg Rut Test)	2	Sample weight, average void content, rut depth @ 5000, 7500, 10000, 15000, 20000 passes, average rut depth of wheel paths	Average rut depth @ 5000 and 20000 passes	Sufficient material to prepare 4 gyratory briquettes @ 7 +/- 0.5% air voids to create 2 test specimens

Table 1002-3
Performance Graded Asphalt Cements

Property	AASHTO Test Method	PG76-22rm [1, 6]	PG 76-22m	PG 70-22m	PG 67-22	PG58-28
		Spec.	Spec.	Spec.	Spec.	Spec.
Tests on Original Binder:						
Rotational Viscosity @ 135°C, Pa·s [2]	T 316	3.0-	3.0-	3.0-	3.0-	3.0-
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315	1.00+ @ 76°C	1.00+ @ 76°C	1.00+ @ 70°C	1.00+ @ 67°C	1.00+ @ 58°C
Dynamic Shear, 10 rad/s, Phase Angle, °	T 315	75°- @ 76°C	75°- @ 76°C	---	---	---
Flash Point, °C	T 48	232+	232+	232+	232+	232+
Solubility, % [3]	T 44	N/A	99.0+	99.0+	99.0+	99.0+
Separation of Polymer, 163°C, 48 hours, degree C difference in R & B from top to bottom [4]	ASTM D7173 T 53	---	2-	2-	---	---
Tests on Rolling Thin Film Oven Residue:	T 240					
Mass Change, %	T 240	1.00-	1.00-	1.00-	1.00-	1.00-
Dynamic Shear, 10 rad/s, G*/Sin Delta, kPa	T 315		---	---	2.20+ @ 67°C	2.20+ @ 58°C
Multiple Stress Creep Recovery (MSCR), Jnr(3.2 kPa) @ 67°C	T 350	0.5-	0.5-	1.0 - 2.0	---	---
Multiple Stress Creep Recovery (MSCR), % Recovery (3.2 kPa) @ 67°C	T 350	Meets curve [5]	Meets curve [5]	15	---	---
Ductility, 25°C, 5 cm/min, cm	T 51	---	---	---	90+	---
Tests on Pressure Aging Vessel Residue:	R 28					
Dynamic Shear, @ 26.5°C, 10 rad/s, G* Sin Delta, kPa	T 315	6000-	6000-	6000-	5000-	5000- @ 19°C
Bending Beam Creep Stiffness, S, MPa @ -12°C.	T 313	300-	300-	300-	300-	300- @ -18°C
Bending Beam Creep Slope, m value,@ -12°C	T 313	0.300+	0.300+	0.300+	0.300+	0.300+ @ -18°C

[1]Tank mixers are required. Submit written documentation of tank cleaning annually to the Materials Laboratory. Submit written certificates of analysis from the asphalt binder supplier confirming rubber source and size distribution of rubber used. Furnish to the Materials Laboratory.

[2]The rotational viscosity will be measured to determine product uniformity. The rotational viscosity measured by the supplier shall be noted on the Certificate of Delivery. A binder having a rotational viscosity of 3.0 Pa·s or less will typically have adequate mixing and pumping capabilities. Binders with rotational viscosity values higher than 3.0 Pa·s should be used with caution and only after consulting with the supplier as to any special handling procedures and guarantees of mixing and pumping capabilities.

[3]Not all polymers are soluble in the specified solvents. If the polymer modified asphalt digested in the solvent will not pass the filter media, a sample of the base asphalt used in making the polymer modified asphalt should be tested for solubility. If the solubility of the base asphalt is at least 99.0%, the material will be considered as passing.

[4]Prepare samples per ASTM D7173. Determine softening point of top and bottom per AASHTO T 53. Not required when crumb rubber is used.

[5]As defined in AASHTO M 332.

[6]Use a maximum of 10% crumb rubber.