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February 5, 2014

06-Ker-46-37.5/49.0
06-0P7504
Project ID 0612000250

Addendum No. 1

Dear Contractor:

This addendum is being issued to the contract for CONSTRUCTION ON STATE HIGHWAY IN KERN COUNTY IN AND NEAR WASCO FROM 0.7 MILE EAST OF CORCORAN ROAD TO MAGNOLIA AVENUE.

Submit bids for this work with the understanding and full consideration of this addendum. The revisions declared in this addendum are an essential part of the contract.

Bids for this work will be opened on Wednesday, February 26, 2014.

This addendum is being issued to revise the *Notice to Bidders and Special Provisions*.

In the Special Provisions, Section 37 is replaced as attached.

To *Bid* book holders:

Inquiries or questions in regard to this addendum must be communicated as a bidder inquiry and must be made as noted in the *Notice to Bidders* section of the *Notice to Bidders and Special Provisions*.

Submit the *Bid* book as described in the *Electronic Bidding Guide* at the Bidders' Exchange website.

http://www.dot.ca.gov/hq/esc/oe/electronic_bidding/electronic_bidding.html

Inform subcontractors and suppliers as necessary.

This addendum, EBS addendum file and attachments are available for the Contractors' download on the Web site:

http://www.dot.ca.gov/hq/esc/oe/project_ads_addenda/06/06-0P7504

If you are not a *Bid* book holder, but request a book to bid on this project, you must comply with the requirements of this letter before submitting your bid.

Sincerely,

Sharri Bender Ehlert

SHARRI BENDER EHLERT
District Director
District 6 Central Region

Attachment

37-2.05C(1) General

37-2.05C(1)(a) Summary

Section 37-2.05C includes specifications for applying modified asphalt binder seal coat. Modified asphalt binder seal coat includes applying heated modified asphalt binder, followed by heated screenings precoated with asphalt binder, followed by a flush coat.

37-2.05C(1)(b) Definitions

Not Used

37-2.05C(1)(c) Submittals

For each delivery of modified asphalt binder to the job site, submit a certificate of compliance and a copy of the specified test results.

Submit MSDS for each modified asphalt binder ingredient and the modified asphalt binder.

At least 15 days before use, submit:

1. Four 1-quart cans of modified asphalt binder
2. Modified asphalt binder formulation and data as follows:
   - 2.1. Grade of modified asphalt binder
   - 2.2. Type of modifier
   - 3.3. Percent of crumb rubber, if used as modifier

At least 5 business days before use, submit the permit issued by the local air quality agency for modified asphalt binder application equipment.

If an air quality permit is not required by the local air quality agency for spray applying modified asphalt binder, submit verification from the local air quality agency that an air quality permit is not required for this Contract.

Submit a list of names participating in the prepaving conference. Identify each participant's name, employer, title, and role in the production and placement of modified asphalt binder seal coat.

At least 10 days before starting seal coat activities, submit the name of a testing laboratory that participates in the AASHTO Proficiency Sample Program.

The independent testing laboratory must submit modified asphalt binder seal coat tests results to the Engineer.

37-2.05C(1)(d) Quality Control and Assurance

37-2.05C(1)(d)(i) General

California Test 339M is California Test 339 modified as follows:

A. Scope

This modified CT 339 method describes the procedure for determining the transverse spread rate of a bituminous distributor in gallons per square yard.

B. Apparatus

1. Balance sensitive to 0.1 gram with a minimum capacity of ± 2,000 grams.
2. Suitable weighing box with windshield or enclosed area for balance to ensure no impacts from wind conditions.
3. Balance table and/or work bench.

C. Materials

1. 8" x 12' Galvanized Sheet Metal Plates -28 gauge. Verify size of the metal plates used in calculations in Section F.
2. Polyester Filter Roll material.
3. Cementing material.
4. 10" x 13" min. - Manila Envelopes.
5. 30 pound Roofing Felt Paper.

Note: The roofing felt paper is available at most home supply stores or roofing suppliers.

D. Preparation of the Test Plates

1. Cut the polyester material from the roll to an 8" x 12" size as cement to the 8" x 12" plate.
2. Number the bottom of each metal plate. One plate for each one (1) foot of roadway surface to be sprayed.
3. Number each manila envelope.
4. Weigh each test plate + polyester filter placed in each manila envelope.
5. Cut the roofing felt paper to a width of 18".

E. Sampling

1. Prior to the distributor approaching, place the roofing felt paper transversely across the pavement surface at the test location and secure with duct tape.
2. Place the metal plates with the 12" width, transversely across the pavement surface, centered on the roofing felt paper.
3. If desired, mark the test location outside the spray area for future reference.
4. After the distributor vehicle has passed, slide the roofing felt paper off the roadway with the test plates remaining in place, and let cool for a minimum of five minutes.
5. Remove each separate metal plate with the polyester material and binder and place in the properly numbered manila envelope. Care should be taken to ensure that each plate has no material loss.
6. Proceed to weighing area and weigh each of the test plates and the manila envelopes and record as the Gross Weight.
7. Determine the Net Weight of the binder.

F. Calculations

In order to determine the Spread Rate the following is required:

1. The Specific Gravity of the binder.
2. The field application temperature.
3. Sp.Gr. x 62.4 #/cf _ 7.48 #/gal x Appl. Temp. Factor = _____ #/gal
   Sp.Gr. at 60°F.
   Appl. Temp. Factor – Use Column A from Temperature Conversion Table in Section 93 of the Standard Specifications when the density at 60°F is greater than 60.3 #/cf (0.9963).
4. _____ #/gal x 0.074sy** x 454 g/# = _____ gxsy/gal

(Test Plate 8" x 12" = 96 sq. in. _ 1,296 sq in/SY = 0.0741 SY. Verify plate dimensions and adjust accordingly.)

5. Net Wt. of Binder/ #4. above = _____ gal/SY (Spread rate).

Field Vialit Test is the Vialit Test modified as follows:

1. Use a 20 cm x 20 cm galvanized plate 2.0 mm thick and determine the tare weight of the galvanized plate.
2. Place the plate on the existing pavement surface before placing chip seal. After finish rolling the asphalt rubber seal coat and initial surface sweeping, remove the specimen. Place the specimen in a plastic bag.
3. Cure and condition the specimen.
4. Weigh the test specimen and any loose chips in the sample bag.
5. Perform the Vialit test and reweight the test specimen.
6. Calculate the binder weight as follows:

   Binder weight = BAR (gallons/sq yd) X 0.0478 (sq yd) X SG_{ARB} (lbs per gallon)
   Where:
   BAR = binder application rate in gallons per square yard
   Plate dimension = 20 cm X 20 cm = 0.0478 sq yd
   SG_{ARB} = specific gravity of asphalt rubber binder determined under ASSHTO T 228

7. Calculate the chip retention by weight as follows:

   Percent retention = $[SW_{initial} - (BW + TW)] / [SW_{finial} - (BW + TW)]$
   Where:
   $SW_{initial}$ = initial specimen weight
   SW_{finial} = final specimen weight
   BW = binder weight
   TW = tare weight

37-2.05C(1)(d)(ii) Prepaving Conference

Schedule a prepaving conference with the Engineer at a mutually agreed time and place. Make arrangements for the conference facility. Be prepared to discuss:

1. Modified asphalt binder seal coat placement
2. Proposed application rates for modified asphalt binder and precoated screenings and who in the field has authority to adjust application rates and how adjustments are documented
4. When initial sweeping will be done and schedule for maintenance sweepings
5. Opening to traffic requirements
6. Quality control testing
7. Contingency plan for material deliveries, equipment breakdowns, and traffic handling

The following personnel must attend the prepaving conference:

1. Project manager
2. Superintendent
3. Precoated screenings supplier

37-2.05C(1)(d)(iii) Modified Asphalt Binder

For modified asphalt binder, the Authorized Testing Laboratory must perform quality control sampling and testing at the specified frequency and location for the following quality characteristics:

Modified Asphalt Binder (PG 76-22 M)

Quality characteristic	Test method	Minimum sampling and testing frequency	Sampling location	Maximum reporting time allowance
Original binder				
Flash point, min, °C	AASHTO T 48	1 per 100 tons	Distributor truck	3 business days
Solubility, min, %	AASHTO T 44 or ASTM D 5546			
Viscosity at 135°C, max, Pa·s	AASHTO T 316			
Dynamic shear at 10 rad/s, 76 °C G*/sin(delta), kPa	AASHTO T 315			
Dynamic shear at 10 rad/s, 82 °C G*/sin(delta), kPa	AASHTO T 315			
RTFO test[a], mass loss, max, %	AASHTO T 240 or ASTM D 2872			
RTFO test aged binder				
Dynamic shear at 10 rad/s, 76 °C G*/sin(delta), kPa	AASHTO T 315	1 per 100 tons	Distributor truck	3 business days
Dynamic shear at 10 rad/s, 76 °C (delta), %	AASHTO T 315			
Dynamic shear at 10 rad/s, 82 °C G*/sin(delta), kPa	AASHTO T 315			
Elastic recovery[c] at 25 °C recovery, %	AASHTO T 301			
PAV [d] Aging at 110 °C	AASHTO R 28			
RTFO test and PAV aged binder				
Dynamic shear at 10 rad/s, 31 °C G*sin(delta), kPa	AASHTO T 315	1 per 100 tons	Distributor truck	3 business days
Creep stiffness at -12 °C S-value, MPa M-value, MPa	AASHTO T 313			

[a]"RTFO" means the asphaltic residue obtained using the Rolling Thin Film Oven Test. The residue from mass change determination may be used for other tests.

[b]Test temperature is the temperature at which G*/sin(delta) is 2.2 kPa. A graph of log G*/sin(delta) plotted against temperature may be used to determine the test temperature when G*/sin(delta) is 2.2 kPa. A graph of (delta) versus temperature may be used to determine delta at the temperature when G*/sin(delta) is 2.2 kPa. The Engineer also accepts direct measurement of (delta) at the temperature when G*/sin(delta) is 2.2 kPa.

[c]Tests without a force ductility clamp may be performed.

[d]"PAV" means Pressure Aging Vessel

37-2.05C(1)(d)(iv) Precoated Screenings

For precoated screenings, the Authorized Testing Laboratory must perform sampling and testing at the specified frequency and location for the following quality characteristics. All tests, except the film stripping, must be performed on uncoated screenings.

Minimum Quality Control

Quality characteristic	Test method	Minimum sampling and testing frequency	Requirement	Location of sampling	Maximum reporting time allowance
Los Angeles Rattler Loss, %, max Loss at 100 revolutions Loss at 500 revolutions	California Test 211	1st day of production	 10 40	See California Test 125	48 hours
Gradation, percentage passing	California Test 202	2 per day	Modified asphalt binder Seal Coat Screenings Gradation table under Materials	See California Test 125	24 hours
Film stripping,%, max	California Test 302	1st day of production	25	See California Test 125	48 hours
Cleanness value, min	California Test 227	2 per day	80	See California Test 125	24 hours
Durability, min	California Test 229	1st day of production	52	See California Test 125	48 hours

37-2.05C(1)(d)(v) Modified Asphalt Binder Seal Coat

For modified asphalt binder seal coat, the Authorized Testing Laboratory must perform sampling and testing at the specified frequency and location for the following quality characteristics:

Minimum Quality Control

Quality characteristic	Test method	Minimum sampling and testing frequency	Requirement	Location of sampling	Maximum reporting time allowance
Modified asphalt binder spread rate, gal/sq yd	California Test 339M	2 per day	Target value ±0.03 gal/sq yd	Pavement surface	24 hours
Chip retention, %	Vialit Test	1 per day	95	Screenings haul Truck	48 hours
Chip retention, %	Field Vialit Test	1 per day	Report Only	Pavement surface after chip application and rolling	48 hours

37-2.05C(1)(d)(vi) Acceptance Criteria

Modified asphalt binder seal coat acceptance is based on:

1. Visual inspection for the following:
   1.1. Uniform surface texture throughout the work limits.
   1.2. Raveling consists of the separation of the aggregate from the binder.
   1.3. Flushing consists of the occurrence of a film of bituminous material on the surface of the modified asphalt binder seal coat.
   1.4 Streaking consists of alternating longitudinal bands of binder without uniform aggregate retention, approximately parallel with the lane line.
2. For modified asphalt binder acceptance is based on the Department's sampling and testing for compliance with the requirements for the quality characteristics shown in table titled PG Modified Asphalt Binder in section 92.
3. For precoated screenings acceptance is based on the Department's sampling and testing for compliance with the requirements shown in the table titled "Modified asphalt binder Seal Coat Acceptance Criteria Testing Precoated Screenings."

Modified asphalt binder Seal Coat Acceptance Criteria Testing Precoated Screenings		
Quality Characteristic	Test Method	Requirements
Los Angeles Rattler Loss, %, max Loss at 100 revolutions Loss at 500 revolutions	California Test 211	 10 40
Gradation	California Test 202	Modified Asphalt Binder Seal Coat Screenings Gradation table under Materials
Film stripping,%, max	California Test 302	25
Cleanness value, min	California Test 227	80
Durability, min	California Test 229	52

37-2.05C(2) Material

37-2.05C(2)(a) General

Reserved

37-2.05C(2)(b) Modified Asphalt Binder

Modified asphalt binder for modified asphalt binder seal coat must be Grade PG 76-22 M.

37-2.05C(2)(c) Screenings

Screenings for modified asphalt binder seal coat must comply with the coarse 1/2" max grading.

Before precoating with asphalt binder and when tested under California Test 202, screenings for modified asphalt seal coat must have the gradation shown in the following table:

Modified Asphalt Binder Seal Coat Screenings Gradation

Sieve sizes	Percentage passing by weight		
	Course 1/2 " max	Medium 3/8" max	Fine 5/16" max
3/4"	100	100	—
1/2"	85- 90	95-100	100
3/8"	0 – 30	70 – 85	95-100
No. 4	0 – 5	0 – 15	0 - 50
No. 8	--	0 – 5	0 - 15
No. 200	0 – 1	0 – 1	0-5

Screenings must have the values for the quality characteristics shown in the following table:

Seal Coat Screenings

Quality Characteristic	Test method	Requirement
Los Angeles Rattler Loss, %, max Loss at 100 revolutions Loss at 500 revolutions	California Test 211	 10 40
Film stripping,%, max	California Test 302	25
Cleanness value, min	California Test 227	80
Durability, min	California Test 229	52

37-2.05C(2)(d) Modified Asphalt Binder Seal Coat

The independent testing laboratory must conduct testing using the proposed modified asphalt binder and aggregate for compliance with the design requirements shown in the following table:

Quality characteristic	Test method	Requirement
Chip retention, %	Vialit test method for aggregate in chip seals, French chip (Modified)	95

For the Vialit test, the modified asphalt binder must be placed within the proposed modified asphalt binder placement temperature range.

37-2.05C(3) Construction

37-2.05C(3)(a) General

37-2.05C(3)(b) Equipment

Self-propelled distributor truck. The truck must have the following features:

1. Heating unit
2. Pumps that spray modified asphalt binder within 0.03 gal/sq yd of the specified rate
3. Fully circulating spray bar that applies modified asphalt binder uniformly
4. Tachometer
5. Pressure gages
6. Volume measuring devices
7. Thermometer

37-2.05C(3)(c) Precoating Screenings

Screenings must be preheated from 260 to 325 degrees F. Coat with any of the asphalts specified in the table titled "Performance Graded Asphalt Binder" in section 92. Coat at a central mixing plant. The asphalt must be from 0.5 to 1.0 percent by weight of dry screenings. The Engineer determines the exact rate.

Plant must be authorized under the Department's material plant quality program.

Do not stockpile preheated or precoated screenings.

37-2.05C(3)(d) Modified Asphalt Binder Application

At the time of application the temperature of modified asphalt binder must be from 330 to 375 degrees F.

Modified Asphalt Binder Application Rates

Screenings	Application rate range (gal/sq yd)
Course 1/2 max	0.35–0.50
Medium 3/8" max	0.30–0.42
Fine 5/16" max	0.25–0.32

If you use a variable application rate apparatus the asphalt binder application rate in the wheel paths may be reduced by 0.05 gal/sq yd.

Apply modified asphalt binder when the atmospheric temperature is from 60 to 105 degrees F and the pavement surface temperature is at least 55 degrees F.

Do not apply modified asphalt binder unless there are sufficient precoated screenings available to cover the modified asphalt binder within 30 seconds. Modified asphalt binder applied at intersections, turn lanes, gore points, and irregular areas must be covered with precoated screenings within 2 minutes.

Do not apply modified asphalt binder when weather or road conditions are unsuitable, including high wind or when the pavement is damp. In windy conditions you may adjust the distributor bar height and distribution speed, and use shielding equipment, if authorized.

37-2.05C(3)(e) Screenings Application

During transit, cover precoated screenings for modified asphalt binder seal coat with tarpaulins if the ambient air temperature is below 65 degrees F or the haul time exceeds 30 minutes.

At the time of application, screenings for modified asphalt binder seal coat must be from 225 to 325 degrees F.

Precoated Screenings Application Rates

Screenings	Application rate range (lb/sq yd)
Course 1/2 max	20–34
Medium 3/8" max	18–26
Fine 5/16" max	16-24

The exact rate is determined by the Engineer. Spread to within 10 percent of the determined rate.

37-2.05C(3)(f) Rolling and Sweeping

The screenings spreader must not be more than 50 feet behind the modified asphalt binder distribution truck.

A minimum of 3 rollers must be used so that one complete coverage will be provided in one pass.

Perform initial rolling within 90 seconds of spreading precoated screenings. Do not spread precoated screenings more than 200 feet ahead of the initial rolling.

For modified asphalt binder seal coat, perform a minimum of 3 complete coverages with pneumatic tired rollers after the initial rolling.

Perform a sweeping before final rolling.

For final rolling, perform one complete coverage use of a steel-wheeled roller weighing from 8 to 10 tons, static mode only. Complete final rolling before the surface temperature drops below 140 degrees F.

Perform a final sweeping before Contract acceptance. The final sweeping must not dislodge screenings.

Dispose of swept screenings at least 150 feet from any waterway.

37-2.05C(4) Payment

Screenings for modified asphalt binder seal coat are measured by coated weight after they are preheated and precoated with asphalt binder. The weight of screenings must be the coated weight.

If recorded batch weights are printed automatically, the bid item for screenings for coat are measured using the printed batch weights, provided:

1. Total aggregate weight for screenings per batch is printed
2. Total asphalt binder weight per batch is printed
3. Each truckload's zero tolerance weight is printed before weighing the first batch and after weighing the last batch
4. Time, date, mix number, load number and truck identification are correlated with a load slip
5. A copy of the recorded batch weights is certified by a licensed weighmaster and submitted to the Engineer

Screenings for seal coat is paid for as precoated screenings.