
Special Provision to Item 346

Stone-Matrix Asphalt



For this project, Item 346, "Stone-Matrix Asphalt," of the Standard Specifications, is hereby amended with respect to the clauses cited below, and no other clauses or requirements of this Item are waived or changed hereby.

Section 346.2.5. Tack Coat. The first paragraph is voided and replaced by the following.

Furnish CSS-1H, SS-1H, or a PG binder with a minimum high-temperature grade of PG 58 for tack coat binder in accordance with Item 300, "Asphalts, Oils, and Emulsions." Specialized tack coat materials listed on the Department's MPL are allowed or required when shown on the plans. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

Section 346.4.1., "Certification." The paragraph is voided and replaced by the following.

Certification. Personnel certified by the Department-approved hot-mix asphalt certification program must conduct all mixture designs, sampling, and testing in accordance with Table 5. Supply the Engineer with a list of certified personnel and copies of their current certificates before beginning production and when personnel changes are made. Provide a mixture design developed and signed by a Level 2 certified specialist. Provide Level 1A certified specialists at the plant during production operations. Provide Level 1B certified specialists to conduct placement tests. Provide Level AGG101 certified specialists for aggregate testing.

Table 5, "Test Methods, Test Responsibility, and Minimum Certification Levels" is voided and replaced by the following.

**Table 5
Test Methods, Test Responsibility, and Minimum Certification Levels**

Test Description	Test Method	Contractor	Engineer	Level ¹
1. Aggregate and Recycled Material Testing				
Sampling	Tex-221-F	✓	✓	1A/AGG101
Dry sieve	Tex-200-F , Part I	✓	✓	1A/AGG101
Washed sieve	Tex-200-F , Part II	✓	✓	1A/AGG101
Deleterious material	Tex-217-F , Parts I & III	✓	✓	AGG101
Decantation	Tex-217-F , Part II	✓	✓	AGG101
Los Angeles abrasion	Tex-410-A		✓	TxDOT
Magnesium sulfate soundness	Tex-411-A		✓	TxDOT
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Crushed face count	Tex-460-A	✓	✓	AGG101
Flat and elongated particles	Tex-280-F	✓	✓	AGG101
Linear shrinkage	Tex-107-E	✓	✓	AGG101
Sand equivalent	Tex-203-F	✓	✓	AGG101
Organic impurities	Tex-408-A	✓	✓	AGG101
2. Asphalt Binder & Tack Coat Sampling				
Asphalt binder sampling	Tex-500-C , Part II	✓	✓	1A/1B
Tack coat sampling	Tex-500-C , Part III	✓	✓	1A/1B
3. Mix Design & Verification				
Design and JMF changes	Tex-204-F	✓	✓	2
Mixing	Tex-205-F	✓	✓	2
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F , Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F , Part II	✓	✓	1A
Ignition oven correction factors ²	Tex-236-F , Part II	✓	✓	2
Drain-down	Tex-235-F	✓	✓	1A
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Overlay test	Tex-248-F	✓	✓	TxDOT
Boil test	Tex-530-C	✓	✓	1A
4. Production Testing				
Selecting production random numbers	Tex-225-F , Part I		✓	1A
Mixture sampling	Tex-222-F	✓	✓	1A/1B
Molding (SGC)	Tex-241-F	✓	✓	1A
Laboratory-molded density	Tex-207-F , Parts I & VI	✓	✓	1A
Rice gravity	Tex-227-F , Part II	✓	✓	1A
Gradation & asphalt binder content ²	Tex-236-F , Part I	✓	✓	1A
Control charts	Tex-233-F	✓	✓	1A
Moisture content	Tex-212-F , Part II	✓	✓	1A/AGG101
Hamburg Wheel test	Tex-242-F	✓	✓	1A
Micro-Deval abrasion	Tex-461-A		✓	AGG101
Drain-down	Tex-235-F	✓	✓	1A
Boil test	Tex-530-C	✓	✓	1A
Abson recovery	Tex-211-F		✓	TxDOT
Overlay test	Tex-248-F		✓	TxDOT
5. Placement Testing				
Selecting placement random numbers	Tex-225-F , Part II		✓	1B
In-place air voids	Tex-207-F , Parts I & VI	✓	✓	1A
In-place density (nuclear method)	Tex-207-F , Part III	✓		1B
Establish rolling pattern	Tex-207-F , Part IV	✓	✓	1B
Control charts	Tex-233-F	✓	✓	1A
Ride quality measurement	Tex-1001-S	✓	✓	Note 3
Segregation (density profile)	Tex-207-F , Part V	✓	✓	1B
Longitudinal joint density	Tex-207-F , Part VII	✓	✓	1B
Thermal profile	Tex-244-F	✓	✓	1B

- Level 1A, 1B, AGG101, and 2 are certification levels provided by the Hot Mix Asphalt Center certification program.
- Refer to Section 346.4.9.2.3., "Production Testing," for exceptions to using an ignition oven.
- Profiler and operator are required to be certified at the Texas A&M Transportation Institute facility when Surface Test Type B is specified.

Section 346.4.5.2., “Mixing and Discharge of Materials.” The first paragraph is voided and replaced by the following.

Notify the Engineer of the target discharge temperature and produce the mixture within 25°F of the target. Monitor the temperature of the material in the truck before shipping to ensure that it does not exceed 350°F (or 275°F for WMA). The Department will not pay for or allow placement of any mixture produced above 350°F.

Section 346.4.7.2., “Tack Coat.” The paragraph is voided and replaced by the following.

4.7.2.1. Application. Clean the surface before placing the tack coat. The Engineer will set the rate between 0.04 and 0.10 gal. of residual asphalt per square yard of surface area. Apply a uniform tack coat at the specified rate unless otherwise directed. Apply the tack coat in a uniform manner to avoid streaks and other irregular patterns. Apply the tack coat to all surfaces the will come in contact with the subsequent HMA placement, unless otherwise directed. Allow adequate time for emulsion to break completely before placing any material. Prevent splattering of tack coat when placed adjacent to curb, gutter, and structures. Do not dilute emulsified asphalts at the terminal, in the field, or at any other location before use.

4.7.2.2. Sampling. The Engineer will obtain at least one sample of the tack coat binder per project in accordance with Tex-500-C, Part III, and test it to verify compliance with Item 300, “Asphalts, Oils, and Emulsions.” The Engineer will obtain the sample from the asphalt distributor immediately before use.

For emulsions, the Engineer may test as often as necessary to ensure the residual of the emulsion is greater than or equal to the specification requirement in Item 300, “Asphalts, Oils, and Emulsions.”

Section 346.4.7.3.1.3., “Thermal Camera,” is voided and replaced by the following.

Take immediate corrective action to eliminate recurring moderate thermal segregation when a hand-held thermal camera is used. Evaluate areas with moderate thermal segregation by performing density profiles in accordance with Section 346.4.9.3.3.2., “Segregation (Density Profile).” Provide the Engineer with the thermal profile of every subplot within one working day of the completion of each lot. When requested by the Engineer, provide the electronic files generated using the thermal images taken with the thermal camera. Report the results of each thermal profile in accordance with Section 346.4.2., “Reporting and Responsibilities.” The Engineer will use a hand-held thermal camera to obtain a thermal profile at least once per project. No production or placement payment adjustments greater than 1.000 will be paid for any subplot that contains severe thermal segregation. Suspend operations and take immediate corrective action to eliminate severe thermal segregation unless otherwise directed. Resume operations when the Engineer determines that subsequent production will meet the requirements of this Section. Evaluate areas with severe thermal segregation by performing density profiles in accordance with Section 346.4.9.3.3.2. Remove and replace the material in any areas that have both severe thermal segregation and a failing result for Segregation (Density Profile) unless otherwise directed. The subplot in question may receive a production and placement payment adjustment greater than 1.000, if applicable, when the defective material is successfully removed and replaced.

Table 10. “Compacted Lift Thickness and Required Core Height,” is voided and replaced by the following.

Table 10
Compacted Lift Thickness and Required Core Height

Mixture Type	Compacted Lift Thickness Guidelines		Minimum Untrimmed Core Height (in.) Eligible for Testing
	Minimum (in.)	Maximum (in.)	
SMA-C	2.25	4.00	2.00
SMA-D	1.50	3.00	1.25
SMA-F	1.25	2.00	1.25
SMAR-C	2.00	4.00	1.75
SMAR-F	1.50	3.00	1.25

Table 11, “Production and Placement Testing Frequency,” is voided and replaced by the following.

Table 11
Production and Placement Testing Frequency

Description	Test Method	Minimum Contractor Testing Frequency	Minimum Engineer Testing Frequency
Individual % retained for #8 sieve and larger	Tex-200-F or Tex-236-F	1 per subplot	1 per 12 sublots ¹
Individual % retained for sieves smaller than #8 and larger than #200			
% passing the #200 sieve			
Laboratory-molded density	Tex-207-F	N/A	1 per subplot ¹
Laboratory-molded bulk specific gravity			
In-place air voids			
VMA	Tex-204-F		
Segregation (density profile) ²	Tex-207-F , Part V	1 per subplot	1 per project
Longitudinal joint density	Tex-207-F , Part VII		
Moisture content	Tex-212-F , Part II	When directed	
Theoretical maximum specific (Rice) gravity	Tex-227-F	N/A	1 per subplot ¹
Drain-down	Tex-235-F	1 per subplot	1 per 12 ¹ sublots
Asphalt binder content	Tex-236-F	1 per subplot	1 per lot ¹
Hamburg Wheel test	Tex-242-F	N/A	
Recycled Asphalt Shingles (RAS) ³	Tex-217-F , Part III	N/A	1 per project
Thermal profile ²	Tex-244-F	1 per subplot	
Asphalt binder sampling and testing	Tex-500-C , Part II	1 per lot (sample only)	
Tack coat sampling and testing	Tex-500-C , Part III	N/A	
Boil test ⁴	Tex-530-C	1 per lot	

1. For production defined in Section 346.4.9.4., “Exempt Production,” the Engineer will test one per day if 100 tons or more are produced. For Exempt Production, no testing is required when less than 100 tons are produced.
2. Not required when a thermal imaging system is used.
3. Testing performed by the Construction Division or designated laboratory.
4. The Engineer may reduce or waive the sampling and testing requirements based on a satisfactory test history.

Section 346.4.9.2.2.2., “Informational Cantabro Testing,” is voided and is not replaced.

Section 346.4.9.3.3.2., “Segregation (Density Profile).” The second paragraph is voided and replaced by the following.

Perform a minimum of one density profile per subplot. Perform additional density profiles when any of the following conditions occur, unless otherwise approved:

- the paver stops for more than 60 sec.;
- either the Contractor or the Engineer identifies areas with thermal segregation; and
- any visibly segregated areas exist.

Section 346.4.9.4., “Exempt Production.” The second paragraph is voided and replaced by the following.

For exempt production, the Contractor is relieved of all production and placement sampling and testing requirements, except for coring, and the production and placement pay factors are 1.000. All other specification requirements apply and the Engineer will perform acceptance tests for production and placement listed in Table 14 when 100 tons or more per day are produced.

Section 346.5., “Measurement,” is voided and replaced by the following.

- 5.1 Stone Matrix Asphalt.** Hot mix will be measured by the ton of composite hot-mix. The composite hot-mix is the asphalt, aggregate, and additives. Measure the weight on scales in accordance with Item 520, “Weighing and Measuring Equipment.” Provide the Engineer with a daily summary of the asphalt mass flow meter readings for SMAR mixtures unless otherwise directed.
- 5.2 Tack Coat.** Tack coat will be measured at the applied temperature by strapping the tank before and after road application and determining the net volume in gallons from the calibrated distributor. The Engineer will witness all strapping operations for volume determination. All tack, including emulsions, will be measured by the gallon applied.

The Engineer may allow the use of a metering device to determine asphalt volume used and application rate if the device is accurate within 1.5% of the strapped volume.

Section 346.6., “Payment,” the first paragraph is voided and replaced with the following.

The work performed and materials furnished in accordance with this Item and measured as provided under Article 346.5.1, “Measurement,” will be paid for at the unit bid price for “Stone Matrix Asphalt” of the mixture type, SAC, and binder specified. These prices are full compensation for surface preparation, materials, placement, equipment, labor, tools, and incidentals.

Section 346.6., “Payment,” is supplemented by the following.

The work performed and materials furnished in accordance with this Item and measured as provided under Section 346.5.2, “Measurement,” will be paid for at the unit bid price for “Tack Coat” of the tack coat provided. These prices are full compensation for materials, placement, equipment, labor, tools, and incidentals.

Section 346.6.2.2., “Placement Sublots Subject to Removal and Replacement.” The first paragraph is voided and replaced by the following.

If after referee testing, the placement payment adjustment factor for any subplot results in a “remove and replace” condition as listed in Table 14, the Engineer will choose the location of 2 cores to be taken within 3 ft. of the original failing core location. The Contractor will obtain the cores in the presence of the Engineer. The Engineer will take immediate possession of the untrimmed cores and submit the untrimmed cores to the Construction Division, where they will be trimmed if necessary and tested for bulk specific gravity within 10 working days of receipt.

The bulk specific gravity of each core will be divided by the Engineer’s average maximum theoretical specific gravity for that lot to determine the new payment adjustment factor of the subplot in question. If the new payment adjustment factor is 0.700 or greater, the new payment adjustment factor will apply to that subplot. If the new payment adjustment factor is less than 0.700, no payment will be made for the subplot. Remove and replace the failing subplot, or the Engineer may allow the subplot to be left in place without payment. The Engineer may also accept the subplot in accordance with Section 5.3.1., “Acceptance of Defective or Unauthorized Work.” Replacement material meeting the requirements of this Item will be paid for in accordance with this Section.