Standard Method of Test for

Determination of HMA Properties from HMA Contractor Plant Produced Mixtures using Hot or Reheated Samples

SCDOT Designation: SC-T-98 (05/10)

1.   SCOPE

This method covers the determination of asphalt material properties from asphalt mix produced from HMA Plants Statewide.

Safety Notice: This procedure involves elevated temperatures of hot mix asphalt pavements and equipment that could cause bodily injury if all safety precautions are not exercised.

2.   REFERENCED DOCUMENTS

2.1   AASHTO Standards:
- M 231

2.2   SC Test Methods:
- T 62
- T 68
- T 72
- T 75
- T 83
- T 93
- T 96
- T 102
- T 103

3.   SUMMARY OF TEST METHOD

3.1   The asphalt mixture is obtained by a technician and transported to an HMA Lab facility located offsite, and reheated, if necessary to desired test temperatures. Testing will be performed to ensure conformity of asphalt material properties to required specifications. These properties include asphalt binder content, mix gradation, maximum specific gravity, bulk specific gravity, and all volumetric calculations.

4.   SIGNIFICANCE AND USE

4.1   The purpose of this procedure is to determine if asphalt mix being purchased by the SCDOT reasonably conforms to the HMA job mix formula and SCDOT specifications.

5. APPARATUS

5.1 Oven capable of maintaining $335 \pm 5°F$, with an inside volume of at least 5.0 ft^3.

5.2 Oven capable of maintaining $257 \pm 5°F$, with an inside volume of at least 2.5 ft^3.

5.3 Balance, 8 kg or greater capacity, sensitive to 0.1 gm for weighing sample in baskets, meeting the requirements of AASHTO M 231.

5.4 Binder Content - Ignition furnace and equipment – meeting requirements of SC T 75.

5.5 Gradation – Sieve shaker and sieves, and equipment - meeting requirements of SC T 102.

5.6 Bulk Specific Gravity – equipment necessary to perform testing requirements of SC T 68.

5.7 Maximum Specific Gravity – equipment necessary to perform requirements of SC T 83.

5.8 Gyratory Compactor and equipment – meeting requirements of SC T 103.

5.9 Safety equipment: safety glasses, face shield, high temperature gloves, etc. necessary to perform all test procedures listed above.

6. TEST SPECIMEN

6.1 Obtain sample of HMA from a truck delivering asphalt mix to a SCDOT project. The sample must be taken in accordance with SC T 62**.** Transport the sample to a HMA Verification Lab and quarter the sample to the required testing size following SC T 72 or SC T 93.

7. PROCEDURE

7.1 Randomly obtain mixture being supplied to SCDOT projects. Obtain the sample from truck beds using SC T 62.

7.2 Immediately quarter the sample using SC-T-72 or SC-T-93 into three parts: SCDOT Verification Split Sample, Contractor Verification Split Sample and SCDOT Dispute Resolution Sample.

7.2 SCDOT will immediately transfer the SCDOT Verification Split Sample into insulated coolers or boxes to help retain temperatures. Mix should then be

transported to the nearest HMA Verification Lab. Dispute Resolution Samples will also be transported back to the SCDOT verification laboratory until satisfactory results are obtained. The contractor must run their verification split when instructed by the SCDOT, and other samples run during the LOT are considered optional.

7.3   If the mixture is not sufficiently soft to quarter, place mixture in an oven that does not exceed 325° F for mixtures containing PG 64-22, and a maximum of 335° F for mixtures containing PG 76-22, up to 2 hours in order to minimize mix oxidation. Process sample as noted in SC T 103 for gyratory properties. These samples shall be split down or quartered to testing size at compaction temperature.

7.4   Test HMA samples for other applicable tests as required by the contract specifications for Binder Content (SC T 75), Gradation (SC T 102), Maximum Specific Gravity (SC T 83), Stability (SC T 96), % Air Voids, % VMA, % VFA, and Dust /Asphalt Ratio (SC T 68).

8.   CALCULATION –

8.1   All calculations for applicable HMA mix properties should be performed using calculations outlined in the test procedures.

9.   REPORT-

9.1   Report – as applicable