



## WSDOT SOP 723

### **Standard Operating Procedure for Submitting Hot Mix Asphalt (HMA) Mix Designs for Verification**

#### 1. Scope

- 1.1 This standard covers the procedural steps required for submitting a HMA mix design for verification to the Bituminous Materials Section of the State Materials Laboratory.
- 1.2 The values stated in English units are to be regarded as the standard.
- 1.3 This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety and health practices and determine the applicability of regulatory limitations prior to use.

#### 2. Approval of Material

- 2.1 Approvals of the material for HMA are required prior to use per *Standard Specifications* Section 1-06.1.
- 2.2 A HMA mix design is required for each contract.

#### 3. Referenced Documents

- 3.1 WSDOT Standards
    - R 90 WSDOT Errata to FOP for AASHTO Sampling Aggregate Products
    - T 724 Method of Preparation of Aggregate for Hot Mix Asphalt (HMA) Mix Designs
- Standard Specifications* M 41-10

#### 4. Procedure

- 4.1 The Contractor shall determine a design aggregate structure and asphalt binder content in accordance with WSDOT Standard Operating Procedure 732.
- 4.2 Once the design aggregate structure and asphalt binder content have been determined, the Contractor shall submit the HMA mix design on WSDOT form 350-042 demonstrating that the design meets the requirements of *Standard Specifications* Section 9-03.8(2) and 9-03.8(6). For mix designs that contain > 20% RAP and any amount of RAS, the contractor shall include test results for asphalt content and gradation per GSP 5-04.2OPT8.GR5, along with a statement certifying the tonnage of the RAP and/or RAS stockpile(s) to be used in the HMA production.

- 4.3 For mix designs that contain  $\leq 20\%$  RAP and no amount of RAS, the Contractor shall obtain representative samples of aggregate per WSDOT Errata to FOP for AASHTO R 90 that will be used in the HMA production.
- 4.4 For mix designs that contain  $> 20\%$  RAP and any amount of RAS, the contractor shall obtain representative samples of aggregate, RAP and/or RAS per WSDOT Errata to FOP for AASHTO R 90 that will be used in the HMA production. Additionally, the contractor will submit 100 grams each of recovered asphalt residue from the RAP and/or RAS that are to be used in the HMA production.
- 4.5 The Contractor shall submit representative samples of aggregate, RAP and RAS (if required), totaling 700 pounds proportioned to match the Contractor's proposal to the State Material's Laboratory for testing.

For example, if the Contractor's proposal consists of five stockpiles with the following blending ratio:

Material	Ratio
$\frac{3}{4}$ " – #4	20%
$\frac{1}{2}$ " – #8	30%
#4 – 0	30%
RAP	15%
RAS	5%

Calculate the amount of aggregate needed from each stockpile in the following manner.

Material		Pounds of Aggregate Needed Per Stockpile
$\frac{3}{4}$ " – #4	700 lbs x 0.20	140 pounds
$\frac{1}{2}$ " – #8	700 lbs x 0.30	210 pounds
#4 – 0	700 lbs x 0.30	210 pounds
RAP	700 lbs x 0.15	105 pounds
RAS	700 lbs x 0.05	35 pounds

## 5. Shipping Samples

- 5.1 Transport aggregate in bags or other containers so constructed as to preclude loss or contamination of any part of the sample, or damage to the contents from mishandling during shipment. The weight limit for each bag or container of aggregate is 30 pounds maximum.
- 5.2 Each aggregate bag or container shall be clearly marked or labeled with suitable identification including the contract number, aggregate source identification and size of stockpile material. Aggregate bags or containers submitted to the State Materials Laboratory shall be accompanied by a completed transmittal for each stockpile used in the HMA mix design and a completed copy of DOT Form 350-042.