

10. PG Binder Sampling

- a. At least one sample (2-1 quart cans) (2-1 liter cans) of PG Binder will be sampled by the Contractor's QC Technician for every Lot (3750 tons) (3400 Mg) of asphalt concrete mixture produced.
- b. Samples will be taken in accordance with NDR Standard Method T40.
- c. The QC Technician will include on the Sample Identification form all information required by the contract.

Subsection 4 – Control Strip

- a. On the first production day, a 300 ton (270 Mg) control strip shall be placed and approved before full production begins. The Contractor shall construct the control strip using the approved asphalt mix design with laydown and compaction procedures that are representative for the project.
- b. The Contractor shall take at least 2 samples and record the test results for the mixture properties identified in Table 3. Production Tolerances and Verification Testing as described in Table 4 and Paragraph 6 of Subsection 3 will be applied. The mixture and test strip will be acceptable if all tests results (FAA, Binder Content and Air Voids Ndes) are within specification limits. When a control strip is accepted, full production of the mix may begin.
- c. The Contractor shall repeat the control strip process until an acceptable control strip is produced.

Subsection 5 – Method of Measurement and Basis of Pay

1.	<u>Pay Item</u>	<u>Pay Unit</u>	
	High RAP Base	Ton (Mg)	
	<ul style="list-style-type: none"> a. For each subplot of 750 tons (680 Mg) of HRB the unit price is multiplied by the FAA tolerance pay factor for the item "High RAP Base". 		

**INCENTIVE PAYMENT FOR THE USE OF
RECYCLED ASPHALTIC PAVEMENT (RAP) FOR ASPHALTIC MIXTURES
(J-22-1009)**

General

This specification establishes a standard method for paying an incentive to use Recycled Asphaltic Pavement (RAP) in asphalt mixture types: SP-1, SP-2, SP-3, SP-4 Special, SP-4, SP-5, SPS, SPL, SPR and HRB. The intent of this specification is to provide an incentive for incorporating as much RAP into the asphalt mixtures as allowed by the respective mixture's specification.

Method of Measurement

The RAP Incentive Payment shall be established at the completion of the asphalt production for the entire project. A RAP Incentive Payment shall be calculated for each eligible concrete type.

The following formula will be used to calculate the "RAP Incentive Factor".

$$\text{RAP Incentive Factor} = [(A-B) \div 100] \times C \times D$$

Where:

- A = State's Established Percent Binder – based on gradation band.
- B = Actual Percentage of Binder – added to asphaltic mixture.
- C = Unit Bid price of Binder
- D = RAP Pay Factor

The State's established percent binder values ('A' values) are as follows:

Asphaltic Concrete Types	'A' Value
SP-1, SP-2, SP-3, SP-4 Special, SP-4, and SP-5 having 0.500-inch grading band	5.2% Binder
SPS, SPL, and SPR	5.2% Binder
HRB	5.8% Binder
SP-1, SP-2, SP-3, SP-4 Special, SP-4, and SP-5 having 0.375-inch grading band	5.8% Binder

Incentive payments will be made for only the mix types list in this table.

The actual percentage of binder added to the particular asphaltic mixture ('B' value) shall be calculated as follows:

$$B = (\text{Actual Pay Tons of Binder} \div \text{Actual Pay Tons of Asphaltic Concrete}) \times 100$$

The Unit Bid Price of Binder ('C' value) is the established contract price for the performance graded binder type used to produce the mix for which the incentive is being calculated.

The RAP Pay Factor ('D' value) shall be as follows:

RAP Source	'D' Value
Contractor supplied RAP	0.50
State supplied RAP coming from an OFF -project source	0.35
* RAP coming from an ON -project source	0.15

* RAP coming from an **ON**-project source shall be completely utilized before allowing RAP from any other source to be used in the asphalt production.

Contractor supplied RAP and RAP supplied from either off-project or on-project sources shall be stored, handled and used separately. Incentive payments for RAP from these three source types shall be paid separately.

The Contractor has sole responsibility for determining the quality, quantity, and uniformity of the RAP material. The maintenance of any stockpiles and processing of the RAP material shall also be the sole responsibility of the Contractor.

Basis of Payment

The overall RAP Incentive Payments shall be full compensation for all RAP materials and all hauling, handling and processing necessary to complete the work described in this section.

The overall RAP Incentive Payments – for each eligible mix type and/or RAP source – shall be the RAP Incentive Factor multiplied by the total accepted tons of asphaltic concrete in which the RAP was incorporated.

RECYCLED ASPHALT SHINGLES FOR USE IN ASPHALTIC CONCRETE (J-25-1109)

Description:

Recycled Asphalt Shingles (RAS) may be used in Asphaltic Concrete Type SPS. The maximum allowable (by weight) will be 10%.

Materials:

All RAS shall consist of organic felt shingles or fiberglass shingles, obtained from a shingle manufacturing facility or tear offs. Scrap shingles shall not contain any objectionable materials (less than 0.5% by weight), including but not limited to: road tar, metal, glass, wood, plastic, brick, rubber, fabric, or any other material having similar characteristics. The RAS shall not contain harmful quantities of asbestos in accordance with guidelines provided by the Environmental Protection Agency and shall conform to all state and local regulations.

All RAS material shall be sized so that 100% (by weight) of the material passes through a 3/4-inch sieve, and at least 98 percent shall pass through a 1/2-inch sieve.

Before mix design approval, the following shall be submitted, along with materials and paper work for the mix design.

- I. Certification by the processor of the shingle scrap, as to the shingle scraps content and source. Certification forms are available from DOR.
- II. A 5-lb. sample of the shingle scrap material for review.

Construction Requirements:

RAS shall be stockpiled separate, from other salvaged material. Blending of scrap material in a stockpile with other salvage material is prohibited.

Scrap shingles shall be introduced into the hot mix asphalt, at the asphalt mixing plant, at the same point where Recycled Asphalt Pavement (RAP) is introduced.

Asphaltic Concrete containing RAS, regardless of RAP content, shall have a minimum of 55% virgin PG Binder.

Basis of Payment:

The RAS material will be eligible for the RAP Incentive at a rate of 50% as specified elsewhere in the specifications.

RECYCLED ASPHALT SHINGLES (RAS) CERTIFICATION SHEET

Project

Processor of Shingle Scrap:

Name

Address

.....

Contact

Phone

We the undersigned, certify that the shingle scrap to be used on this project, was supplied directly from the processor listed below. We also certify that the material supplied consisted of only organic and/or fiberglass shingles and contains no harmful quantity of asbestos or other hazardous material in accordance with Environmental Protection Agency and all state and local regulations.

.....
Name of Contractor Shingle Scrap was Supplied to

.....
Address

.....
Authorized Representative of Processor of Shingle Material

.....
Date