



RECLAIMED ASPHALT PAVEMENT FOR HMA MIXTURES

GENERAL

This IM describes requirements for processing, storing, documenting, and sampling & testing of Reclaimed Asphalt Pavement (RAP) intended for use in HMA mixtures.

All notifications and documentation shall be submitted to the District Materials Engineer based on the District responsible for the location of the initial RAP stockpile.

PROCESSING

RAP suitable for HMA shall be processed by milling and/or crushing to a maximum particle size of 1 1/2 inches. The contractor shall notify the District Materials Engineer 48 hours before processing begins.

Additional screening or blending may be done to achieve a more uniform stockpile. This processing may be done as the stockpile is built or as part of the HMA plant production. Additional actions that may improve the consistency of the RAP include further crushing to reduce top size, screening into coarse and fine fractions, or blending by proportioning through a two-bin cold feed.

STORAGE

Stockpiles shall be placed on a base with adequate drainage, constructed in layers to minimize RAP segregation and ensure a workable face.

To meet Certified RAP criteria, separate stockpiles shall be constructed for each source of RAP based on the quality of aggregate, type and quantity of asphalt binder, and size of processed material. The Contractor shall notify the Engineer and District Materials Engineer 48 hours prior to blending Classified RAP materials of the same source, aggregate quality, type and quantity of asphalt binder, and size of processed material to retain Classified status.

All RAP stockpiles shall be identified by maps of stockpile areas and signs placed in or near each stockpile.

DOCUMENTATION OF CERTIFIED RAP STOCKPILES

Stockpiled RAP material will only be considered Certified RAP when the following documentation requirements are met. No documentation is required when the RAP is used on the project it came from, or a tied project.

-
- Form #820009r (See [Appendix A](#)) is completed by the RAP owner and a copy is forwarded to the District Materials Engineer within ten days of completing the stockpile.
 - Any special handling, treatment or conditions of the RAP or its use should be described on this form.
 - Maps shall provide details that depict the stockpile site, including adjacent stockpiles of RAP or aggregates, permanent plant equipment and landmarks.
 - Maps and signs shall identify the Stockpile by RAP Identification Number.

The District Materials Engineer will review Form #820009r for accuracy. Portions of the form including assigning the RAP identification number, aggregate quality type, crushed particle and friction type credit, average values for extracted aggregate gradation, aggregate bulk specific gravity, aggregate absorption and asphalt binder content will be completed by the District Materials Engineer.

Notify the District Materials Engineer at least 48 hours before relocating or reprocessing a certified RAP stockpile for future use (not intended for a specific project). The notification shall include the estimated quantity of RAP being relocated or reprocessed and the new location of the stockpile. Relocation of RAP shall be reported on Form #820009r and submitted to the District Materials Engineer within 10 days of completing the relocation. Reprocessing a Certified RAP stockpile may require additional sampling, testing, and a new Form #820009r with reassignment of a RAP Identification Number.

Before January 1st of each year, the contractor shall update report Form #820009r on the status of each Certified RAP stockpile. Report the estimated quantity of RAP removed for the construction season completed and the available RAP in each stockpile for future use.

SAMPLING & TESTING

Mix Design

A certified Level I Aggregate Technician shall obtain the samples. Samples for mix design testing shall be obtained from at least 3 locations. Significant mixture differences in the pavement to be reclaimed may require separate stockpiles and samples. A sampling plan shall be developed and approved by the District Materials Engineer prior to sampling.

Samples for mix design obtained from the RAP stockpile are the most representative, but not always possible when the mix designs are performed. When stockpile samples are not available, RAP samples shall be obtained by milling a minimum of 50 feet of project length at each sample location. Other methods of sampling for mix design, including coring or air-hammer patch areas, may only be used with the approval of the District Materials Engineer.

Obtain sufficient material for contractor mix design testing and owner agency RAP extraction testing as recommended in [IM 510](#). A representative 30-lb. sample split from the total sample shall be delivered to the District Materials Laboratory for extraction testing. Results of the extraction test will be provided to the Contractor within four weeks of sample delivery.

HMA Production Quality Control

RAP quality control is recommended. The Contractor should obtain one representative sample of RAP from the HMA plant RAP feed belt for each lot of HMA produced. The aggregate in the sample should be extracted by ignition oven ([IM 338](#)) or by chemical extraction (AASHTO T-164).

When RAP quality control is used for a mixture, the gradation of the extracted RAP aggregate should be logged and monitored.