

DETERMINING THE ALLOWABLE CONTENT OF RAP IN HMA USING THE BLENDING CHARTS AND RAP MORTAR PROPERTIES

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ABSTRACT

A method to determine the allowable percentage of RAP that can be added in a Hot Mixture Asphalt (HMA) is presented. It is based on a new approach used to determine rheological properties of the RAP binder that overcomes the limitations of the RAP binder extraction and recovery method. From DSR frequency sweep tests carried out on mortars composed of RAP and fresh binder, the master curves of the complex modulus and of the phase angle of the RAP binder can be back-calculated by using the Modified Nielsen model and the Voigt model. The PG grade of the RAP binder can be calculated from the master curves, and used as input in the two approaches reported in the NCHRP 452 to calculate the allowable content of RAP in Superpave mixtures. The method is very effective in determining the allowable content of RAP binder in HMA.