

PERFORMANCE EVALUATION OF HOT RECYCLED MIXTURES CONTAINING SBS MODIFIED BINDER

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ABSTRACT

Over the last decades, Reclaimed Asphalt Pavement (RAP) has become one of the most recycled materials. Currently, RAP is mainly used for unbound layers, without exploiting the replacement of a portion of the more expensive virgin binder. Moreover, the increasing quantity of RAP which includes aged modified binders complicates material analysis. This paper presents a laboratory mechanical investigation on hot recycled mixtures prepared with RAP including aged Styrene-Butadiene-Styrene (SBS) modified binder. A reference mixture with 25% RAP and four mixtures with 40% RAP were investigated. Two total binder contents and two virgin SBS modified binders were used to produce mixtures with 40% RAP, which were designed using the Bailey method. Compactibility, stiffness properties, cracking and rutting resistance were evaluated on laboratory compacted specimens. Results suggest that amounts of RAP up to 40% are suitable for the production of new bituminous materials, when a specific and detailed mix design is performed.