

Aggregate Angularity on the Permanent Deformation Zones of Hot Mix Asphalt

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Abstract : This paper presents a method of evaluating the effect of aggregate angularity on hot mix asphalt (HMA) properties and its relationship to the Permanent Deformation resistance. The research concluded that aggregate particle angularity had a significant effect on the Permanent Deformation performance, and also that with an increase in coarse aggregate angularity there was an increase in the resistance of mixes to Permanent Deformation. A comparison between the measured data and predictive data of permanent deformation predictive models showed the limits of existing prediction models. The numerical analysis described the permanent deformation zones and concluded that angularity has an effect of the onset of these zones. Prediction of permanent deformation help road agencies and by extension economists and engineers determine the best approach for maintenance, rehabilitation, and new construction works of the road infrastructure.

Keywords : aggregate angularity, asphalt concrete, permanent deformation, rutting prediction

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