

Laboratory Evaluation of Asphalt Concrete Prepared with Over Burnt Brick Aggregate Treated by Zycosoil

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Abstract : Asphaltic concrete for pavement construction in India are produced by using crushed stone, gravels etc. as aggregate. In north-Eastern region of India, there is a scarcity of stone aggregate. Therefore the road engineers are always in search of an optional material as aggregate which can replace the regularly used material. The purpose of this work was to evaluate the utilization of substandard or marginal aggregates in flexible pavement construction. The investigation was undertaken to evaluate the effects of using lower quality aggregates such as over burnt brick aggregate on the preparation of asphalt concrete for flexible pavements. The scope of this work included a review of available literature and existing data, a laboratory evaluation organized to determine the effects of marginal aggregates and potential techniques to upgrade these substandard materials, and a laboratory evaluation of these upgraded marginal aggregate asphalt mixtures. Over burnt brick aggregates are water susceptible and can lead to moisture damage. Moisture damage is the progressive loss of functionality of the material owing to loss of the adhesion bond between the asphalt binder and the aggregate surface. Hence, zycosoil as an anti stripping additive were evaluated in this study. This study summarizes the results of the laboratory evaluation carried out to investigate the properties of asphalt concrete prepared with zycosoil modified over burnt brick aggregate. Marshall specimens were prepared with stone aggregate, zycosoil modified stone aggregate, over burnt brick aggregate and zycosoil modified over burnt brick aggregate. Results show that addition of zycosoil with stone aggregate increased stability by 6% and addition of zycosoil with over burnt brick aggregate increased stability by 30%.

Keywords : asphalt concrete, over burnt brick aggregate, marshall stability, zycosoil

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