

Design Procedure of Cold Bitumen Emulsion Mixtures

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Abstract : In highways construction, Hot Mix Asphalt (HMA) is used predominantly as a paving material from many years. Around 90 percent of the world road network is laid by flexible pavements. However, there are some restrictions on paving hot mix asphalt such as immoderate greenhouse gas emission, rainy season difficulties, fuel and energy consumption and cost. Therefore, Cold Bitumen Emulsion Mixture (CBEM) is considered an alternative mix to the HMA. CBEM is the popular type of Cold Mix Asphalt (CMA). It is unheated emulsion, aggregate and filler mixtures, which can be prepared and mixed at ambient temperature. This research presents a simple and more practicable design procedure of CBEM and discusses limitations of this design. CBEM is a mixture of bitumen emulsion and aggregates that mixed and produced at ambient temperature. It is relatively easy to produce, but the design procedure that provided by Asphalt Institute (Manual Series 14 (1989)) pose some issues in its practical application.

Keywords : cold bitumen, emulsion mixture, design procedure, pavement

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