LABORATORY STUDIES ON
CEMENT-ASPHALT EMULSION COMPOSITE

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Abstract

An experimental investigation was conducted on three-phase cement-asphalt emulsion composite in which asphalt was introduced as a cushion layer in between coarse aggregates and cement mortar matrix by dispersing asphalt emulsion coated coarse aggregates into cement mortar matrix. Laboratory tests on fatigue, strength, rigidity, temperature susceptibility and stress-strain relationship were studied to evaluate the mechanical properties on the cement-asphalt emulsion composite. The test results showed that cement-asphalt emulsion composite possesses most of the characteristics of both cement and asphalt namely, the longer fatigue life and lower temperature susceptibility of cement concrete and the stronger toughness and higher flexibility of asphalt concrete. It is expected that cement-asphalt emulsion composite can be an alternative for semi-rigid base-course material, however it slightly reduced the strength compared with control cement concrete.

Key words: Cement – Asphalt emulsion