

Effect of Rice Husk Ash on Properties of Cold Bituminous Emulsion Mix

Authors : Sampada Katekar, Namdeo Hedao

Abstract : Cold Bituminous Emulsion Mixtures (CBEMs) are generally produced by mixing unheated aggregate, binder and filler at ambient temperature. Cold bituminous emulsion mixtures have several environmental and cost-effective benefits. But CBEMs offer poor early life properties too and they require long curing time to achieve maximum strength. The main focus of this study is to overcome inferiority of CBEMs by incorporating Rice Husk Ash (RHA) and Ordinary Portland Cement (OPC). In this study, RHA and OPC are substituted for conventional mineral filler in an increased percentage from 0 to 3% with an increment of 1%. Marshall stability, retained stability and tensile strength tests were conducted to evaluate the enhancement in performance of CBEMs. The experimental results have shown that Marshall stability and tensile strength of CBEMs increased significantly by replacing the conventional mineral filler with RHA and OPC. The addition of RHA and OPC in CBEMs result in a reduction in moisture induced damages. However, stability and tensile strength values of RHA modified CBEMs are higher than that of OPC modified CBEMs.

Keywords : cold bituminous emulsion mixtures, Marshall stability test, ordinary Portland cement, rice husk ash

Conference Title : ICSPER 2018 : International Conference on Sustainable Pavement Engineering and Research

Conference Location : London, United Kingdom

Conference Dates : December 13-14, 2018