

Laboratory Study on CRMB Modified Bitumen Mixes with Titan Polymer

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ABSTRACT

It has been established that strength as well as elastic properties of bitumen mixes increase considerably by addition of TITAN Polymer. The main objective of the study has been to evaluate the laboratory performance of Crumb Rubber Modified Bitumen (CRMB) and its comparative performance when a polymer Polyethylene wax i.e. “TITAN” is used in the already modified bitumen i.e. Crumb Rubber Modified Bitumen. Further study involves to synthesizing the laboratory test results of polymer modified binder, compare the laboratory test results of polymer modified bitumen i.e. CRMB with TITAN 7686 in terms of resistance to rutting, and evaluating the effects of measured viscoelastic properties of the bitumen layer. The addition of small amount of Crumb Rubber polymer dramatically changes the properties of the binder, but Crumb Rubber modified binder also requires high blending, mixing and placement temperatures. Therefore, for better stability, workability and elastic behaviour of bituminous mixes, they may be used in conjugation with other additives such as PE wax and PE Copolymer (7205 and 7686).

Keywords: Polymer Modified Bitumen (PMB), Copolymerization of Bitumen, Polyethylene wax TITAN, Dynamic Shear Rheometer (DSR).