

EVALUATION OF ETHYLENE GLYCOL AS AN ANTI – STRIPPING AGENT IN HOT MIX ASPHALT

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ABSTRACT

Budgetary constraints for new roads and maintenance are the key limitations in construction of the roads. The high cost of labor and operations are the key factors for maintenance and repairs of deformation such as permanent deformation (rutting), potholes, undulations, fatigue and low temperature cracking. Many highway agencies have been experiencing these failures together with water damage. Many variables affect the amount of water damage in the asphalt concrete layer such as the type of aggregate, bitumen, mixture design and construction, level of traffic, environment and the additive properties that are introduced to the bitumen, aggregate or bitumen-aggregate mixture.

Ethylene glycol is an organic silicon water soluble compound that allows waterproofing of soils and aggregate surfaces permanently and acts as a bonding agent to bitumen. Therefore, this study is aimed to determine the effect of ethylene glycol additive on the stripping potential and moisture susceptibility characteristics of hot mix asphalt (HMA). The stripping properties and moisture susceptibility characteristics of the samples have been evaluated by means of captured images as well as the Modified Lottman Test (AASHTO T 283) respectively.

KEY WORDS: Ethylene glycol, Water damage, Modification