Comparative Study of EE2 and Polybilt Modified Asphalt Concrete

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Abstract: The harsh environment of the Gulf countries (GCs) raises a need to use Polymer Modified Asphalt Concrete (PMAC) in the road construction. This need associated with the rapid growth in polymer industries has made several polymer alternatives available to be used in PMAC roads. The objective of this paper is to study the differences in the performance of two locally marketed polymers for use in pavement constructions.

Asphalt concrete Marshall Specimens were prepared using Polybilt and EE2 polymer modified asphalts and another set of specimens made of the unmodified asphalt. All specimens were tested for resilient modulus, moisture sensitivity (Lottman test), fatigue, and rutting at two different temperatures to monitor the lab performance of the three mixes.

The results showed that both polymers have better performance compared to the unmodified mix. The two polymers had almost the same performance except their sensitively to water. One of them has shown almost the same water sensitivity as that of the unmodified asphalt mix. Therefore, it is important to assess the potential of using different polymers before selecting one to improve specific properties that can specifically address the problems in local pavement industry.

Keyword: Construction Method, Moisture Susceptibility, Asphalt Modification, Gulf Countries.