

ABSTRACT

The objectives of this study is to evaluate the causes of failure of the Tar Epoxy Urethane System which was applied to the orthotropic steel deck of the R.M. IX bridge in 1987. The failure of the laid pavement was claimed to be from : (1) the high accumulated temperature in the steel deck ;(2) the high slope of the bridge deck ; and (3) the high traffic loading and repetition. In the study a mixture of an asphalt mastic was invented from limestone fine aggregate plus filler and a bitumen called Bitusil 103 which was modified by 15% E.V.A. The significance of the invention is to used local material and technology. A series of test had been performed and evaluated. The conclusion was that material can be stable on a steel plate at temperature up to 58° C without any sinificance failure. For slope of the bridge which introduces a high shearing force was not a noticable problem for loading of 24 tons at 58° C. Only distortion found was on the asphalt mastic which was built as being wearing surface, the estimated temperature was only 48° C; the invented material could be used on the steel deck or, at least, with a small degree of modification.