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**Performance Investigation of Modified Bitumen
With Ethylene-Vinyl Acetate Polymer and
Rubber Powder by Performing Classical and
Superpave Tests**

In this study, ethylene vinyl acetate (EVA) polymer and rubber powder were used as 85/100 bitumen modifiers. First, classical bitumen tests including penetration grade and softening point were performed on the samples and improvement of bitumen base properties was observed. Then, in order to evaluate the performance of modified bitumen at high temperature and compare it with the behavior of base bitumen, the Superpave protocol was followed. In this way, dynamic shear rheometer (DSR) test was performed and $G^/\sin\delta$ index was examined on bitumen samples before and after aging. In addition, the bending beam rheometer (BBR) test was performed to evaluate the low temperature behavior of the modified bitumen according to the SHRP standard based on the creep stiffness and creep rate indices. The results showed that the combination of used additives improves the performance properties of bitumen at high temperature and also at low temperature compared to base bitumen. Based on the BBR test, 3% EVA polymer and 4% rubber powder, with a 12% reduction in creep stiffness in this composition, were selected the optimal values for the mixture.*

Keywords: Modified bitumen, Ethylene vinyl acetate, Rubber powder, Performance behavior, Super-pave.

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