

Effect of Evotherm 3G on the performance of asphalt mixture

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ABSTRACT

Temperature is the main element in producing asphalt mixture for asphalt pavement. The presence of Evotherm 3G in the asphalt can help to reduce the temperature of asphalt production and hence reduce energy usage. This study presents the bitumen properties with Evotherm 3G and the effect of this additive on asphalt mixture performance in reducing production temperature compared to hot mix asphalt. The bitumen tests were performed on the bitumen penetration grade of 60/70 using the penetration, softening point, and viscosity tests, while the Marshall samples were produced for the asphalt properties evaluation. The results showed that asphalt containing Evotherm 3G produced at a lower compaction temperature has comparable stability and flow to the conventional hot mix asphalt. The viscosity data of the bitumen added with Evotherm 3G does not give a significant difference compared to the penetration value. This justifies the applicability of Evotherm 3G as a surfactant in warm mix asphalt production.

KEYWORDS

Evotherm 3G; Hot mix asphalt; Marshall stability; Warm mix asphalt

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