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HIGH STABILITY DENSE ASPHALT MIXTURE WITH REDUCED MAXIMUM SIZE AGGREGATE

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Abstract

Aggregate is a major component of asphalt mixes, so their properties play a significant role in the mix perf aggregate grading that yields maximum solid density and maximum particle interlock is highly desirable fo concrete mixes. Maximum particle interlock leads to high mix density and stability. Whereas minimum voic material composition leads to high strength. This paper studied the effects of maximum aggregate relative characteristics of asphalt concrete mixtures and the potential of reaching a comparative asphalt mix with l sizes in the order of 1 inch and less. To achieve this objective, different aggregate gradations were used w maximum aggregate size (MAS) (1, 3/4, 1/2 and 3/8 inch) by using Fuller and Thompson's Equation (Inter Equation) which used to describe a maximum density gradation for a required maximum aggregate size to prepare the investigated asphalt mixes. Marshall test, loss of stability test, indirect tensile strength test, cr conducted to measure these characteristics for all mixes. The analytical analysis of the results indicated th aggregate gradations with low maximum size aggregate achieve higher stability values against that of the maximum size gradations, and enhancing the performance of asphalt mixtures in particular crack resistanc