World Academy of Science, Engineering and Technology
International Journal of Civil and Architectural Engineering
Vol:9, No:12, 2015

A Study on Fatigue Performance of Asphalt Using AMPT

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Abstract : Asphalt pavement itself is a mixture made up of mainly aggregates, binders, and fillers that acts as a composition used for pavement construction. An experimental program was setup to determine the fatigue performance test of Asphalt with three different grades of conventional binders. Asphalt specimen has achieved the maximum optimum bulk density and air voids with a consistent bulk density of 2.3 t/m3, with an air void of 5% ± 0.5, before loading into the Asphalt Mixture Performance Tested (AMPT) for fatigue test. The number of cycles is defined as the point where phase angle drops, which is caused by the formation of cracks due to the increasing micro cracks when asphalt is undergoing repeated cycles of loading. Thus, the data collected are analyzed using the drop of phase angle as failure criteria. Based in the data analyzed, it is evident that the fatigue life of asphalt lies on the grade of binder. The result obtained shows that all specimens do experience a drop in phase angle due to macro cracks in the asphalt specimen.

Keywords : asphalt binder, AMPT, CX test, simplified – viscoelastic continuum damage (S-VECD)
Conference Title : ICCEAE 2015 : International Conference on Civil, Environmental and Architectural Engineering
Conference Location : Paris, France
Conference Dates : December 30-31, 2015