

## **AN EVALUATION OF ASPHALT PAVEMENT REINFORCEMENT WITH GEOCOMPOSITE AND GEOGRID**

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### *ABSTRACT*

This paper investigates the test results of fatigue crack propagation of large dimension asphalt pavement samples reinforced with geocomposite and geogrid. The large dimension samples were cut from the test section of asphalt pavement structure. The research were conducted under controlled rate displacement measured along the loading axis. Laboratory scale testing were carried out in terms of multiple repeated loading and constant temperature . An original method of making large dimension asphalt pavement samples has been described. Crack propagation tests were carried out on a special unit for fatigue testing. The evaluation of fatigue crack propagation was based on analysis of the reinforcement efficiency index expressed by a function of the load cycles number and energy absorbed in volume of the tested samples. The results show that asphalt pavement samples reinforcement with both geocomposite and geogrid significantly increases the fatigue crack propagation resistance in comparison to non-reinforced sample. The test results also give some indications on better fatigue crack resistance behavior for sample reinforced with geocomposite in relation to sample reinforced with geogrid. Considerable increase of the reinforcement efficiency index calculated for sample reinforced with geocomposite against to one calculated for sample reinforced with geogrid has been noticed. Higher reinforcement efficiency index is desirable for better resistance to fatigue crack propagation.

*KEY WORDS:* Geogrid, geocomposite, fatigue crack propagation, energy.