

عنوان مقاله:

Investigating the Effect of AC Overlays Reinforced with Geogrid and Modified by Sasobit on Rehabilitation of Reflective Cracking

محل انتشار:

Journal of Rehabilitation in Civil Engineering, دوره 8, شماره 1 (سال: 1399)

تعداد صفحات اصل مقاله: 16

نویسندگان:

Gholamali Shafabakhsh - Faculty of Civil Engineering, Semnan University

Saeid Asadi - Faculty of Civil Engineering, Semnan University, Semnan, I. R. Iran

خلاصه مقاله:

In this paper, the effect of asphalt overlays, which were reinforced with geogrid, modified by sasobit and combination of them on the rehabilitation of reflective cracking, is studied. The laboratory tests were conducted under dynamic loading in bending mode to investigate reflective cracking retardation compared to reference samples. The results illustrated that in a certain range of variables, temperature variations, and sasobit percentages are the most effective parameters on fatigue life and other responses. Another effective variable was the type of interlayer in asphalt slabs. Furthermore, it has been found that the combination of samples (modified by sasobit, reinforced with geogrid and a ۳cm sand asphalt layer) (۱SP.G.SA & ۲SP.G.SA) had a better performance such as improving fatigue life and reducing crack propagation in all loading and temperature conditions compared to the reference samples. Based on the image processing results, the process and shape of crack growth vary greatly at different temperatures. Generally, at low temperatures (۲۰°C) and frequencies, the cracks grow from bottom to top, and the width of them gets smaller. However, with increasing the temperature and loading frequency, the top-down cracks are also observed, which is due to the reduced resistance of the asphalt resulting from the reduction of adhesion and the fastening between the aggregate and bitumen.

کلمات کلیدی:

Reflective cracking, asphalt overlay, geogrid, sasobit, Loading frequency, Crack Propagation, Sand Asphalt, combination sample, Improvement Index

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