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Investigating the Performances of Geosynthetic-Reinforced Pavement During Construction by Field Testing and Laboratory Testing

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Abstract

Geosynthetic materials have been utilized in various engineering applications. In pavement engineering, geosynthetics can serve as an interlayer system, providing reinforcement, filtration, and drainage, etc. Three field trial sections were constructed, including one section with conventional pavement structure, one section with fibreglass geogrid in the asphalt binder course, and one section with geogrid composite on top of the subgrade. Laboratory testing was conducted on sampled unbound materials to evaluate the subgrade condition for further evaluation of the impact of geosynthetics. Field testing was also conducted on each layer of pavement structure during construction. The section with geogrid in the asphalt layer has the highest stiffness tested on the asphalt binder course resulting from the geogrid-reinforcement. Long-term monitoring is needed to further evaluate the function of geogrid composite on the subgrade.