

Effect of using geotextiles on behavior of Sabkaha subgrades.

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Abstract

In this research, the effect of geotextiles on behavior of sabkha subgrade was investigated in the laboratory. Behavior of sabkha subgrade under cyclic loading was evaluated using conventional construction and Soil-fabric-aggregate systems.

All tests consisted of placing sabkha, geotextiles and granular material in a cylindrical mold 32 x 42 cm, and loading the surface with a circular plate. The effect of several variables, including the thickness of the subbase, level of stress, type of geotextile and the saturation effect, was studied. The results indicate that the use of geotextiles in construction of roads on sabkha subgrade will have a significant effect on the behavior and performance of these roads especially under wet conditions. Also, it was found that the effect of geotextile on the soil fabric aggregate (SFA) systems diminishes as the thickness of granular subbase increases.

The results of the dynamic loading tests were used in developing a rutting prediction model to predict the permanent deformation in soil aggregate and soil fabric aggregate systems.