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Abstract

Geocells, one type of geosynthetics manufactured in a form of three-dimensional interconnected cells, have been reported to effectively provide lateral confinement to infill material to increase the modulus and bearing capacity of base courses. Most studies so far have been focused on the behavior of geocell-reinforced bases under static loading. Geocells used for pavement applications are subjected to repeated loading. Limited studies have been conducted so far to investigate the performance of geocell-reinforced bases under repeated loading. In this study, single and multiple geocell-reinforced granular bases with three types of infill materials (Kansas River sand, quarry waste, and AB-3 aggregate) were tested and compared with the unreinforced bases under repeated loading. This study experimentally investigated the effect of the geocell reinforcement on the permanent deformation and percentage elastic deformation of

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