عنوان مقاله:

Finite element analysis on the performance of geosynthetic reinforced soil walls regarding differential settlements

محل انتشار:

سیزدهمین کنگره بین المللی مهندسی عمران (سال: 1402)

تعداد صفحات اصل مقاله: 9

نویسندگان:

Seyed Meisam Alavi, - *School of Civil Engineering, Iran University of Science and Technology (IUST), Tehran, Iran*

Hamid Reza Razeghi - *School of Civil Engineering, Iran University of Science and Technology (IUST), Tehran, Iran*

Ali Akbar Heshmati R. - *School of Civil Engineering, Iran University of Science and Technology (IUST), Tehran, Iran*

خلاصه مقاله:

The effect of reinforcement parameters (i.e., length, stiffness, and vertical spacing) on the normalized differential settlements between geosynthetic reinforced soil (GRS) wall facing and reinforced zone was investigated in ۳۴ short (۸ m) and ۳۰ tall (۲۰ m) verified numerical models through finite element analysis. The influence of retained soil type was also considered in the results. Furthermore, the backfill soil was modeled using HS-small constitutive model. The results illustrated that increasing geogrid stiffness was the most effective method for reducing settlements in all short and tall models. Increasing reinforcement length (to values more than ۰.۸H) had a minor effect on the normalized settlements. Moreover, the normalized values of differential settlements and the effectiveness of vertical spacing of reinforcements were considerably different in short and tall GRS walls

کلمات کلیدی:

.Geosynthetics, Tall GRS walls, Differential settlements, Finite element analysis, Reinforcement parameters