

Effects of wetting on the soil-geogrid interaction

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Abstract

This paper presents an evaluation of the soil-geogrid interaction under the effects of inundation. An experimental program was conducted using a series of laboratory large-scale pullout test for two types of geogrid. Observations and comparisons under different normal stresses were made for pullout behaviors at the interface of soil and geogrid before and after wetting. Test results have shown that the pullout resistance increased with the increases of applied normal stresses for both before and after wetting conditions. However, inundation of a soil-geogrid system presents significant negative effect on the soil-geogrid interaction. The values of pullout resistance sharply decreased more than 50 % after inundations were applied. The types of geogrid and the applied normal pressure showed only minor effect on the pullout resistance. The results obtained in this study appear to be favorable for a better understanding of analysis for RES under severe rainfall condition.

Keyword : pullout resistance, geogrid, wetting, rainfall