

عنوان مقاله:

Studying the Effect of Roughness on Soil-Geotextile Interaction in Direct Shear Test

محل انتشار:

فصلنامه زمین شناسی مهندسی، دوره 12، شماره 5 (سال: 1397)

تعداد صفحات اصل مقاله: 30

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خلاصه مقاله:

One of the methods of increasing soil resistance against failure is soil reinforcement using geosynthetics. Soil-geosynthetic interactions are of great importance and are affected by friction and adhesion at their interface. Soil gradation, contact surface roughness and geotextile density are among the factors affecting soil-geotextiles interaction this study, to investigate the effects of these factors, large-scale direct shear tests have been conducted using a well and a poorly graded sand at a relative density of ۸۰% reinforced with two geotextiles having different tensile strengths and mass per unit area. Samples were subjected to normal pressures of ۱۲.۵، ۲۵ and ۵۰kPa and sheared at a rate of ۱ mm/min. Geotextile surface roughness was achieved by gluing two different single sized sand particles. Results show that increasing geotextile surface roughness increases shear strength at soil-geotextile interface. Geotextile tensile strength mobilization is shown to depend on soil grain size at the interface. The coarser and more angular the soil particles, the more effective the soil-reinforcement interactions. Geotextile tensile strength and its mass per unit area are

کلمات کلیدی:

.Geosynthetic, Geotextile, Direct shear, Interaction, Roughness, Soil gradation

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