

عنوان مقاله:

Shear Strength Parameters of Sand-Reinforced with Waste Tire Shreds

محل انتشار:

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خلاصه مقاله:

With the development of societies and increasing vehicles, numerous waste tires are discarded annually and enter environment. On the other hand, the ground soil is to be reinforced in some geotechnical projects. This paper presents the influence of tire shred contents, compaction, and size variations of waste tire shreds on shear strength parameters of sand-tire shred mixtures. The results obtained from performing large direct shear tests on sand-shred specimens show that the friction angle of the mixtures increase significantly with increasing shred contents and compaction energy. It has been also investigated that optimizing the shred dimensions can increase the friction angle of the mixtures in the range of 13% to 63% compared with the friction angle of the sand alone. With the selected widths of rectangular shreds, compaction efforts, shred contents, and the variations of aspect ratios, it is possible to increase the friction angle 1 up to 113.5%, that is $1 = 67\sigma$. It has been investigated that for a given width of tire rectangular shreds, there is solely a certain length, which gives the greatest 1. This is the main contribution of this paper in the subject.

کلمات کلیدی:

Waste tire, tire shreds, environment, shear strength parameters, shear tests

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