

عنوان مقاله:

Reduction of Soil Permeability Using Biological Method

محل انتشار:

دهمین کنگره بین المللی مهندسی عمران (سال: 1394)

تعداد صفحات اصل مقاله: 6

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خلاصه مقاله:

An impermeable layer is one of the main parts of a landfill. One of the most common methods of constructing an impermeable layer is to use clay. If there is not a proper source close to the project site, preparing clay could be a major concern for civil engineers. One of the best options to provide required soil is to use the soil of the field. Usually the engineering properties of the soil need to be improved and in these projects the main property is permeability of soil. One of the novel methods that have been studied for improvement of the engineering properties of soils is the biological method. The method is actually a combination of biology and civil engineering, uses biological organisms. As a case study, this paper presents the use of this technique for permeability reduction of the soil base of the Shiraz landfill in Fars province, Iran. Bacillus Sphaericus with different values of optical density (O.D.) were used. The effects of curing time and bacterial O.D on the permeability of the soil have been studied. Soil permeability was measured using the falling head method. Tests showed that Bacillus sphaericus can decrease permeability of soil of Shiraz landfill significantly

کلمات کلیدی:

Permeability of soil, Microbial calcite precipitation, Falling head test, Soil treatment

لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/364362>

