

عنوان مقاله:

Investigating the effect of Micro silica on bearing capacity and compressive strength of dispersive soils

محل انتشار:

هشتمین کنفرانس بین المللی پژوهش در علوم و مهندسی و پنجمین کنگره بین المللی عمران، معماری و شهرسازی آسیا (سال: 1402)

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خلاصه مقاله:

The most important problem in dispersive soils is the problem of internal washing water and the problems caused by it, which is especially relevant in hydraulic structures. It can be seen that it was built on these soils. The recognition of the phenomenon of dispersive and the identification of dispersive soils has caused more and more precise criteria to be considered in the selection of loan sources for fine-grained soils. If it is necessary to use dispersive soils, you must think of a solution to deal with the phenomenon of washing. Many studies have been done on soil stabilization methods with lime and gypsum, but no comprehensive research has been done on the effect of micro-silica on mechanical parameters. The use of micro silica, as a by-product and waste of ferrous-silica factories, can be considered as a cost-effective material, therefore, it can be effective in stabilizing the soil from various aspects, which is discussed in this article. The addition of micro silica with percentages (۲.۵, ۵, ۷.۵, ۱۰, ۱۲.۵, ۱۵ and ۲۰) of the resistance of different clay samples was investigated and evaluated. The results indicated a significant increase in compressive strength and bearing capacity, so that the addition of ۷.۵% micro silica increased the compressive strength by ۷۰%.

کلمات کلیدی:

Dispersive clay, micro silica, compressive strength, bearing capacity

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