

عنوان مقاله:

Effect of Plasticity Index on Compaction Test of the Nano-Soil-Cement

محل انتشار:

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خلاصه مقاله:

Soil cement is a mixture of Portland cement, soil and water, in which hydration of cement and compaction causes the materials' constituents to bond together making a dense and durable composition with low permeability and abrasion resistant. Since most of the recent researches are focused on the addition of nano-SiO₂ on concrete, in this paper it has been attempted to use nano-SiO₂ particles in soil-cement and observe the effects. Due to the fact that in concrete there are no particles passing sieve ۲۰۰ and this restriction does not apply to soil-cements, some tests were carried out on the nano-SiO₂ + soil-cement matrix because of the meaningful difference between concrete and soil-cement. The test procedure consists of moisture-dry density. In these tests, silica fume (with specific surface area of ۲۱ m²/g), nano-SiO₂ (with specific surface area of ۲۰۰ and ۳۸۰ m²/g) were added to soil-cement. The results show that adding certain amounts of nano-SiO₂ particles to the soil-cement with low plasticity index matrix can improve the compaction .of soil cement

کلمات کلیدی:

Soil-cement, Plasticity Index, Compaction Test, Nano-SiO₂

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