عنوان مقاله:

Effect of type and content of nanosilica on permeability of soil cement

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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-SiO۲ on concrete, in this paper it has been attempted to use nano-SiO۲ particles in soil-cement and observe the effects. The test procedure consists of hydraulic conductivity. In these tests, silica fume (with specific surface area of ۲۱ m۲/g), nano-SiO۲ (with specific surface area of ۲۰۰ and ۳۸۰ m۲/g) were added to soil-cement. The results show that adding certain amounts of nano-SiO۲ particles to the soil-cement matrix can reduce permeability and speed hydration reactions in the matrix in presence of nano-SiO۲ particles.

کلمات کلیدی:

Hydraulic Conductivity, Nano-SiO۲, Soil-ement

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