

Experimental Investigation on Correlation Between Permeability Variation and Sabkha Soil Salts Dissolution

Authors : Fahad A. Alotaibi

Abstract : An increase in salt dissolution rate with continuous water flow is expected to lead to the progressive collapse of the soil structure. Evaluation of the relationship between soil salt dissolution and the variation of sabkha soil permeability in terms of type, rate, and quantity in order to assure construction safety in these environments. The current study investigates the relationship of soil permeability with the rate of dissolution of calcium (Ca²⁺), sulfate (SO₄²⁻), chloride (CL⁻¹), magnesium (Mg²⁺), sodium (Na⁺), and potassium (K⁺) ions. Results revealed an increase in sabkha soil permeability with the rate of ions dissolution. This makes the efficiency of using a waterproofing stabilization agent in the reduction of sabkha salts dissolution the main criterion is selecting suitable stabilizing method.

Keywords : sabkha, permeability, salts, dissolution

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