Electrokinetic Stabilization of Marine Clayey Soils by Different Injection Procedures

Yongqiang Tang^{1,*}, Ningwei Wang^{1,2}, Tie Liu²

¹ Institute of Engineering Mechanics, China Earthquake Administration; Key Laboratory of Earthquake Engineering and Engineering Vibration of China Earthquake Administration, Harbin 150080, China.

² School of Civil Engineering, Shenyang Jianzhu University, Shenyang 110168.

*E-mail: tangyongqiang200@sina.com

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The nonuniform improvement of strength in marine clayey soils is one of a primary problem observed when electroosmosis treatment is conducted in these soils. Five group tests were conducted to access the effect of electrokinetic stabilization on treatment of soft clay by different injection procedure of Ca^{2+} and SiO_3^{2-} ions. The current, drainage rate, energy consumption and bearing capacity were analyzed. The results show that the injection of CaCl_2 and Na_2SiO_3 at the anode and cathode, respectively, is the most effective operation procedure. Consequently, most of the soil surface bearing capacity is higher than 180kpa, accounting for 70.4% of the total soil sample area, the increase in strength was attributed to injection of up to 43% of chemical additives after a 14-day curing were measured in the middle zone.

Keywords: Electrokinetic Stabilization; Soil improvement; Injection procedure; Chemical solution.

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