

Improvement of Soft Clay Soil with Biopolymer

Authors : Majid Bagherinia

Abstract : Lime and cement are frequently used as binders in the Deep Mixing Method (DMM) to improve soft clay soils. The most significant disadvantages of these materials are carbon dioxide emissions and the consumption of natural resources. In this study, three different biopolymers, guar gum, locust bean gum, and sodium alginate, were investigated for the improvement of soft clay using DMM. In the experimental study, the effects of the additive ratio and curing time on the Unconfined Compressive Strength (UCS) of stabilized specimens were investigated. According to the results, the UCS values of the specimens increased as the additive ratio and curing time increased. The most effective additive was sodium alginate, and the highest strength was obtained after 28 days.

Keywords : deep mixing method, soft clays, ground improvement, biopolymers, unconfined compressive strength

Conference Title : ICSMGE 2023 : International Conference on Soil Mechanics and Geotechnical Engineering

Conference Location : Berlin, Germany

Conference Dates : May 11-12, 2023