A Review on Biocementation Under Different Injection Mechanisms

Eric Buregeya Mbabazi[1], J. Logeshwari[2]

[1]PG Student, Civil Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu.
[2]Associate Professor, Civil Engineering, Vel Tech Rangarajan Dr. Sagunthala R&D Institute of Science and Technology, Chennai, Tamil Nadu.
buregeyame@gmail.com

ABSTRACT

In recent years, significant infrastructure development in cities has prompted engineers to improve the properties of soil to sustain the load transferred by those infrastructures. Mechanical compaction and chemical grouting are the two most used techniques. Their disadvantage include high cost, energy consumption and potential environmental pollution. Biocementation as a new emerging ground improvement technique has been investigated by numerous researchers, where cement or binding material are produced through microbial processes in situ. There is currently a body of literature on the various injection techniques used in biocementation, but a systematic review is lacking. As a result, this article examined the published literature on different injection mechanisms used in biocementation of soil, under different environmental conditions. The most used injection techniques were found to be surface percolation method, premixing method, continuous pumping, stopped flow and recirculating pumping. This article summarizes the collected literatures on injection mechanisms used in biocementation of soil and how these mechanisms affect the properties of biocemented soil.

Keywords: *Biocementation, Compaction, Injection, Percolation, Pumping.*