

Effect of Compaction Energy on the Compaction of Soils with Low Water Content in the Semi-arid Region of Chlef

Authors : Obeida Aiche, Mohamed Khiatine, Medjnoun Amal and Ramdane Bahar

Abstract : Soil compaction is one of the most challenging tasks in the construction of road embankments, railway platforms, and earth dams. Stability and durability are mainly related to the nature of the materials used and the type of soil in place. However, nature does not always offer the engineer materials with the right water content, especially in arid and semi-arid regions where obtaining the optimum Proctor water content requires the addition of considerable quantities of water. The current environmental context does not allow for the rational use of water, especially in arid and semi-arid regions, where it is preferable to preserve water resources for the benefit of the local population. Low water compaction can be an interesting approach as it promotes the reuse of earthworks materials in their dry or very dry state. Thanks to techniques in the field of soil compaction, such as vibratory compactors, which have made it possible to increase the compaction energy considerably, it is possible for some materials to obtain a satisfactory quality by compacting at low water contents or at least lower than the optimum determined by the Proctor test. This communication deals with the low water content compaction of soils in the semi-arid zone of the Chlef region in Algeria by increasing the compaction energy.

Keywords : compaction, soil, low water content, compaction energy

Conference Title : ICGE 2023 : International Conference on Geotechnical Engineering

Conference Location : Istanbul, Türkiye

Conference Dates : September 25-26, 2023