

Recovery of Local Materials in Pavements in Areas with an Arid Climate

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Abstract : The development of the regions of southern Algeria require the construction of numerous road, rail, and airport infrastructures. However, this development is very expensive given the very severe climatic conditions, the difficulty of reusing local materials, and the unavailability of water on the project sites; these regions are characterized by an arid or semi-arid climate, which means that water sources are very limited. The climatic conditions and the scarcity of water make soil compaction work very difficult and excessively expensive. These constraints related to the supply of water for irrigation of these construction sites make it necessary to examine the solution of compaction with low water content. This work studies the possibility of improving the compaction with a low water content of the soils of southern Algeria and this by using natural or recycled ecological materials. Local soils are first subjected to a series of laboratory characterization tests, then mixed with varying amounts of natural additives. The new materials are, in turn, subjected to road tests.

Keywords : compaction, low water content, sand, natural materials

Conference Title : ICGE 2023 : International Conference on Geotechnical Engineering

Conference Location : Istanbul, Türkiye

Conference Dates : September 25-26, 2023