

Behaviour of unsaturated tuff- calcareous sand mixture on drying- wetting and triaxial paths

Goual, Idriss; Goual, Mohamed Sayeh; Taibi, Said; Abou-Bekr, Nabil

Abstract :

The aim of the paper is to study the hydro-mechanical behaviour of a tuff and calcareous sand mixture. A first experimental phase was carried out in order to find the optimal mixture. This showed that the material composed of 80% tuff and 20% calcareous sand provides the maximum mechanical strength. The second experimental phase concerns the study of the drying- wetting behaviour of the optimal mixture. Triaxial shear tests in saturated and unsaturated states at constant water content were carried out on samples initially compacted at the MPO. Experimental results let to deduce the parameters necessary for the prediction of the hydro-mechanical behaviour of pavement formulated from tuff and calcareous sand mixtures, related to moisture. This optimal mixture satisfies the regulation rules and hence constitutes a good local eco-material, abundantly available, for the conception of pavements.

Keywords : tuff, sandy calcareous, road engineering, hydro mechanical behaviour, suction.

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