

Abstract

This work presents a laboratory study of the influence of low plastics fines content on the mechanical behaviour of river sand (Chlef sand). A series of direct shear tests was carried out on a sand-silt mixtures ranging from 0, 5, 10, 15 and 20%. The tests were carried out on loose sand samples (RD = 15%) and dense (RD = 85%), under a normal stress of 100, 200 and 300 kPa. The tests results show that the addition of silty fines has a considerable influence on the shear strength of the sand-silt mixtures; however this resistance increases with the increase in the percentage of the silty fines and the applied normal stress. The mobilized internal friction angle and the cohesion also increase significantly with the increase in the percentage of fines.

Key words: Sand, behaviour, shear, silty fines, mechanical characteristics.