

## **Abstract**

This work presents a laboratory study of the influence of fines clay content (kaolin) on the shear strength of a Chlef soil (Chlef sand). A series of direct shear tests carried out on a Chlef-clay sand (kaolin) mixtures ranging from 0, 5, 10, 15 and 20%. The tests were performed on loose (RD = 16%) and dense (RD = 90%) sand samples under a normal pressure of 100, 200 and 300 kPa. The test results show that the addition of clayey fines has a considerable influence on the shear strength of the sand-clay mixtures; however, this resistance decreases with the increase in the percentage of clayey fines for the three applied normal stresses. The mobilized internal friction angle decreases with the increase of the fines however the cohesion increases significantly with the increase of the percentage of fines.

**Key words:** Sand, shear, silt, clay, friction angle, cohesion.