

## **Abstract**

This work presents a laboratory study of the influence of the addition of rubber crumbs on the mechanical behavior of river sand (Chlef sand). A series of direct shear tests was carried out on a sand-powder mixtures varying from 0, 0.5, 1, 1.5 and 2%. The tests were carried out on loose sand samples (RD = 10%) and dense (RD = 80%), under a normal stress of 100, 200 and 300 kPa. The tests results show that the addition of rubber crumbs has a considerable influence on the shear strength of the sand-rubber, however, this resistance increases with the increase in the percentage of crumbs and the normal stress applied until a limited value of 1.5%. Beyond this limited value, there is a decrease in this resistance. The mobilized internal friction angle and the cohesion also increase significantly with the increase in the percentage of crumbs, this angle is more important for the high density than the loose density, for the cohesion it is found that this is more important for the loose case than the dense case.

**Keywords:** Soil, Shear, Test, Powder, Cohesion, Friction