

SUMMARY

The current research examines the factors that effect the residual resistance as a soil tribulation. It is mainly focused on the factors that are related to the friction mechanisms among the soil grains and the rate of the shearing.

The next unity is referred to the seismic displacements of the soil slopes. It mostly examines the effect of the residual resistance to the seismic displacements and to the analysis methods of the slopes stability that are related to the sliding block model of Newmark. The residual resistance is connected to the critical acceleration.

Into the frames of the experimental research, which has taken place to the Soil mechanisms and Foundations Laboratory, follows a presentation of the apparatus that were used, the shear box and the ring-shear box, which is extensively analyzed.

The experimental part of the labor concerns the study of the residual resistance that is observed to a soil sample from the area of Pafos(Cyprus). There was made an analysis of the residual resistance for several effective stresses and rates of shearing to the ring-shear box. Except that, there was a comparison between the values of the residual stress ratio and the results from the shear box, for both the initial and the remolded soil sample.

As a conclusion from the experimental research, it can be mentioned the diminution of the residual resistance when the effective stress is reduced. Another deduction is the negative effect that is caused from the rise of the velocity to the fast residual stress ratio. For the further laboratory research, it is recommended the examination of the above results, without the capability of having water supplement to the shear zone.