

The Effects of the Straw Fibres Ratio on the Mechanic Strength of Loam



Dr. Şükrü YETGİN, Ahmet ÇAVDAR

Karadeniz Technical University, Department of
Civil Enginnering, 29000 GÜMÜŞHANE, TURKEY

yetgins@hotmail.com

ABSTRACT

Objectives and Methods

In this study, five different types of loam soil are tested by adding four different contents of plant fibres (broken straw). The experiments are firstly established above determining compressive behaviors. The variations of compressive strength obtained from the experiments are shown in the strain-stress diagram. The test samples are prepared as cubic blocks in 10 cm dimensions. The results of compressive strengths and compressive stresses acquired from samples contain different ratios of fibres discussed in the light of mixing water ratio, unit mass, fibre ratio and shrinking ratio.

Conclusions

The results show that when fibre ratio increases, the shrinking ratio decreases, in the other hand, strain (unit length) ratio increases. Increasing unit length ratio also decreases the strength. Besides, the results of compressive and tensional experiments done with nonfibrous samples are added to these comparisons. Thus, a realistic boundary is tried to determine between carrier adobe-fibre mixture and filler light adobe.

KEY WORDS :

Fibre additive, Compressive strength, Loam type