

IMPROVEMENT IN CBR VALUES OF CLAYEY SOIL MIX WITH RHA AND CEMENT

Name of Student : Ajitesh Kumar Garg (1312115)

Deptt. : Geo.

Guide : J. N. Jha & K. S. Gill

Mode of Study : F. Time

ABSTRACT

Soil stabilization is gaining popularity among the geotechnical engineering researchers because of the low land to population ratio in our country. The present exploratory work depicts the utilization of locally available Rice Husk Ash as a soil stabilizer along with cement as the huge amount of RHA produced by local industry must be disposed off safely in order to have a minimum impact on the environment. Use of RHA for geotechnical purposes may prove to be a suitable technique for the pollution free disposal of RHA. In this work clayey soil (CI) with medium plasticity used was collected from a village Pamal near Mullanpur (Distt. Ludhiana) and the rice husk ash used was taken from KGR Agro Fusions PVT. LTD, Mullanpur Road, Hambran, Ludhiana (Pb). In this study an effort has been made to study the effect of RHA and cement on the engineering characteristics of clayey soil. To investigate the strength improvement of Soil: RHA: Cement mixtures in terms of Standard proctor test and California bearing ratio. From the compaction test results by adding RHA the MDD decreases and OMC increases. Tests were conducted on different test specimens with varying ratios of RHA and cement contents at their OMC. Locally available soil was mixed with 0%, 5%, 10% & 15% of RHA along with 0%, 6% & 8% cement. The different parameters were determined which showed significant improvement in the strength of stabilized soil. The Maximum value of C.B.R is at 8% cement and 10% RHA. On further increase in percentage of RHA the CBR value decreases. An empirical relation between C.B.R and U.C.S was used to determine U.C.S value. Then from C.B.R values elastic modulus of sub grade, sub base were calculated by method recommended by IRC 37. It was observed that CBR value is increased by 13.56% with the addition of 10% RHA in clayey soil. On further addition of 6% & 8% cement with 10% RHA content the CBR value is increased by 75.01% & 84.54% respectively as compared with virgin soil values.