

ENGINEERING BEHAVIOR OF SOIL REINFORCED WITH PLASTIC STRIPS

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ABSTRACT

Rapid improvements in the engineering world have influence a lifestyle of human beings in utmost extends but day to day activities of mankind are augmenting risk in the environment in the same proportion. Plastic wastes have become one of the major problems for the world. The harmful gas which is being produced by this agent leads to tremendous health related problems. So, effective engineering implementation of this has become one of the challenging jobs for engineers. Engineer are seeking for astute implementation of these wastes in ample amount and implementing these wastes in Soil stabilization helps to reduce the risk of natural destruction which is caused due to rainfall or other aspect and also it aid in reducing the waste in an ample amount. Plastic is considered as one of the major pollutant of environment as it would not decay or can't be destroyed so implementing this for some good purpose helps to reduce its effect also. This implies that stabilization using waste plastic strips is an economic method where use of waste materials as plastic and other cheaply available material of plastic can be used which is found accessibly. This paper reflects that plastic wastes can be used in stabilization of soil which is concluded from various tests conducted on fiber reinforced soil with varying fiber content and different aspect ratio and profound analysis of their results depicts that it can be used in the fields. Therefore, it is of utmost importance considering the design and construction methodology to maintain and improve the performance of such pavements. In this paper, different means of plastic waste as shopping bags and other plastic material which is locally available are used so as a reinforcement to perform the CBR studies while mixing with soil for improving engineering performance of sub grade soil. In this the Plastic strips which are collected for stabilization of soil were mixed randomly with the soil. With this a series of California Bearing Ratio (CBR) tests were carried out randomly reinforced soil in which the percentage of plastic strips with varying percentage of plastic strips with different lengths and proportions were carried on. And the results and conclusion were summed up which shows that use of plastic in soil in an appropriate amount really aids in improving the strength of soil and also helps in modification of soil properties which might be in term of strength of sub grade soil

KEYWORDS: Environment, Plastic Waste, Fiber Reinforcement, California Bearing Ratio (CBR), Strength of Sub Grade Soil