

(54) Title of the invention : STABILIZATION OF PROBLEMATIC SOILS USING REPURPOSED RAYON FABRIC COMPOSITE SYSTEM

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(71)Name of Applicant :
1)St. Martin's Engineering College
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----

Name of Applicant : NA
Address of Applicant : NA
(72)Name of Inventor :
1)V. Vamsi Kalyan, Assistant Professor, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
2)Gutam Anil Reddy, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
3)Gurrapu Vinay, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
4)Athelly. S. Sai Madhav, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
5)Ponnaganti Sai Kumar, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
6)Ramgiri Ramana, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
7)Nenavath. Rohith, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
8)S.Siddarth Shreyas, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
9)T.Vishnuvardhan, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
10)S.Saikrishna, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
11)P. Shiva Naik, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
12)B.Prem kumar, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
13)M.Naresh, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----
-
14)G. Dinesh, Student, CE
Address of Applicant :St.Martin's Engineering College, Dhulapally Kompally Secunderabad -----

(57) Abstract :

The main objective of this study is to investigate the use of waste fibre materials in geotechnical applications and to evaluate the effects of composite on shear strength of unsaturated soil by carrying out direct shear tests and unconfined compression tests on two different soil samples. The results obtained are compared for the two samples and inferences are drawn towards the usability and effectiveness of fibre reinforcement as an alternative to regular ground improvement techniques. Rising population and the reduction of available land, increases construction activity involving and other civil engineering structures, have to be carried out on soft soil. Owing to such soil of poor shear strength and high swelling and shrinkage, a great diversity of ground improvement techniques such as soil stabilization and reinforcement are employed to improve mechanical behaviour of soil, thereby enhancing the reliability of construction. All Soils do not possess required bearing capacity and which are undesirable. In this case, the soils need to be improved to make them suitable. The stabilization is done through synthetic fibre reinforcement. We need stabilization to make it suitable for any utility purpose. In this study synthetic cloths (rayon and woollen based) are used for strengthening of the soil. Stabilization using recycled synthetic clothes are cost effective and are re-purposing in order to improve soil properties. The results obtained are compared for different soil samples. To determine the properties of the reinforced materials, the fibres also undergo various Geo Synthetic laboratory tests. The effects of Soil Stabilization are determined using different properties such as direct shear test, durability test, unconfined compression test and compaction test.

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