Study of Long Term Performance of Pavements Reinforced with Coir Geotextiles

Weak foundation soils (subgrades) need improvement with respect to strength and stiffness in order to keep the life cycle cost of the roads at the minimum. Of the various techniques available, use of geosynthetics has proven to be the most cost effective and versatile technique for improvement of subgrades. Coir geotextiles, which are environment friendly, ecologically compatible, agro-based, of annually renewable nature and less costly, are a better choice compared to synthetic materials. Natural geotextiles are seldom used in actual practice in road works, may be due to absence of scientific literature on the long term performance of roads constructed with such materials. The aim of the project, sponsored by Coir Board, a statutory body established by the Government of India, with a total amount of Rs. 252.01 lakhs and project period of 3 years, is to study the performance of low volume roads constructed with coir geotextiles on weak soils through systematic documentation of the field observations carried over a long period with respect to various performance indicators. The study team includes Dr. M.V.L.R. Anjaneyulu and Dr. S.Chandrakaran.

Use of Coir Pith for Airport Soft Ground Arrestor System

Soft Ground Arrestor Systems (SGAS) are employed in Runway Safety Area (RSA) to decelerate or stop an overrunning aircraft and thus mitigate the disastrous accidents. The Federal Aviation Administration (FAA) recommends the use of Engineered Material Arresting System (EMAS) as one of the SGAS. The purpose of an EMAS is to stop an aircraft overrun with no human injury and minimal aircraft damage (usually none). An engineered materials arrestor system or engineered materials arresting system (EMAS) is a bed of lightweight, crushable concrete built at the end of a runway. A cementitious type material is used in the EMAS. The cost of EMAS, presently available only in developed countries, is around $4.5M for 4050 sqm bed.

Coir pith, which is very light in weight, is likely to be a very suitable material for development of EMAS. Use of Coir pith, an agriculture based material, available in plenty in Kerala, for such an application will eliminate the need of costly imports and provide better revenue for coconut growers. This will also be an environment friendly solution for management of coir pith, which is considered as a waste byproduct of coir industry.

The project, sponsored by Coir Board, Government of India with a total amount of Rs. 113.124 lakhs and duration of 3 years, aims at exploring the suitability of use of coir pith as one of the ingredients of soft ground arrestor system. The study team includes Dr. M.V.L.R. Anjaneyulu, Dr. A.P. Shashikala, Dr. S.Chandrakaran, Dr. K. Rangaswamy, Sri Sajith A. S & Sri KP Jose, AAI.