Experimental investigation on effect of coir Geotextiles on reduction of pavement distress in asphalt overlays

PROJECT INVESTIGATOR: DR. LOUI.T.R ,
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TRC 12 - CET RP 5

OBJECTIVES

The objectives of the study are,

- Conduct small scale lab experiments in order to determine the effect of coir geotextiles in the mitigation of pavements distress
- To locate the ideal position of geo textile in the overlay for mitigation permanent deformation by lab experimentation
- Study the variation in adherence characteristics of bituminous pavement section
- Modeling the behavior of geotextiles modified bituminous concrete pavement using ABAQUS
- Field implementation of coir geotextiles on road stretch and observe the performance

FIGURES AND TABLES

Field implementation of geotextiles

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Field implementation of geotextiles

BBD testing in the field

Stiffness testing using geo-guage

OUTCOME

1.Coir Geo textile effective in reducing rut depth up to 20 %.
2.Improve stiffness of pavement up to 15 %
3.Reduce crack propagation.
4.Reduce vertical strain and stress on pavement layer.
5.Better bonding developed between layer.
6.Improve pavement life.

M-TECH PROJECTS (2 No's)

1. "Experimental investigation on effect of coir geotextiles on creep characteristics of bituminous concrete"
2. Finite element analysis of effect of coir geotextiles on fatigue life of bituminous pavements

PUBLICATIONS (8 No's)

1. "Experimental investigation on effect of coir geotextiles on creep characteristics of bituminous concrete", NCTT, 2012
2. "Study on influence of coir geotextile and bitumen content on shear resistance of bituminous overlays", International journal of scientific & engineering research, 2013
3. "Finite element analysis of effect of coir geotextiles on fatigue life of bituminous pavements", International conference on modeling and simulation in civil engineering, 2013.
4. "Finite element analysis of coir geotextiles modified flexible pavement based on fatigue failure criterion", International journal of advance research in engineering and technology, 2014.
5. "Experimental investigation on effect of coir geotextile on rutting characteristics on asphalt overlays", Indian Highways, 2014.
6. "Study on Open Graded Friction Course Mixes with Surface Treated Coir Fibre and Natural Rubber Modified Bitumen", NCTT, 2014.
7. "Laboratory Evaluation On The Performance Of Modified Bitumen In Wearing Course", NCTT, 2014.
8. "Comparative study of the effect of treated coir fibre and natural modified bitumen on open graded friction course mixes", International journal of advanced research in Engineering & technology, 2015.