

Progress Report of R&D Projects

Project title: Development of Standards for Use of Jute Geotextiles (JGTs) in Rural Roads

Duration: 2 years

Project start date: 4th April, 2016

Principal Investigator: Dr. Mahuya Ghosh

Activities carried out so far as on 31st May, 2016

Administrative

1. Purchase of CAPEX items: Following CAPEX items have been already purchased.

- a. Liquid Limit Device,
- b. Light and heavy Proctor Compaction apparatus,
- c. Hydrometers with stirrer,
- d. Electric Oven,
- e. Electronic Balance (220 g capacity, Readability: 0.1 mg)

Purchase orders have been placed for the following equipment which are expected to reach IJIRA latest by 1st week of June:

- a) Cyclic loading apparatus with pneumatic actuator along with air drier and air compressor,
- b) Benkelman Beam,
- c) MERLIN apparatus,
- d) Portable skid tester
- e) Laboratory Vane shear apparatus.

2. Junior Research Assistant has been recruited. He has joined on 1st June, 2016.

R&D

1. Four types of soils have tested for following properties, viz.,

- i) Liquid Limit,
- ii) Plastic Limit,
- iii) Maximum Moisture Density,
- iv) Optimum Moisture Content
- v) California Bearing Ratio (unsoaked)

2. Fabric Engineering :

- i) Visited Gloster Ltd. and provided concept on preparation of leno- based jute woven grid on shuttle-less loom. Provided construction of the grid-fabric and yarn details (Count, Quality ratio, strength, etc.). The fabric will be manufactured soon.
- ii) Two types of blended jute fabric have prepared. Testing of fabric properties are currently underway.

3. Experimental plan has been chalked out as per discussion with the Project Advisor.

Work plan up to 31st August 2016

- 1. Preparation of Inception Report-Target date: 30th June 2016.
- 2. Procurement of different types of soils from different parts of India and their characterization (i.e. testing of soil properties) – Target date: 15th July 2016.
- 3. Procurement of remaining soil testing apparatus and raw materials for pavement model tanks –Target date: 20th July 2016.
- 4. Fabrication of fifty pavement (approx.) model tanks as per experimental plan –Target date: 31st August, 2016.
- 5. Preparation of control pavement models (without geotextile)-Target date: 25th July 2016.
- 6. Static and cyclic loading tests for control pavement models – Target date: 31st August 2016.
- 7. Further modification and testing of blended jute geotextiles –Target date: 14th August, 2016.