

**NIT No 20/NJB/JGT/PROJECY/Tender/2012-13 Date : 18/03/2013**

**Load and other Surficial Field Tests on the Newly Constructed Test Track at New Town, Rajarhat, Kolkata- 700 156 (CFC/IJSG/21 project)**

1. Sealed offersare invited from bonafideagencies having experience in executing load and surficial field tests on roadson the test track constructed at the plot of land owned by National Jute Board (NJB) in New Town, Rajarhat, Kolkata. The field tests are Benkelman Beam Test, measurement of rut depthand settlement or any other surficial distress, if observed after load tests.
2. The Test Track which has been designed for low volume traffic with CPVD lower than 150 measures 261 meters in length with a pavement width of 3.75 meters. It has five (5) distinct sections of almost equal length, viz. two (2) sections built on Jute Geo-textiles (JGT) of 20 kN/m and 25 kN/m tensile strength, one section on Synthetic Geo-textile of 40 kN/m of tensile strength, one section with the same pavement thickness as in the three preceding sections and lastly,one control section designed as per IRC:SP:72:2007. All the sections have been marked on the ground.

The task of the selected agency will be as under:

**Task No. 1**

To conduct load test, as per the protocol mentioned in the Annexure, to be performed on the entire stretch.

**Task No. 2**

To carry out Benkelman Beam Test at two points on each of the five (5) sections i.e. total 10 tests immediately after completion of load tests and measuring rut depth, settlement, if any after the load test.

**Task No. 3**

To repeat task no. 2 after 6 months and 12 months from the date of commencement of the first test.

**Task No. 4**

To submit periodic reports on the test results i.e. after completion of task no. 2 & 3.

The offer shall be all inclusive covering of Govt. taxes, duties, tariffs etc. as applicable and incidentals. All materials and instruments are to be taken to the site by and kept in the custody of the selected agency at its cost and responsibility.

The sealed offer addressed to the **Chief Consultant, National Jute Board, 75C Park Street, 6th floor, Kolkata 700 016 by 2 P.M. of 28th March, 2013 and will be opened at 4 P.M. on the same day** when the authorized representative of the participating agency may be present. Tenders received after the due date and time will not be considered.

Secretary, National Jute Board reserves the right to reject any or all offers without assigning any reason.

**Chief Consultant**

**National Jute Board**

**ANNEXURE**

**TEST PROTOCOL AT RAJARHAT, KOLKATA**

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| **ESAL** | The test track is designed within the ESAL range of 60000 – 100000.  Assuming an **ESAL of 80000** |
| **CVPD** | **150**  (Since for rural roads, CVPD must be less than 150) |
| **Vehicle damage factor (VDF)** | Impact of over-loaded medium-heavy commercial vehicle (MCV) having Rear Axle Load of 6 tonnes and Front Axle Load of 3 tonnes with an overload of 20% is considered.  According to IRC:SP:72-2007 (page 9), for overloaded MCV will give **VDF = 0.66** (0.62 for rear axle and 0.044 for front axle with 20% overload) |
| **Number of repetitions** | According to the formula of IRC:SP:72-2007 (page 10) :  Cumulative ESAL over 10 years = CVPD x Lane Distribution factor x Number of days in a year x VDF x  where,  Lane Distribution factor = 1 (for single lane)  g= Growth rate = 6%  From this formula, in 1 month number of repetitions of laden MCV in test track required is **4000 passes**. |
| **Time required for 1 complete run over test track of 261m stretch** | **2 min**  (assuming speed of MCV as 10km/hr) |
| **Time required for 150 passes a day over test track of 261m stretch** | **8 hrs** |
| **Duration of running of loaded vehicle** | **17 days** |