NATIONAL INSTITUTE OF TECHNOLOGY: TIRUCHIRAPPALLI –620 015.
DEPARTMENT OF CIVIL ENGINEERING

Date: 17.05.2014

Tender Notification No.: **NITT/CIVIL/KMK/MHRD-PROJ/EQ-01**, **dated 09.07.2014**

CORRIGENDUM

Name of Equipment	Technical Specification (original)	Technical Specification (Modified)
CYCLIC TRIAXIAL TEST SYSTEM	**CYCLIC TRIAXIAL TEST SYSTEM** **(Fully Computer Controlled Cyclic Triaxial Test Apparatus to Meets the essential requirements of ASTM-5311/3999)** **The system should include:-** 1 Load Frame with Actuator 2 Hydraulic Power Supply 3 Triaxial Cell 4 Pressure system 5 Transducers 6 Sample Accessories/Preparation kit 7 Bender Element Kit 8 PC based Control System and Application Software **1. LOAD FRAME** Load carrying capacity: 50kN Triaxial Cell accommodate: Up to 100mm diameter & 200mm height Horizontal clearance: 350mm Vertical clearance: 900mm Platen Diameter: 150mm or more Ram Speed: 0.00001-9.9999 mm/min. **2. Hydraulic Actuator** Type: Double Acting Capacity: +1000kg Stroke length: + 25mm Frequency range: 0.01Hz-10Hz Displacement transducer: 50mm	**CYCLIC TRIAXIAL TEST SYSTEM** **(Fully Computer Controlled Cyclic Triaxial Test Apparatus to Meets the essential requirements of ASTM-5311/3999)** **The system should include:-** 1. Load Frame with Actuator can be of any type (Servo Controlled hydraulic/ pneumatic/ Electro- Mechanical) 2. Triaxial Cell 3. Pressure system 4. Transducers 5. Sample Accessories/Preparation kit 6. Bender Element Kit 7. PC based Control System and Application Software **1. LOAD FRAME** Minimum safe working load of 10kN Triaxial Cell accommodate: Up to 100mm diameter & 200mm height Horizontal clearance: 350mm Vertical clearance: 900mm Platen Diameter: 150mm or more Ram Speed: 0.00001-9.9999 mm/min. **2. Actuator with suitable power source** Type: Double Acting Capacity: +1000kg Stroke length: + 25mm Frequency range: 0.01Hz-10Hz

Operating Pressure: 100kg/cm^2

3. HYDRAULIC POWER SUPPLY

Operating Pressure: 100 kg/cm^2
Capacity of the oil tank: 100 litres
Power rating of the motor: 7.5 HP
Heat Exchanger capacity: 4500 kcal/hr
System should be supplied with necessary cable and fittings for the operation of the machine.

4. TRIAXIAL CELL

It should able to do Static & Dynamic (Compression/Extension or both)
Confining Pressure: Up to 10 kg/cm^2
Specimen Size: Up to 100mm diameter & 200mm height
Submersible Load cell: 500kg

5. DIGITALLY CONTROLLED PRESSURE SYSTEM

Confining Pressure: Up to 10kg/cm^2
Back Pressure: Up to 10kg/cm^2
Volume change: 200cc
De-airing chamber: 15litres
Compressor: 10kg/cm^2
Vacuum Pump: Creates vacuum of 70cm mercury

6. TRANSDUCERS

Submersible Load Cell - /+500kg (0.1kg)
Displacement Transducer - /+ 25mm (0.01mm) & 20mm(0.001mm)
Confining Pressure Transducer- 20kg/cm^2 (0.01 kg/cm^2)
Pore Pressure Transducer- 20kg/cm^2 (0.01 kg/cm^2)
Back Pressure Transducer- 20kg/cm^2 (0.01 kg/cm^2)
Volume Change Transducer- 200cc (0.1cc)

7. SAMPLE PREPARATION ACCESSORIES

For 38, 50, 75 and 100mm diameter samples, the

Displacement transducer: 50mm

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Volume Change Transducer- 200cc (0.1cc)

6. SAMPLE PREPARATION ACCESSORIES

For 38, 50, 75 and 100mm diameter samples, the following sample preparation accessories should be supplied.
1. Top Cap and bottom pedestal - 1No.each
2. Rubber Membrane - 40Nos (10 No.s for each

	following sample preparation accessories should be supplied. 1. Top Cap and bottom pedestal - 1No.each 2. Rubber Membrane - 40Nos (10 No.s for each size) 3. Suction sleeve stretcher - 1No.each 4. Two part split mould with Vacuum arrangement - 1No.each 5. Rubber O-rings - 10Nos each 6. Porous disc - 2Nos each **8. Bender Element Kit** Pedestal and Top-cap set with all essential accessories for testing samples of 50mm, 70mm and 100mm sizes in 100mm Triaxial Cell. Vertically propagating bender element Combined S-wave transmitter / P-wave receiver bender element insert for top cap and P-wave transmitter /S-wave receiver Bender element insert for Triaxial base pedestal, comprising cylindrical Titanium insert with encapsulated element with flying leads for connection to data interface/signal generator/signal conditioning. Master signal conditioning unit for use with 1 pair of bender elements. Amplification of source and received signals (P and S-wave) with user controlled hardware gain levels from x 10 to x500 via user controlled hardware gain levels from x 10 to x 500 via Digital Storage Oscilloscope with software for monitoring and storage. Software also control data acquisition and driving signal generation for P-wave and S-wave velocity tests with following functions: Generation of single or repeated sinusoid, square or user defined waveforms, control of sampling rate and data handling, data display and analysis. **9. PC BASED CONTROL SYSTEM AND**	size) 3. Suction sleeve stretcher - 1No.each 4. Two part split mould with Vacuum arrangement - 1No.each 5. Rubber O-rings - 10Nos each 6. Porous disc - 2Nos each **7. Bender Element Kit** Pedestal and Top-cap set with all essential accessories for testing samples of 50mm, 70mm and 100mm sizes in 100mm Triaxial Cell. Vertically propagating bender element Combined S-wave transmitter / P-wave receiver bender element insert for top cap and P-wave transmitter /S-wave receiver Bender element insert for Triaxial base pedestal, comprising cylindrical Titanium insert with encapsulated element with flying leads for connection to data interface/signal generator/signal conditioning. Master signal conditioning unit for use with 1 pair of bender elements. Amplification of source and received signals (P and S-wave) with user controlled hardware gain levels from x 10 to x500 via user controlled hardware gain levels from x 10 to x 500 via Digital Storage Oscilloscope with software for monitoring and storage. Software also control data acquisition and driving signal generation for P-wave and S-wave velocity tests with following functions: Generation of single or repeated sinusoid, square or user defined waveforms, control of sampling rate and data handling, data display and analysis. **8. PC BASED CONTROL SYSTEM AND APPLICATION SOFTWARE** **Computer and Data acquisition system** System should be provided with dedicated computer with built in data acquisition card and

	APPLICATION SOFTWARE **Computer and Data acquisition system** System should be provided with dedicated computer with built in data acquisition card and wave generator. **Analysis Software for Dynamic Test (As per ASTM3999 & ASTM5311)** **Analysis Software for Static Triaxial Test**	wave generator. **Analysis Software for Dynamic Test (As per ASTM3999 & ASTM5311)** **Analysis Software for Static Triaxial Test** **NOTE: Performance curve should be given for the quoted system along with technical bid.**