

## INVITATION FOR QUOTATION

TEQIP-II/2017/ntst/Shopping/9

03-Nov-2017

To,

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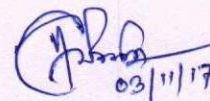
**Sub: Invitation for Quotations for supply of Tri-axial Testing Machine**

Dear Sir,

1. You are invited to submit your most competitive quotation for the following goods with item wise detailed specifications given at Annexure I,

Sr. No	Brief Description	Quantity	Delivery Period(In days)	Place of Delivery	Installation Requirement (if any)
1	Tri-axial testing machine	1	30	NIT Sikkim	Yes

2. Government of India has received a credit from the International Development Association (IDA) towards the cost of the **Technical Education Quality Improvement Programme[TEQIP]-Phase II** Project and intends to apply part of the proceeds of this credit to eligible payments under the contract for which this invitation for quotations is issued.
3. Quotation,
  - 3.1 The contract shall be for the full quantity as described above.
  - 3.2 Corrections, if any, shall be made by crossing out, initialing, dating and re writing.

  
03/11/17



3.3 All duties and other levies payable by the supplier under the contract shall be included in the unit price.

3.4 Applicable taxes shall be quoted separately for all items.

3.5 The prices quoted by the bidder shall be fixed for the duration of the contract and shall not be subject to adjustment on any account.

3.6 The Prices should be quoted in Indian Rupees only.

4. Each bidder shall submit only one quotation.

5. Quotation shall remain valid for a period not less than **45** days after the last date of quotation submission.

6. Evaluation of Quotations,

The Purchaser will evaluate and compare the quotations determined to be substantially responsive i.e. which

6.1 are properly signed ; and

6.2 confirm to the terms and conditions, and specifications.

7. The Quotations would be evaluated for all items together.

8. Award of contract:

The Purchaser will award the contract to the bidder whose quotation has been determined to be substantially responsive and who has offered the lowest evaluated quotation price.

8.1 Notwithstanding the above, the Purchaser reserves the right to accept or reject any quotations and to cancel the bidding process and reject all quotations at any time prior to the award of contract.

8.2 The bidder whose bid is accepted will be notified of the award of contract by the Purchaser prior to expiration of the quotation validity period. The terms of the accepted offer shall be incorporated in the purchase order.

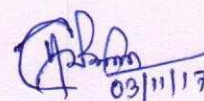
9. Payment shall be made in Indian Rupees as follows:

**Delivery and Installation - 90% of total cost**

**Satisfactory Acceptance - 10% of total cost**



10. All supplied items are under warranty of **12** months from the date of successful acceptance of items.
11. You are requested to provide your offer latest by **16:00** hours on **02-Dec-2017** .
12. Detailed specifications of the items are at Annexure I.
13. Training Clause (if any)
14. Testing/Installation Clause (if any) **Installation required**
15. Information brochures/ Product catalogue, if any must be accompanied with the quotation clearly indicating the model quoted for.
16. Sealed quotation to be submitted/ delivered at the address mentioned below,  
Dr. Achintesh Narayan Biswas  
Nodal Officer (Procurement), TEQUIP-III  
National Institute of Technology Sikkim  
Barfung Block, Ravangla,  
South Sikkim-737139.
17. We look forward to receiving your quotation and thank you for your interest in this project.



Dr. Achintesh Narayan Biswas  
Nodal Officer (Procurement), TEQUIP-III, NIT Sikkim



## Annexure I

Sr. No	Item Name	Specifications
1	Tri-axial Testing Machine	<p><b>Tri-axial Testing Machine: Comprising of the following :-</b></p> <p><b>Digital Load Frame</b> It is an Advanced version of mechanical load frames. In this load frame rate of strain is controlled through combination of electronic and server motor. The unit operates on 220 Volts 50Hz single Phase supply.</p> <p><b>Specification:</b> Capacity of the load frame - 50kN Vertical Clearance - 325mm Horizontal Clearance - 325 mm Platen Diameter - 150mm Platen speed - 0.0001-9.9999mm/min Weight - 110kg App.</p> <p><b>Universal Triaxial Cell</b> Pressure Range - 1000 Kpa Suitable for performing triaxial tests on soil specimen of varying diameter from 38mm to 100mm with lateral pressure upto 10.5kg/cm<sup>2</sup>. The cell has four take off positions and is fitted with three no volume change valves. Supplied Complete with one set of following accessories for each of 38mm, 50mm, 75mm and 100mm dia specimens.</p> <p><b>Pneumatic Control Panel ,2 lines</b> The unit have precision pressure regulators for controlling confining pressure, back pressure Capacity : 10.5kg/sq cm, Complete with Mechanical Volume Change apparatus</p> <p><b>AIR COMPRESSORS, 10kg/sq.cm.</b> It is a single stage compressor fitted over an air receiver, ON-OFF switch, Pressure gauge &amp; pressure outlet valve are provided as standard. Suitable for operation on 220 volt 50 Hz, single phase supply.</p> <p><b>De-airing Chamber with vacuum Pump</b> It has a vacuum regulator, 20ltr, water chamber and additional lines for vacuum mm and vacuum Gauge.</p> <p><b>Electronic Data Acquisition</b> The four Channel micro controller base signal conditioning &amp; touch panel display unit is suitable to measure Axial Load, pore /back pressure, vertical displacement &amp; volume change (optional) directly indicated in their respective engineering units</p>



during Triaxial testing. The system receives the output signal from the sensor i.e Load cell, pore/back pressure sensor attached to the Triaxial Shear Test apparatus. The data of all four channels of Triaxial shear test can be transferred to computer through Ethernet & can be online monitored. The unit also provides the facility of online monitoring of data of all the sensor on Touch Panel Display provided at the front. Broadly the following facilities are incorporated in the system:

- Touch Panel is provided to perform various operations such as TARE,PROGRAMMING,START,STOP etc
- Independent Taring of each channel
- Data transfer interval is programmable (between 10 second to 1 hour)
- Automatic data saving on stop bottom there are 25 set result having maximum of 200 data points per set can be stored in the electronic unit. The sample number can be programmed.
- Online data & time of test will be stored along with the data.
- Online (while the test is in progress) data transfer to the computer through Ethernet port.

Note - The Electronic unit operates on 220V AC+ 10%,50Hz

Sensor Specification:

#### **Load Cell**

Capacity :1000kg

Type : S -Shaped

Excitation Voltage : 10VDC

Nominal output : 3.0m V/V

Non-Linearity : <+0.025% FSO

- Hysteresis: <+0.02%FSO
- Non Repeatability :<-0.01% FSO
- Creep (30 minutes) : <+0.03% FSO
- Zero Balance : 1.0% FSO
- Input resistance : 392 + 15 Ohms
- Output Resistance : 350 + 3 Ohms
- Insulation Resistance :> 1000 M Ohms
- Safe Over Load : 150% of rate capacity
- Ultimate Over load : 250% of rated capacity
- Temp. Range : 0degree to 60 degree cc
- Temp. Effect on output : <1.0015% FSO/Degree cc
- Temp. Effect on zero : <0.0020% FSC /degree

#### **PRESSURE TRANSDUCER**

- Capacity : 2000Kpa
- Excitation Voltage : 12VDC
- Nominal Output : 4-20mA
- Over Pressure Limit : 2 times F.S



- Burst Pressure : 3 times F.S
- Max. Loop Resistance :  $< (U_B - 12V) / 0.02A$
- Isolation Resistance :  $> 100M\Omega$  at 50VDC
- Isolation Voltage : 250VAC
- Supply Current : 20mA for 4-20mA output
- Operating Temp. Range: -40degree c to 50degree c

**LINEAR VARIABLE DIFFERENTIAL TRANSFORMER (LVDT)**

- Stroke :  $\pm 20mm$
- Linearity Deviation  $\approx 1\%$  of rated capacity
- Repeatability :  $\pm 0.1\%$  of rated capacity
- Hysteresis :  $\pm 0.5\%$  of rated capacity
- Excitation : 2- volt rms 2 KHz sinusoidal
- Sensitivity : 1m V/V/mm
- Safe Temperature Range: 0 degree-50 degree cc
- Core Fixture : Spring Loaded Plunger

**Software Specification:**

- Data acquisition from signal conditioning unit to computer
- Off line Tri-axial data analysis Software that does all the calculations of UC,UU,CU,CU Bar & CD Tri-axial test
- has option for manual as well as automatic recording of data
- Calculates Dry Density, Moisture Content, Void Ratio, Degree of Saturation, 100% Saturation Moisture Content etc.
- Display the following Plots (Graphical)
  - (a) Consolidation Curve
  - (b) Stress -Strain Curve for every test
  - (c) Axial Strain vs Pore Pressure
  - (d) Effective Stress Ratio vs Axial strain
  - (e) A- parameter vs Axial strain
  - (f) p-q plot and gives the value of c and f in terms of effective Ratio
  - (g) Calculate the following:
    1. Evaluates  $t_{100}$
    2. Strain rate depending upon the drainage condition for CD and CU test.



# **FORMAT FOR QUOTATION SUBMISSION**

(In letterhead of the supplier with seal)

Date: \_\_\_\_\_

To:

\_\_\_\_\_

\_\_\_\_\_

Sl. No.	Description of goods (with full Specifications)	Qty.	Unit	Quoted Unit rate in Rs. (Including Ex Factory price, excise duty, packing and forwarding, transportation, insurance, other local costs incidental to delivery and warranty/ guaranty commitments)	Total Price (A)	Sales tax and other taxes payable	
						In %	In figures (B)
<b>Total Cost</b>							

Gross Total Cost (A+B): Rs. \_\_\_\_\_

We agree to supply the above goods in accordance with the technical specifications for a total contract price of Rs. \_\_\_\_\_ (Amount in figures) (Rupees) \_\_\_\_\_ amount in words) within the period specified in the Invitation for Quotations.



We confirm that the normal commercial warranty/ guarantee of ----- months shall apply to the offered items and we also confirm to agree with terms and conditions as mentioned in the Invitation Letter.

We hereby certify that we have taken steps to ensure that no person acting for us or on our behalf will engage in bribery.

Signature of Supplier

Name: \_\_\_\_\_

Address: \_\_\_\_\_

Contact No: \_\_\_\_\_