



**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA-769008 (ODISHA)**

An Institute of National Importance under Ministry of Education, GOI

**NOTICE INVITING TENDER**

**Tender Notification No: NITR/PW/CE/2020/223      Dated: 31/12/2020**

The National Institute of Technology, Rourkela invites bids from the eligible bidders for procurement of **Cyclic Triaxial System with all Accessories** at NIT Rourkela.

Last date of Submission of Bid : **21/01/2021 by 11:00 AM**

Opening date of techno-commercial Bid : **22/01/2021 at 11:00 AM**

**For Details:**

[https://nitrkl.ac.in/OldWebsite/Jobs\\_Tenders/9Equipment/Default.aspx](https://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx)

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**Bidding through:** <https://eprocure.gov.in/eprocure/app>

**Sd/-  
REGISTRAR**



**NATIONAL INSTITUTE OF TECHNOLOGY  
ROURKELA-769008, ODISHA**

(OPEN TENDER NOTICE NO.: NITR/PW/CE/2020/223

Dated: 31/12/2020)

**Procurement of Cyclic Triaxial System with all Accessories at NIT Rourkela**

SL.NO	Description of Goods/Service	Quantity
1.	<b>Cyclic Triaxial System with all Accessories</b> (As per the specification mentioned in Annexure-II)	<b>1 unit</b>

- Quantity required : **As mentioned above (All information regarding technical specification provided in the Annexure-II)**
- Delivery : Within **60 days** from the date of purchase order
- Last Date of submission of Bid : 21/01/2021 by 11:00 AM**
- Date of opening of techno-commercial bid : 22/01/2021 at 11:00 AM**
- The firm should not have been black listed at any time.
- The submission of following bids by the tenderer should be through <https://eprocure.gov.in/eprocure/app>. Please follow the guidelines as per the portal.

**Procurement of Cyclic Triaxial System with all Accessories**  
**(Open Tender Notice No.: NITR/PW/CE/2020/223 Dated: 31/12/2020)**  
**Due on 21/01/2021 by 11:00 AM**

- Liquidated damage clause** will be charged for any delay in supply of goods.
- The validity of the tender shall be **90 days** from the date of opening of the bids.
- Detailed advertisement including all tender documents is also available in our website at [https://nitrkl.ac.in/OldWebsite/Jobs\\_Tenders/9Equipment/Default.aspx](https://nitrkl.ac.in/OldWebsite/Jobs_Tenders/9Equipment/Default.aspx)
- NIT reserves the right to qualify or deny prequalification of any or all applicants without assigning any reasons.

**(REGISTRAR)**  
**NIT, Rourkela**  
**Fax No- 0661-2462022**  
**Ph. No -0661-2462021**

**DETAILED TECHNICAL SPECIFICATION**

**Specifications for Cyclic Triaxial System with all accessories:**

Sealed tender bids are invited from reputed/authorized vendors/companies for Cyclic Triaxial System with all accessories with following tender specifications.

**1. Load Frame**

Load carrying capacity: 50 kN; Triaxial Cell accommodate: Up to 100 mm diameter & 200 mm height; Horizontal clearance: 350 mm; Vertical clearance: 900 mm; Platen Diameter: 150 mm or more; Ram Speed: 0.00001-9.9999 mm/min.

**2. Hydraulic Actuator**

Type: Double Acting; Capacity:  $\pm 1000$  kg; Stroke length:  $\pm 25$  mm; Frequency range: 0.01Hz-10Hz; Displacement transducer: 50 mm; Operating Pressure:  $100 \text{ kg/cm}^2$ ; Servo Valve 2 stage: 20 LPM; Accumulators: Gas filled capacity 0.16 liter

**3. Hydraulic Power Supply**

Flow of the pump: 15 LPM; Operating Pressure:  $100 \text{ kg/cm}^2$ ; Type of Pump: Vane; Capacity of the oil tank: 100 liter; Power rating of the motor: 7.5 HP; Heat Exchanger capacity: 4500 kcal/hr.

**4. Triaxial Cell**

Tests Possible: Static & Dynamic (Compression/Extension or both); Confining Pressure: Up to  $10 \text{ kg/cm}^2$ ; Specimen Size: Up to 100 mm diameter & 200 mm height; Submersible Load cell: 500 kg; Load cell capacity: 10 kN

**5. Digitally Controlled Pressure System**

Confining Pressure: Up to  $10 \text{ kg/cm}^2$ ; Back Pressure: Up to  $10 \text{ kg/cm}^2$ ; Volume change: 200 cc; De-airing chamber: 15 liter; Compressor:  $10 \text{ kg/cm}^2$ ; Vacuum Pump: Creates vacuum of 70 cm mercury

**6. Transducers**

Submersible Load Cell:  $\pm 500$  kg (0.1 kg); Displacement Transducer:  $\pm 25$  mm (0.01 mm) & 20 mm (0.001 mm); Confining Pressure Transducer:  $20 \text{ kg/cm}^2$ ; ( $0.01 \text{ kg/cm}^2$ ); Pore Pressure Transducer:  $20 \text{ kg/cm}^2$  ( $0.01 \text{ kg/cm}^2$ ); Back Pressure Transducer:  $20 \text{ kg/cm}^2$  ( $0.01 \text{ kg/cm}^2$ ); Volume Change Transducer: 200 cc (0.1 cc)

**7. Sample Preparation Accessories**

For 38, 50, 75 and 100 mm diameter samples following sample preparation accessories shall be supplied:

Top Cap and bottom pedestal: 1 No. each; Rubber Membrane: 40 Nos. (10 Nos. for each size); Suction sleeve stretcher: 1 No. each; Two part split mould with Vacuum arrangement: 1 No. each; Rubber O-rings: 10 Nos. each; Porous disc: 2 Nos. each

**8. PC based Control System and Application Software**

Computer: Intel Core i5, 500GB HDD, 4GB DDR RAM, 4USB ports, Keyboard, Mouse, 19" LCD monitor, UPS 500VA along with Deskjet Color printer  
Data Acquisition Card; Control software; Analysis Software for Dynamic Test (As per ASTM 3999 & ASTM 5311); Analysis Software for Static Triaxial Test

**9. Bender Element**

It comprises of (a) Triaxial Cell with bender element for sample size 50 mm diameter, (b) Dual channel digital oscilloscope, (c) Function Generator and (d) Amplifier for the wave form.

<b>Other Requirements</b>	
<b>Demonstration of instrument performance.</b>	The supplier should demonstrate all possible tests that can be done by the equipment at the time of installation with satisfactory results.
<b>Manuals</b>	1 set of detailed operation, servicing and other manuals should be provided in both soft form as well as Hard copy. Language should be English only.
<b>Installation</b>	The satisfactory installation to the full specifications of the machine with all accessories at NIT Rourkela campus. Any additional equipment/accessory for the installation of the system should be quoted invariably. NIT Rourkela will provide only space and electrical connection for running the equipment. If some civil work is required, then it should be informed earlier.
<b>Training</b>	Supplier should provide a comprehensive and free training to NIT Rourkela personnel for at least 3 working days.
<b>Warranty</b>	01 Year Standard Warranty (Front line service to be done at customer place & if any cards/modules are to be replaced can be taken to service center & back to bench service charges to be borne by Bidder). The Original End Manufacturer (OEM) should have Calibration and other maintenance support facility located in India.

<b>Guarantee / Warranty and after sales technical support</b>
The tender must be quoted with one year on-site comprehensive Warranty/Guarantee commencing from the date of complete and satisfactory installation of the equipment against the defect of any manufacturing, workmanship and poor quality of the components. The bidder also must agree and issue a certificate stating that technical query will be responded within 7 working days and the support will be provided within 21 working days from the date of reporting of the technical failure for down time free operation of the instrument.
Operation and service manual in English (electronic and hard copy) should be provided with all the equipment and components.
In the technical details, specify clearly about the kind of service/maintenance required for the system. Also mention that whether the service has to be carried out by a company engineer or it can be carried by trained service personnel within India.
The complete training of all measurement options should be free for NIT Rourkela user staff/students members, onsite.
Enclose pre-installation guide for the details on electrical power, space and other for all components and essential accessories.
A list of institutes (with details) in India where the similar equipment & model (with all options in this tender) has been sold or is under operation should be provided. Prospective vendor should clearly mention the type of measurement options (along with the main system) supplied to these institutes.
The manufacturer has to stand guarantee for the relocation of the system from the present campus of NIT Rourkela to any other place if any in future.