# NOTICE INVITING QUOTATION (NIQ)

**Date: 27-02-2009**

Sealed quotations on company letterhead are invited from reputed manufactures from India or their authorized suppliers / dealers and service agents in India for the supply of the equipment mentioned in this document.

The quotation must provide detailed information of the configuration and specifications of the items as well as price (**in Indian rupees only**) and terms and conditions of the payment. **The quotation should mention individual unit cost of each of the components as well as total cost of delivery, installation and commissioning as well as full demonstration at IIT Delhi site**. The Cost should be CIF New Delhi. **Comprehensive warranty of three years is required.**

The quotation should be submitted on of before 20th March, 2009 by 10:00 am in the office of **Head, Department of Civil Engineering, Room No. 221, Block No. IV, Indian Institute of Technology Delhi, Hauz Khas, New Delhi- 110016 (INDIA)**. The validity of the submitted quotation must extend up to at least three months.

**Interested parties are required to submit their technical and financial bids in separately sealed envelopes and marked respectively as "Technical Bid"** and **"Financial Bid" on the outside**. The two envelopes should be enclosed inside a single large envelops and marked, **"ATTN: Dr. Supratic Gupta, Sealed Quotation for "250 kN Servo Hydraulic Testing Machine" To be opened by Purchase Committee".**

**The Bidder is required to provide bid security through a bank guarantee of Rs. 85,000/- valid until 30 June 2009 in the technical bid.**

The Institute reserves the right to accept/reject any/all the offers without assigning any reason whatsoever.

| S. No. | Item Name and Specifications | Quantity |
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| 1. | **250 kN Servo Hydraulic Testing Machine**<br>Floor standing Load Frame System shall be capable of carrying out below mentioned tests at room temperature as per internationally accepted ASTM standards for Tension, Compression, Bend, Fatigue tests on civil engineering materials and components.<br><br>The load frame should be complete with:<br>- T-Slotted Bed Plate of approx 2000 mm x 1000 mm size<br>- T-Slotted Bed Plate should be with proper support beams at a working height of approx 1 meter<br>- Approx dimensions of the load frame are: Column Clearance: 600 mm, Maximum day light: 1500 mm, Minimum day light: 300 mm, Column diameter: ~90 mm.<br>- Fatigue rated Crosshead Mounted Actuator of +/- 250 kN capacity, double ended double acting, 150 mm stroke length with built-in LVDT, Servovalve Manifold with hydraulic On/Lo/Off feature, Servovalve of about 60 lpm flow capacity, Accumulators, etc.<br>- Dynamic Load Cell rated for +/- 250 kN Capacity with factory calibration<br>- Movable crosshead with hydraulic lifts and locks with proper control buttons on a convenient location on the load frame.<br>- 5 meter hoses from the hydraulic line to the actuator<br>- Load frame shall be weather resistant preferably with chrome plated load columns.<br>- Emergency stop provided on load frame to release the pressure in case of any emergency.<br>- The cables connecting the load frame, load cell, extensometer etc. to the control console | 01 number |

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| | should be at least 5 meter long for easy handling.<br>- Optionally the supplier should offer additional grips and fixtures to conduct:<br>(a) Hydraulic side loading wedge grips with Vee Wedge Sets having serrated faces for gripping smooth round samples from 3 mm to 22 mm diameter. Flat wedges to be offered optionally. Grips pressure should be adjustable through a manifold with control switches/valves for grip opening/closing controls.<br>(b) Compression Platens 150 mm dia<br>(c) 3 Point Bend tests over 600mm span<br>(d) Extensometers<br><br>Digital Controller, for Single Channel Operation of the Load Frame System:<br>- The controller should operate with 230 +/-10 V, 50 Hz power supply.<br>- Should be complete with machine control and data acquisition system<br>- Should be designed to interface with a PC through latest version of USB communication for primary control, feedback control , pump control etc<br>- A digital servo-loop update of at-least 5 kHz or more to ensure high performance and response fidelity.<br>- The required signal conditioners for control/readout of load, stroke & strain transducers should be of 24 bit or more. 16-bit data acquisition and a digital 32 bit waveform synthesizer with sine, triangular and pulse waveforms from 0.001 to 200 Hz are required.<br>- The application software for real-time control of the test system should be provided with a set of user-friendly panels for console operations, calibration, data acquisition, safety limit interlocks and servo-tuning. Provision to change the control mode depending on the application (example: stroke mode, load mode, strain mode)<br>- The software should allow to share the data globally in Microsoft office utilities (like excel etc.) enabling users to develop their own application without impeding performance nor affecting existing software programs.<br>- The computer for controlling the system should be of **ISO Certified manufacturer** ( copies of the certificates to be provided at the time of supply) make with latest configuration with minimum Intel Pentium IV processor (3 GHz or more) compatible with application hardware and software of the equipment with 1.0 GB RAM or better, TFT Monitor 19" or more, DVD writer, network adapter card, at least 2 USB ports, keyboard and optical mouse. All softwares should be licensed and original. All application softwares should run under Microsoft windows XP / Vista environment. Latest licensed antivirus software with one year validity or more shall be provided.<br>- Software should be capable of conducting tensile and compression test to the latest issues of specifications of ASTM E8 & E9 to determine the following test parameters: Upper yield stress & lower yield stress; 0.2% Proof stress (off set); Ultimate tensile strength; % Elongation; % Reduction in area of cross section; Graphical representation of stress Vs strain & load Vs displacement curve on screen in real time with a provision for retrieval. Should have provision for conducting the tests in load control, stress control, strain control and at constant true strain rate incase the system is ordered with proper accessories.<br>- Documentation related to guarantee/ warranty of sub components from various manufacturers to be provided in the name of IITD.<br><br>This load frame system will be connected to the Hydraulic Power Supply System as mentioned below. Hence necessary provision should be incorporated in the hydraulic power supply to have required tap-off point for connecting this load frame to the hydraulic line. | |

**NOTES:**

**(1) All Documents & manuals should be in English**

**(2) Each of the essential specification needs to be responded either in range or any applicable answer. Bidder should also provide the time frame of delivery. Failure to respond to any essential specification can lead to disqualification.**

**(3) Technical bid not accompanied by bank guarantee will be disqualified.**

(4) **Applicable taxes should be clearly specified.**

(5) **Vendor should provide reference of supply of equipment within India or outside of similar equipment. Any negative comments from any one referred would disqualify the bid. IITD reserves the right to interact/visit with the referred customer as per its convenience.**

(6) **Installation, Commissioning and terms of conditions**: The quoted cost should be in Indian Rupees including taxes and freight to IIT Delhi. Cost should include design of installation (IITD will bear the material cost for installation), deputation of competent engineers for installation (Labor cost will be born by IITD only) and systems required for smooth running of the equipment should be specified in pre-installation requirements like chillers, motors etc., along with their detailed technical specifications. Also specify requirement of electric power and water etc. All these items should be provided within 1 month of order placement so that IITD can prepare the installation requirements well in time. Vendor is required to supply, install and text the equipments within 6 months of the order.

The supplier should demonstrate the performance of the equipment to the specifications by conducting trial tests. Complete set of manuals for operation, maintenance and safety along with circuit/block diagrams should be provided.