

Tender
for
Supply & Installation of
**Test Machine for Fracture Testing, Fatigue Crack Propagation,
Low Cycle Fatigue, Tension and Compression**
at
Indian Institute of Technology Jodhpur

NIT No. : IITJ/SPS/ME/1/1(I)/2016-17/6
NIT Issue Date : 27 April 2016
Pre-bid Meeting : 28 May 2016 at 03:00 PM
Last Date of Submission : 13 June 2016 by 03:00 PM



॥ त्वं ज्ञानमयो विज्ञानमयोऽसि ॥

Indian Institute of Technology Jodhpur
Old Residency Road, Ratanada, Jodhpur – 342011, Rajasthan
Telefax: 0291- 2449011, email: sps@iitj.ac.in

Notice Inviting Tender

Indian Institute of Technology (IIT), Jodhpur, Rajasthan (hereinafter referred to as the “Institute”), an Educational Institute of National Importance, invites sealed tender(s) in two-bid format for “Supply and Installation of Test Machine for Fracture Testing, Fatigue Crack Propagation, Low Cycle Fatigue, Tension and Compression” at the Institute as per the specification given in the schedule attached with the tender as Annexure – I (page nos. 13 to 16). The tender document can be downloaded from the Institute website at URL Link: <http://www.iitj.ac.in> or from Central Public Procurement Portal link: <http://www.eprocure.gov.in>.

The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of Rs.80,000/- (Rupees Eighty Thousand only) which is refundable and a non-refundable tender fee for an amount of Rs.1,000/- (Rupees One Thousand only) by way of demand drafts only. The demand drafts shall be drawn in favour of “Director, IIT Jodhpur” payable at Jodhpur. The demand drafts for earnest money deposit & tender fee must be enclosed in the envelope containing the technical bid.

Offer in the financial bid should be written in English and price should be written in both figures and words. The offer should be typed or written in ink pen or ball pen. Use of pencil will be ignored. All the pages of the Technical / Financial Bid shall be page numbered and all the relevant supporting documents as required must be enclosed.

Envelope of technical bid & financial bid should be individually sealed and then placed in a third envelope, to be sealed and superscribed with tender number, due date of submission and address to:

“Officer-in-charge
Stores & Purchase Section
Indian Institute of Technology Jodhpur
Old Residency Road, Ratanada
Jodhpur – 342011, Rajasthan”

Sealed tender should reach the Institute, latest by June 13, 2016 by 03:00 PM. Tender(s) received beyond the last date of submission will be rejected. No tender will be entertained by E-mail or FAX.

Pre-bid meeting is scheduled on May 28, 2016 at 3:00 PM in the Conference room, Administrative Block, IIT Jodhpur. The prospective tenderer(s) are requested to attend the pre-bid meeting on scheduled date and time. Technical specifications, Warranty, Terms & Conditions or any other query related to this tender shall be opened for discussion for wider competition and competitive prices. The Pre-bid queries to be submitted on or before

May 28, 2016 before 11:00 AM on the above given email id. No queries would be acceptable after given timeline. However, the tender of the Bidders should be received as mentioned in appropriate manner by the stipulated due date.

At any time prior to the deadline of submission of bid, Institute for any reason, whether at its own initiative or in response of a clarification requested by a prospective tenderer, modify the tender by amendment and it will be published on the website.

Technical bid(s) will be opened on June 13, 2016 at 04:00 PM in the Conference Hall, Administrative Block of the Institute in the presence of the tenderer(s) or their authorized representative(s), who are present at the scheduled date and time.

Date and time of the opening of the financial bid(s) will be decided after the technical bid(s) have been evaluated by the Institute. The financial bid(s) of only those tenderer(s) will be opened, who qualifies the technical evaluation, on the specified date and time. The date, time & place of opening of the financial bid(s) will be intimated in due course of time.

In the event of the due date of receipt and opening of the tender being declared as a holiday for the Institute, then due date of receipt / opening of the tender will be the next working day at the same time.

The tenderer are requested to read the tender document carefully and ensure to compliance with all the instructions herein. Non-compliance of the instructions contained in this document may disqualify the tenderer from the tendering exercise.

The Institute reserves the right to select certain items in single or multiple units and reject the others or all as mentioned in the schedule and to revise or alter the specifications before acceptance of any tender and accept or reject any or all tenders, wholly or partly or close the tender without assigning any reason whatsoever.

INSTRUCTIONS TO TENDERER

Tender should be submitted in two parts, Part – I (Technical Bid) & Part – II (Financial Bid). Envelope of Part – I should be super-scribed as “Tender for Supply and Installation of Test Machine for Fracture Testing, Fatigue Crack Propagation, Low Cycle Fatigue, Tension and Compression”, Part – I Technical Bid” and Envelope of Part – II should be super-scribed as “Tender for Supply and Installation of Test Machine for Fracture Testing, Fatigue Crack Propagation, Low Cycle Fatigue, Tension and Compression”, Part – II Financial Bid”.

1. Pre – Qualification Criteria:

- a) Only manufacturer(s) or their sole authorized distributor / agent are eligible to bid. Authorization letter in the prescribed format (Annexure – II) from Original Equipment Manufacturer (OEM) in favor of authorized Agent to bid / negotiate / conclude the order against this tender, must be enclosed with technical bid.
- b) The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of Rs.80,000/-(Rupees Eighty Thousand only) which is refundable and a non-refundable tender fee for an amount of Rs.1,000/- (Rupees One Thousand only) by way of demand drafts only. The demand drafts shall be drawn in favour of “Director, IIT Jodhpur” payable at Jodhpur. The demand drafts for Earnest Money Deposit & tender fee must be enclosed in the envelope containing the technical bid.
- c) The tenderer should have a minimum 03 (three) years of experience for supply & successful installation of goods of similar specifications. At least 01 (one) latest satisfactory installation report along with its purchase order, must be enclosed with the technical bid.
- d) Signed & stamped compliance sheet of the technical specification of the goods with technical printed literature along with Bill of Material (BoM) mentioning all the terms & conditions clearly, must be enclosed with the technical bid.
- e) Signed & stamped guarantee / warranty declaration certificate must be enclosed with the technical bid in prescribed format as attached as Annexure – III.
- f) The tenderer viz. the Indian Agents and / or the foreign firms should furnish a certificate that the rates quoted by the tenderer are not more than those quoted to any other Institution in India or abroad during the last one year, with supporting documents.
- g) The tenderer shall submit the copy of the tender document and addenda thereto, if any, with each page should be signed and stamped to confirm the acceptance of the entire term & conditions of the tender.
- h) An undertaking from the tenderer stating that they will facilitate the Institute for reinstallation of equipment from transit campus to permanent campus. The tenderer has to take all the responsibilities for reinstallation of the equipment. If tenderer needs any charges for reinstallation it should be quoted separately in financial bid.

2. **Earnest Money Deposit (EMD):**

The tenderer shall be required to submit the Earnest Money Deposit (EMD) for an amount of Rs.80,000/- (Rupees Eighty Thousand only) which is refundable and a non-refundable tender fee for an amount of Rs.1,000/- (Rupees One Thousand only) by way of demand drafts only. The demand drafts shall be drawn in favour of “Director, IIT Jodhpur”, Payable at Jodhpur”.

The firm(s) who are registered with the National Small Industries Corporation (NSIC) / or Small Scale Industries (SSI) for the subjected goods are exempted to furnishing the EMD and tender fee. Self-attested photocopy of the valid registration certificate must be enclosed with the technical bid.

The demand drafts for earnest money deposit & tender fee must be enclosed in the envelope containing the technical bid. Any technical bid is found without the demand drafts of earnest money deposit and tender fee will be rejected. The Institute will not be liable to pay any interest on such an amount. The earnest money deposit shall be forfeited, if the tenderer withdraws its bid during the period of tender validity.

The earnest money deposit of the tenderer, whose tender has been accepted, will be returned on the submission of the performance security. Earnest money deposit of the successful tenderer shall be forfeited, if it refuses or neglects to execute the order or fails to furnish the required performance security within the time frame as specified by the Institute.

After the award of the contract to the successful tenderer, the earnest money deposit of the unsuccessful tenderer(s) will be refunded within 30 days.

3. **Validity:**

Quoted rates must be valid for a period of 180 days from the date of the closing of the tender. The overall offer for the assignment and tenderer quoted price shall remain unchanged during the period of validity. If the tenderer quotes the validity shorter than the required period, the same will be treated as unresponsive and it may be rejected.

In case the tenderer withdraws, modifies or changes his offer during the validity period, the tender is liable to be rejected and the earnest money deposited shall be forfeited without assigning any reason thereof. The tenderer should also be ready to extend the validity, if required, without changing any terms, conditions etc. of their original tender.

4. **Delivery & Installation:**

All the goods ordered should be delivered within 06 weeks from the date of the receipt of the purchase order / date of opening of Letter of Credit, and satisfactory installation / commissioning and handover of the equipment will be completed within 01 week from the date of receipt of the material at the Institute premises and it will be ready to use within 07 weeks on faultless working condition from the date of the issue of the purchase order or within such time as may be extended by the Institute.

In case the tenderer need / or quoted more time for the completion of the order / project, for evaluation and comparison , Institute will convert all the proposal in single format with up-loading the LD charges of the extra time required on the quoted price.

Satisfactory Installation: Satisfactory installation / commissioning and handing over of the equipment mean the faultless functioning of the equipment for a minimum period of 30 days after satisfactory installation.

Liquidated Damages (LD): If the supplier would fail to perform the satisfactory installation / commissioning of the equipment and/ or which is not ready to use within stipulated time then penalty at the rate of 1% per week subject to maximum of 10% of the order value will be deducted.

Extension of Delivery & Installation Period: If the supplier would unable to complete the project / order within the stipulated time, for which the supplier is responsible, it is required to request for the extension of the delivery period, it may be extended with the imposing of the liquidated damages.

In case the supplier would fail to complete the order / project within the stipulated time, Institute reserves the right to cancel the contract / order and performance security / EMD may be forfeited.

5. **Guarantee / Warranty:**

Tender must be quoted with the warranty period of 5 years and it will commence from the date of the satisfactory installation / commissioning of equipment against the defect of any manufacturing, workmanship and poor quality of components and tenderer also give the guarantee / warranty declaration in prescribed format as attached with tender as Annexure – IV.

In addition to quoting for the Guarantee / Warranty for the equipment, tenderer(s) must quote the charges for Annual Maintenance Contract (AMC) for a period of two (2) years for maintaining the equipment at the Institute site, after the expiry of the period of warranty/guarantee. During the service contract period,

the firm shall provide two preventive maintenance visits and in addition attending to all emergent and breakdown calls.

The AMC charges should be quoted for labour cost only and should not include the cost of any replacement parts/components that may be needing replacement. During the service contract period, replacement of parts / components shall be made available by the Institute to the supplier at the Institute's own expense. The charges shall be paid to the firm in half-yearly installments after satisfactory service.

In addition to quoting the charges for the AMC, the bidder must also quote the charges for Comprehensive Maintenance Contract (CMC) for a period of two (2) years after the expiry of warranty / guarantee. The CMC charges should be quoted for labour as well as cost of any replacement parts / component that may be required for keeping the equipment functional.

It is essential to quote the charges and terms & conditions for the service contract, tender not containing service contract charges shall be considered incomplete and shall be rejected.

In case, supplier would fail to repair / or rectify the equipment during the warranty / guarantee period, Institute may employ or pay other person for the repairing of the equipment, all the such damages, loss and expenses shall be recoverable from the supplier.

Downtime: During both warranty and service contract (AMC/CMC) period not more than 5% downtime will be permissible. For downtime exceeding 1%, penalty equal to 1/365 of the 5% of the order value per day may be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours.

During the AMC the time taken by the Institute in providing the spares till the function of the of the unit will not be calculated as down time but the period of AMC will be extended equivalent to the period the unit remain out of order.

If the Institute opts to enter CMC during this period the equipment along with accessories has to be maintained for 347 days in a block of 365 days. However, 5 days time will be allowed to procure the spares in case the same has to imported and 5 days will not be counted as downtime.

6. **Training of Personnel:**

The supplier shall be required to undertake to provide the technical training to the personnel involved in the use of the equipment at the Institute premises, immediately after completing the installation of the equipment for a minimum period of a one week at the company cost.

7. Tender Preparation Expenses:

All costs incurred by the tenderer in the preparation of the tender, presentation and of negotiating the contract including the site visits etc. will be borne by the tenderer themselves and in no case will be reimbursable by the Institute.

8. Financial Bid:

The rates should be quoted inclusive of the essential charges on FOR at destination site basis in the prescribed format (Annexure – V) with complete description. Name of the manufacturer, model number must be indicated clearly in the proforma invoice / quotation, failing which the same shall be liable for rejection.

Where the equipment is composed of several subunits / component, the rate should be quoted for each subunit / component separately otherwise quotation is liable to be rejected. The Institute reserves the right to increase or decrease the number of subunits / components and number of equipment according to its requirements. The words “Not Quoting” should be clearly written against any item of equipment for which the tenderer is not quoting. The AMC / CMC rates are to be quoted separately in the financial bid.

Institute is registered with DSIR, Govt. of India (Custom Duty Notification No. 51/96- Custom dt: 23 July, 1996 and Central Excise Duty Notification No. 10/97- Central Excise dt: 1 March, 1997) and is therefore, exempted from Excise Duty and partial exempted from Custom Duty (CD applicable to IIT Jodhpur is 5.15%). Exemption Certificate of the same shall be issued.

NB: If any of the conditions mentioned in the tender enquiry document are alter / changed / modified / add any new condition, which are not compliance with tender enquiry document, by tenderer in their proposal, which may be treated as unresponsive and it may be rejected.

9. Tender Evaluation:

The Institute will evaluate the entire tenders, strictly on the basis of the terms & conditions incorporated in the tender enquiry document and terms, conditions etc. as stipulated by the tenderer(s) in their tender to determine whether these are compliance in all respects, as specified in the tender enquiry document.

During the evaluation / scrutiny of the tenders, at any stage, if it is found that any of the tenderer(s) terms and conditions are not compliance with tender enquiry document, Institute may seek the clarification within the specified target time and if the tenderer fails to reply / or not agree / accept the terms and conditions, their tender will be treated as unresponsive and it is liable for rejection.

If the schedule of requirements contains more than one schedule, then offers for each schedule are to be evaluated and ranked separately, if it is in the benefit of the Institute, order may be awarded accordingly.

Evaluation of the proposals shall be done in two stages as:

(a) Stage – I (Technical Evaluation): Technical evaluation of the proposals shall be done in two stages as:

➤ Sub-Stage – A (Essential pre-qualification criteria):

- Institute will examine all the bid(s) to determine whether they qualify the essential pre-qualification criteria, whether tenderer has submitted the EMD & Tender fee with technical bid, whether all the documents as mentioned / or required in the tender to be submitted with technical bid, has submitted, whether all the documents are in prescribed format and has been properly signed & stamped and whether the bid are completed and generally in order.
- Tender(s) which will not qualify Sub-Stage–A or conditional tender are to be treated as unresponsive and it may be rejected.

➤ Sub-Stage – B (Technical Specification):

- The Institute will examine the detailed technical specification of the quoted model, whether these are complying with the specification as mentioned in tender document.
- The tender which are not compliance with the tender specifications will be summarily rejected.

After the evaluation of technical bid(s), a list of the tenderer(s) who qualify the technical evaluation (Sub – Stage – A & B) shall be made. Shortlisted tenderer(s) shall be informed for the date, time and place of opening of the financial bid(s) and they may depute their representative/s to attend the opening of the financial bid(s). The financial bid(s) of the only technically qualified tenderer(s) will be opened.

(b) Stage – II (Financial Evaluation): Financial bid(s) of the only technically qualified tenderer(s) will be opened for financial evaluation.

The financial bid(s) will be evaluated on the basis of the cost of the item with its all taxes, freight, and other charges, as quoted. AMC/CMC charges will be considered separately, and these contracts will be on the discretion of the Institute to opt for.

If there is discrepancy between the unit price and total price (which is obtained by the multiplying the unit price by the quantity), the unit price shall prevail and the total price corrected accordingly and same

is to be conveyed to the tenderer with specified target time, if the tenderer does not agree with the observation of the Institute, the tender is liable to be ignored.

10. Award of Contract:

After due evaluation of the financial bid(s), the Institute will award the contract to the lowest evaluated responsive tenderer (hereinafter referred to as the “Supplier”).

11. Performance Security:

After the award of work, the supplier shall be required to submit the performance security in the form of irrevocable bank guarantee in the prescribed format (Annexure – IV) issued by any Nationalised/Scheduled Bank / or Fixed Deposit Receipt, for an amount equal to the 10% of order value and **it will be kept valid for a period of 60 days beyond the date of completion of warranty period. Warranty Period will be commenced from the date of the installation of the supplied item. Hence, be careful at the time of calculation of the validity date of Performance Bank Guarantee.**

On expiry of the warranty period the supplier will have to submit the fresh performance security for AMC / CMC period, if the Institute goes for maintenance contract. The fresh performance security to cover the service contract shall be submitted atleast one month before the expiry of previous performance security and it shall be 5% of the order value and it will be valid for period of maintenance contract period plus 60 days. Performance Security will be returned after completion all the contractual obligations.

12. Payment Term:

- I. 90% payment of the total order value shall be released against receipt of the goods at the Institute premises and after the successful installation / commissioning of the ordered goods against the submission of the test report.
- II. Balance 10% of the order value shall be released after the submission of the performance security.

13. Site Preparation:

The supplier shall inform to the Institute about the site preparation, if any, needed for the installation of equipment, immediately after the receipt of the purchase order. The supplier must provide complete

details regarding space and all the other infrastructural requirements needed for the equipment, which the Institute should arrange before the arrival of the equipment to ensure its timely installation and smooth operation thereafter.

The supplier shall visit the Institute and see the site whether the equipment is to be installed and may offer his advice and render assistance to the Institute in the preparation of the site and other pre-installation requirements.

14. Merger / Acquisition of Foreign Principal:

In case of merger of Foreign Principal with another Firm or acquisition of Foreign Principal by another firm, it shall be obligatory for the New Entity so formed after the merger of the Acquiring Firm, as the case may be, to take over all the duties and obligations / liabilities of the Foreign Principal and the New Entity / Acquiring Firm would *ipso facto* become liable for all acts of commission or omission on the part of original Foreign Principal as well as Indian Agent.

15. Change of Indian Agent:

In case the Foreign Principal changes in Indian Agent then it shall be obligatory for Foreign Principal to automatically transfers all the duties and obligations to the New Indian Agent, failing which the Foreign Principal would *ipso facto* become liable for all acts of commission or omission on the part of New Indian Agent.

16. Force Majeure:

Any delay due to Force Majeure will not be attributable to the bidder. Force Majeure events shall mean one or more of the following acts or events: Acts of God or events beyond the reasonable control of the Affected Party which could not reasonably have been expected to occur, exceptionally adverse weather conditions, lightning, earthquake, cyclone, flood, volcanic eruption or fire or landslide; Radioactive contamination or ionizing radiation; Strikes or boycotts (other than those involving the Supplier or its employees/representatives or attributable to any act or omission of any of them) interrupting supplies and services of the Project for a period exceeding a continuous period of 7 (seven) days; An act of war (whether declared or undeclared), invasion, armed conflict or act of foreign enemy, blockade, embargo, riot, insurrection, terrorist or military action, civil commotion or politically motivated sabotage which prevents rendering of supplies or specified services by the Supplier for a period exceeding a continuous period of 7 (seven) days.

17. Arbitration and Laws:

In case of any dispute or difference arising out of or in connection with the tender conditions / order and Contract, the Institute and the Supplier will address the dispute / difference for a mutual resolution and failing which, the matter shall be referred for arbitration to a sole Arbitrator to be appointed by the Institute. The Arbitration shall be held in accordance with the provisions of the Arbitration and Conciliation Act, 1996 and the venue of arbitration shall be at Jodhpur only. The resolution of the Arbitrator shall be final and binding on both the parties.

18. Jurisdiction:

The courts at Jodhpur alone will have the jurisdiction to try any matter, dispute or reference between parties arising out of this tender / contract. It is specifically agreed that no court outside and other than Jodhpur court shall have jurisdiction in the matter.

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ANNEXURE – I

Test Machine for Fracture Testing, Fatigue Crack Propagation, Low Cycle Fatigue, Tension and Compression

Technical specifications:

Parameters

Types of tests to be performed

Details

Fatigue (low cycle, Fatigue crack growth rate measurement) and fracture toughness samples (J_{IC} , K_{Ic} , J-R curves,. The supplied machine must be complete with all requisite accessories as is necessary for performance of the above mentioned tests.

Materials to be tested

Metals, ceramics, composites, in standard / subsize sample sizes.

Temperature of testing

-150 to 1000°C for both tensile /compression tests.

Maximum force capacity

100 kN with additional load cells of 10 kN and 1 kN with necessary attachments provided.

Compatibility with test specifications

Relevant ASTM, ISO, DIN, JIS standards.

Stiffness of machine (at testing height)

Greater than 500 kN/mm.

Frequency range for cyclic loading

Minimum: less than 1 Hz; Maximum: 100 Hz

Actuator performance

Amplitude greater than 0.5 mm at 100 Hz at half the maximum load.

Types of control

Stress and Strain control.

Strain gauge resolution

Less than or equal to 0.0001 \pm 0.5%.

Strain gauge accuracy

As is required for the tests as per ASTM, ISO standards

Sample grip assembly fixture

Sample grip assemblies required for testing following samples are to be provided

- Room temperature (RT), low temperature (LT) and high temperature (HT) testing of flat specimens (0 to 16 mm thickness and up to 25 mm width) with smooth shank / shouldered with hole and round specimens (up to 16 mm diameter) with smooth shank / button head / threaded ends up to 100 kN for low and high cycle fatigue. Maximum allowable load for HT tests: \pm 50 kN .
- RT and HT compression samples of at least 25 mm diameter up to 100 kN load.
- RT / H.T. Compact tension specimens of $B = 25.4$ mm and $W = 50.8$ mm.
- RT / H.T. Compact tension specimens of $B =$

12.7 mm and $W = 25.4$ mm.

(e) Three point bend test specimens with maximum span length of 300 mm for fatigue and fracture toughness as per JIS standard

(f) The grip assemblies for all high temperature testing must be designed such that the temperature of load cell and actuator head must not exceed room temperature.

The grip assemblies provided must be compliant with the appropriate ASTM and ISO standards and should preferably be of anti-slip and self-aligning type.

The details with regards to technical specification, standard compliance and mounting that is being supplied must be mentioned in the tender document.

The furnace provided for high temperature testing must be of such construction such that,

(a) At 1000 °C under steady state and continuous-

Furnace

-operating conditions the outer surface temperature of furnace must be less than 50 °C.

(b) The furnace must be of three zone construction with the length of 3 zones (end, central, end) being at least 200 mm, 350 mm and 200 mm respectively.

(c) Each of the three zones of the furnace must have individual thermocouples along with individual temperature controllers. The three temperature controllers must be linked back to back so that all 3 zones are at the same temperature.

(d) Furnace to be mounted on the load frame

(e) Furnace inner bore must be big enough to allow space for high temperature measurement accessories provided

(f) Construction must allow use of high temperature extensometers.

(g) Construction must allow use of laser extensometer.

(h) Furnace I.D: greater than 100 mm

(i) Continuous operating temperature range: 100 to 1000 °C or better.

(j) The temperature variation in the uniform length zone at continuous operating conditions must not exceed ± 2 °C.

(k) Position of thermocouple in furnace should be such that it measures temperature of the specimen, not that of the coil.

The complete details with regards to technical specification, specifications complied and mounting that is being supplied must be mentioned in the tender document.

Environment Chamber

(a) The environment chamber must have an operating temperature range of -150 to 200 °C or better.

(b) Cooling below room temperature must be through solenoid valve using liquid Nitrogen.

(c) The unit provided must be complete with a Dewar flask of at least 100 liter capacity.

(d) The environment chamber must be rail mounted and should be easily exchangeable with the high temperature furnace by a single

operator without use of additional tools or tackles.

(e) Position of thermocouple in environment chamber should be such that it measures temperature of the specimen.

The complete details with regards to technical specification, mounting and mode of operation that is being supplied must be specified in the tender document.

Extensometers and gauges

(a) Low temperature axial extensometer for tensile testing with gauge length of at least 25 mm and travel of ± 12.5 mm or better.

(b) High temperature axial extensometer for tensile testing with gauge length of at least 25 mm and travel of ± 12.5 mm or better.

(c) Clip on axial extensometer for low cycle fatigue test-

-with gauge length of at least 12.5 mm and travel of ± 1.25 mm or better.

(d) High temperature clip on axial extensometer for low cycle fatigue test with gauge length of at least 12.5 mm and travel of ± 1.25 mm or better.

(e) Room temperature COD gauge of at least 5 mm gauge length and 3 mm travel or better.

(f) Room temperature COD gauge of at least 10 mm gauge length and 4 mm travel or better.

All grips and extensometers provided must be compliant with the appropriate ASTM and ISO standards and provided with calibration certificates from accredited certification agencies.

The complete details with regards to technical specification and mounting that is being supplied must be provided in the tender document.

Actuator displacement resolution

Less than or equal to 10 microns

Load cell overload capacity

$\pm 150\%$ of rated load capacity

Load cell accuracy

As is required for the tests as per ASTM, ISO standards

Load cell temperature

The surface temperature of load cell must never exceed room temperature ($25\text{ }^{\circ}\text{C}$) during continuous high temperature tests.

Transducer data acquisition resolution

Greater than 16 bits

Transducer data acquisition speed

Greater than 5 kHz

Control loop frequency

Greater than 5 kHz

Waveforms for dynamic testing

At least sine, square, triangular and random waveforms should be provided.

Control software

Windows based. The software must be able to perform low cycle fatigue,, K1C, J1C and fatigue crack propagation tests as per ASTM /ISO standards.

Software for tensile, compression and 3 point bend test as per ASTM/ISO standard maybe quoted as an optional item.

Control panel

Independent panel on the instrument to be provided in addition to computerized control. Appropriate software and requisite computer with monitor and printer must be provided.

Sensor conditioning channels

At least four spare channels to be provided in addition to the position and load channels used in

Analogue /digital inputs
Analogue/digital outputs
Cooling tower

Power backup

Power Supply (Mains)
Manuals
Inbuilt safety features

Data Acquisition PC with required Softwares
And printer

standard configuration.

At least 1 each.

At least 2 each.

The principal will be responsible to install cooling tower as maybe required for the instrument.

Additional quote along with full details of technical data must be provided for power backup so as to enable the running of the entire machine for at least one hour in the event of power failure.

220 V AC in single or multiple phase.

Soft copy in .pdf format and 3 sets of hard copies.

The entire equipment must comply with latest CE machinery directive which must be certified by notified bodies.

A PC based system with printer for data acquisition with relevant softwares for measurement of fracture toughness values, depicting J vs crack growth curves and other fracture fracture and fatigue test parameters.

Annexure – II

FORMAT FOR MANUFACTURER'S AUTHORISATION LETTER TO AGENT (on letter head)

Ref. No.

Date:

To,
The Director
Indian Institute of Technology Jodhpur
Old Residency Road, Ratanada, Jodhpur - 342011.

Sub.: Authorization Letter.

Dear Sir,

We, _____, who are established and reputed manufacturers of _____, having factory at _____, hereby authorize M/s. _____ (name & address of Indian distributor /agent) to bid, negotiate and conclude the order with you for the above goods manufactured by us.

We shall remain responsible for the tender / contract / agreement negotiated by the said M/s. _____, jointly and severally.

We ensure that we would also support / facilitate the M/s _____ on regular basis with technology / product updates for up-gradation / maintains / repairing / servicing of the supplied goods manufactured by us, during the warranty period.

In case duties of the Indian agent / distributor are changed or agent / distributor is changed it shall be obligatory on us to automatically transfer all the duties and obligations to the new Indian Agent failing which we will ipso-facto become liable for all acts of commission or omission on the part of new Indian Agent / distributor.

Yours faithfully,

[Name & Signature]

for and on behalf of M/s. _____ [Name of manufacturer]

Note: This letter of authorisation should be on the letterhead of the manufacturing concern and should be signed by a person competent and having the power of attorney to bind the manufacturer. A copy of notarised power of attorney should also be furnished.

Annexure – III

CERTIFICATE OF GUARANTEE/WARRANTY (on letter head)

I / We certify that the guarantee / warranty shall be given for a period of five (05) years starting from the date of the satisfactory installation, commissioning and handing over of the equipment and the work completed under the contract. During the guarantee / warranty period, I / we shall provide the “after sale service” and the replacement of defective / or any part(s) of the equipment or rectification of defects of work of the equipment will be free of cost. The replacement of the parts shall be arranged by us, at our own cost and responsibility. We undertake that the above guarantee / warranty shall begin only from the date of handing over of the equipment. The benefit of change in dates of the guarantee / warranty period shall be in the interest of the user / your organization.

During the warranty period, we shall provide atleast **2 preventive maintenance visits per year**.

Uptime Guarantee: During the guarantee / warranty period, we will be responsible to maintain the equipment including all the accessories in the satisfactory faultless working conditions for a period 347 days (i.e. 95% uptime) in a block of 365 days.

- All complaints will be attended by us within 4 working days of receipt of the complaint in our office.
- In case there is delay of more than 4 days in attending the complaint from our side then the Institute can count the number of days in excess of the permissible response time in the downtime. The above said response time of 4 days for attending to a complaint by us will not be counted in the downtime.
- Penalty: We shall pay a penalty equivalent to 0.5 % of the order value of the equipment for every week or part thereof delay in rectifying the defect.

No deduction or advantage of any kind on account of Sundays, half days or Public / Govt. holidays observed by the Institute shall be allowed from the total down time permissible as defined above. The right to accept the reason(s) for delay and consider reduction or waive off the penalty for the same shall be at the sole discretion of the Institute.

I / We shall try to repair the equipment at Institute premises. However, in case it is not possible to repair the equipment at Institute premises, we will take out the equipment to our site on our own expenses. We shall

take the entire responsibility for the safe custody and transportation of the equipment taken out for repairs till the equipment is rehabilitated to the Institute after repair. If any loss of equipment occurred during our custody, we will restore it / compensate to Institute for such losses.

I / We guarantee that in case we fail to carry out the maintenance work within the stipulated period, the Institute reserves the right to get the maintenance work carried out at our risk, cost and responsibility after informing us. All the expenses including excess payment for repairs / maintenance shall be adjusted against the Performance Bank Guarantee. In case the expenses exceed the amount of the Performance Bank Guarantee, the same shall be recoverable from us with / without interest in accordance with the circumstances.

I / We undertake to perform calibration after every major repair / breakdown / taking the equipment out for repair from the Institute premises.

I / We guarantee that we will supply spare parts, if and when required on agreed basis for an agreed price. The agreed basis could be an agreed discount on the published catalogue price.

I / We guarantee to the effect that before going out of production of the spare parts, we will give the adequate advance notice to Institute so that Institute may undertake to procure the balance of the life time requirements of the spare parts.

Authorized signatory of the company with seal

Annexure-IV

BANK GUARANTEE FORM FOR PERFORMANCE SECURITY

The Director
Indian Institute of Technology Jodhpur,
Jodhpur (India) 342011.

WHEREAS..... (Name and address of the Supplier) (hereinafter called “the Supplier”) has undertaken, in pursuance of contract no..... dated (hereinafter called “the contract”) to supply

AND WHEREAS it has been stipulated by you in the said contract that the Supplier shall furnish you with a bank guarantee by a scheduled/nationalized bank recognised by you for the sum specified therein as security for compliance with its obligations in accordance with and due performance of the contract;

AND WHEREAS we have agreed to give the Supplier such a bank guarantee;

NOW THEREFORE we hereby affirm that we are guarantors and responsible to you, on behalf of the Supplier, up to a total of(amount of the guarantee in words and figures), and we hereby irrevocably and absolutely undertake to pay you immediately, upon your first written demand declaring the Supplier to be in default under the contract and without cavil or argument, any sum or sums within the limits of (amount of guarantee) as aforesaid, without your needing to prove or to show grounds or reasons for your demand or the sum specified therein.

We hereby waive the necessity of your demanding the said debt from the Supplier before presenting us with the demand.

We further agree that no change or addition to or other modification of the terms of the contract to be performed there under or of any of the contract documents which may be made between you and the Supplier shall in any way release us from any liability under this guarantee and we hereby waive notice of any such change, addition or modification.

The Bank guarantee shall be interpreted in accordance with the laws of India. The Guarantor Bank represents that this Bank Guarantee has been established in such form and with such content that is fully enforceable in accordance with its terms as against the Guarantor Bank in the manner provided herein.

The Bank Guarantee shall not be affected in any manner by reason of merger, amalgamation, restructuring or any other change in the constitution of the Guarantor Bank or the Supplier. The Bank further undertakes not to revoke this Guarantee during its currency except with the previous express consent of the Buyer in writing.

The Bank declares that it has power to issue this Guarantee and discharge the obligations contemplated herein, the undersigned is duly authorized and has full power to execute this Guarantee for an on behalf of the Bank.

This guarantee shall be valid up to and including the day of, 20.....

.....

(Signature with date of the authorised officer of the Bank)

.....

Name and designation of the officer

.....

Seal, name & address of the Bank and address of the Branch

Annexure - V

Format for Financial Bid

(To be submitted on the letterhead of the company / firm)

Ref. No.

Dated:

S. No.	Description	Qty.	Unit Rate	Total Amount
1.	Basic Price of the equipment			
2.	Other charges (if any, specify in brief)			
3.	VAT / CST (As applicable)			
Total				
4.	AMC charges (After warranty for 2 years)	Charges for 1 st year		
		Charges for 2 nd year		
5.	CMC charges (After warranty for 2 years)	Charges for 1 st year		
		Charges for 2 nd year		

Note:

1. I/We have gone through the entire terms & conditions as stipulated in the tender enquiry document and confirm to accept and abide the same.
2. No other charges would be payable by the Institute.
3. Rates of AMC and CMC are to be quoted in Indian Rupees only as these shall be paid in Indian Rupees only.
4. CMC has to be for all parts and may also include consumables and reagents. The charges for the service contract will be paid half-yearly in arrears for satisfactory service or as per the mutually agreed upon schedule.

Authorized signatory of the company with seal
