Notice Inviting Quotation (E-Procurement mode)

INDIAN INSTITUTE OF TECHNOLOGY DELHI

HAUZ KHAS, NEW DELHI-110016

Dated: 04/10/2016

Open Tender Notice No.IITD/BTXT(SP-600)/2016

Indian Institute of Technology Delhi is in the process of purchasing following item(s) as per details as given as under.

Details of the item	**Universal Testing Machine**
Earnest Money Deposit to be submitted	**NIL**
Warranty	**3 Years**
Performance security	**Nil**

Tender Documents may be downloaded from Central Public Procurement Portal http://eprocure.gov.in/eprocure/app.Aspiring Bidders who have not enrolled / registered in e-procurement should enroll / register before participating through the website http://eprocure.gov.in/eprocure/app . The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission '.

Tenderers can access tender documents on the website(For searching in the NIC site, kindly go to Tender Search option and type 'IIT'. Thereafter, Click on "GO" button to view all IIT Delhi tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online on the website http://eprocure.gov.in/eprocure/app as per the schedule given in the next page.

No manual bids will be accepted. All quotation (both Technical and Financial should be submitted in the E-procurement portal).

Schedule

Name of Organization	Indian Institute of Technology Delhi
Tender Type (Open/Limited/EOI/Auction/Single)	Open
Tender Category (Services/Goods/works)	Goods
Type/Form of Contract (Work/Supply/ Auction/Service/Buy/Empanelment/ Sell)	Buy
Product Category (Civil Works/Electrical Works/Fleet Management/ Computer Systems)	Others
Is Multi Currency Allowed	YES
Date of Issue/Publishing	04/10/2016 (17:30Hrs)
Document Download/Sale Start Date	04/10/2016 (17:30Hrs)
Document Download/Sale End Date	04/10/2016 (16:00Hrs)
Date for Pre-Bid Conference	---
Venue of Pre-Bid Conference	---
Last Date and Time for Uploading of Bids	04/11/2016 (16:00Hrs)
Date and Time of Opening of Technical Bids	07/11/2016 (15:00Hrs)
Tender Fee	NIL
EMD	NIL
No. of Covers (1/2/3/4)	02
Bid Validity days (180/120/90/60/30)	120 days (From last date of opening of tender)
Address for Communication	Dr. R. Alagirusamy Textile Technology Department IIT Delhi Hauz Khas, New Delhi-110016
Contact No.	011-26591419
Fax No.	011-26581103
Email Address	rasamy@textile.iitd.ac.in, alagiru@gmail.com

Chairman Purchase Committee
(Buyer Member)

Instructions for Online Bid Submission:

As per the directives of Department of Expenditure, this tender document has been published on the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app). The bidders are required to submit soft copies of their bids electronically on the CPP Portal, using valid Digital Signature Certificates. The instructions given below are meant to assist the bidders in registering on the CPP Portal, prepare their bids in accordance with the requirements and submitting their bids online on the CPP Portal.

More information useful for submitting online bids on the CPP Portal may be obtained at:

http://eprocure.gov.in/eprocure/app

REGISTRATION

1) Bidders are required to enroll on the e-Procurement module of the Central Public Procurement Portal (URL:http://eprocure.gov.in/eprocure/app) by clicking on the link "Click here to Enroll". Enrolment on the CPP Portal is free of charge.
2) As part of the enrolment process, the bidders will be required to choose a unique username and assign a password for their accounts.
3) Bidders are advised to register their valid email address and mobile numbers as part of the registration process. These would be used for any communication from the CPP Portal.
4) Upon enrolment, the bidders will be required to register their valid Digital Signature Certificate (Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India (e.g. Sify / TCS / nCode / eMudhra etc.), with their profile.
5) Only one valid DSC should be registered by a bidder. Please note that the bidders are responsible to ensure that they do not lend their DSCs to others which may lead to misuse.
6) Bidder then logs in to the site through the secured log-in by entering their userID / password and the password of the DSC / eToken.

SEARCHING FOR TENDER DOCUMENTS

1) There are various search options built in the CPP Portal, to facilitate bidders to search active tenders by several parameters. These parameters could include Tender ID, organization name, location, date, value, etc. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, form of contract, location, date, other keywords etc. to search for a tender published on the CPP Portal.
2) Once the bidders have selected the tenders they are interested in, they may download the required documents / tender schedules. These tenders can be moved to the respective 'My Tenders' folder. This would enable the CPP Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.
3) The bidder should make a note of the unique Tender ID assigned to each tender, in case they want to obtain any clarification / help from the Helpdesk.

PREPARATION OF BIDS

1) Bidder should take into account any corrigendum published on the tender document before submitting their bids.
2) Please go through the tender advertisement and the tender document carefully to understand the documents required to be submitted as part of the bid. Please note the number of covers in which the

bid documents have to be submitted, the number of documents - including the names and content of each of the document that need to be submitted. Any deviations from these may lead to rejection of the bid.

3) Bidder, in advance, should get ready the bid documents to be submitted as indicated in the tender document / schedule and generally, they can be in PDF / XLS / RAR / DWF formats. Bid documents may be scanned with 100 dpi with black and white option.

4) To avoid the time and effort required in uploading the same set of standard documents which are required to be submitted as a part of every bid, a provision of uploading such standard documents (e.g. PAN card copy, annual reports, auditor certificates etc.) has been provided to the bidders. Bidders can use "My Space" area available to them to upload such documents. These documents may be directly submitted from the "My Space" area while submitting a bid, and need not be uploaded again and again. This will lead to a reduction in the time required for bid submission process.

SUBMISSION OF BIDS

1) Bidder should log into the site well in advance for bid submission so that he/she upload the bid in time i.e. on or before the bid submission time. Bidder will be responsible for any delay due to other issues.

2) The bidder has to digitally sign and upload the required bid documents one by one as indicated in the tender document.

3) Bidder has to select the payment option as "on-line" to pay the tender fee / EMD as applicable and enter details of the instrument. Whenever, EMD / Tender fees is sought, bidders need to pay the tender fee and EMD separately on-line through RTGS (Refer to Schedule, Page No.2).

4) A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders are requested to note that they should necessarily submit their financial bids in the format provided and no other format is acceptable. Bidders are required to download the BoQ file, open it and complete the white coloured (unprotected) cells with their respective financial quotes and other details (such as name of the bidder). No other cells should be changed. Once the details have been completed, the bidder should save it and submit it online, without changing the filename. If the BoQ file is found to be modified by the bidder, the bid will be rejected.

   OR

   In some cases Financial Bids can be submitted in PDF format as well (in lieu of BOQ).

5) The server time (which is displayed on the bidders' dashboard) will be considered as the standard time for referencing the deadlines for submission of the bids by the bidders, opening of bids etc. The bidders should follow this time during bid submission.

6) All the documents being submitted by the bidders would be encrypted using PKI encryption techniques to ensure the secrecy of the data. The data entered cannot be viewed by unauthorized persons until the time of bid opening. The confidentiality of the bids is maintained using the secured Socket Layer 128 bit encryption technology. Data storage encryption of sensitive fields is done.

7) The uploaded tender documents become readable only after the tender opening by the authorized bid openers.

8) Upon the successful and timely submission of bids, the portal will give a successful bid submission message & a bid summary will be displayed with the bid no. and the date & time of submission of the bid with all other relevant details.

9) Kindly add scanned PDF of all relevant documents in a single PDF file of compliance sheet.

ASSISTANCE TO BIDDERS

1) Any queries relating to the tender document and the terms and conditions contained therein should be addressed to the Tender Inviting Authority for a tender or the relevant contact person indicated in the tender.

2) Any queries relating to the process of online bid submission or queries relating to CPP Portal in general may be directed to the 24x7 CPP Portal Helpdesk. The contact number for the helpdesk is 1800 233 7315.

General Instructions to the Bidders

1) The tenders will be received online through portal http://eprocure.gov.in/eprocure/app . In the Technical Bids, the bidders are required to upload all the documents in .pdf format.

2) Possession of a Valid Class II/III Digital Signature Certificate (DSC) in the form of smart card/e-token in the company's name is a prerequisite for registration and participating in the bid submission activities through https://eprocure.gov.in/eprocure/app . Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available in the web site https://eprocure.gov.in/eprocure/app under the link "Information about DSC".

3) Tenderer are advised to follow the instructions provided in the 'Instructions to the Tenderer for the e-submission of the bids online through the Central Public Procurement Portal for e Procurement at https://eprocure.gov.in/eprocure/app.

Department of Textile Technology
Indian Institute of Technology
Hauz Khas, New Delhi-110 016

NOTICE INVITING QUOTATIONS

Dated: 04/10/2016

Subject: **Purchase of Universal Testing Machine**

Invitation for Tender Offers

Indian Institute of Technology Delhi invites online Bids (Technical bid and Commercial bid) from eligible and experienced OEM (Original Equipment Manufacturer) OR OEM Authorized Dealer for **supply, installation & integration of Universal Testing Machine** with three years on site comprehensive warranty from the date of receipt of the material as per terms & conditions specified in the tender document, which is available on CPP Portal http://eprocure.gov.in/eprocure/app

TECHNICAL SPECIFICATION:

100 kN Capacity Universal Materials Test System Specification

I.	GENERAL : The testing instrument shall consist of a +/-100kN capacity Load frame, a Load weighing system, and Software for machine control, data acquisition and data manipulation. All of these components must be fully integrated and supported by the vendor.
II	MATERIAL TESTING SYSTEM SPECIFICATIONS : This unit shall integrate the following major sub-systems into a complete operating system. The major sub-systems and their specifications are:
A	LOADING FRAME
i.	The dual column-loading floor Standing Frame should be capable of tension, compression, flexure, shear, and reverse stress testing. It should include a digital closed loop command and feedback motion control system with a high performance DC permanent magnet brushed servo motor.
ii.	The Axial Stiffness should be at least 250 kN/mm. For lateral stiffness and robustness purposes, Guidance columns should be there.
iii.	The frame shall include dual level mechanical limit switches on the front of the frame that prevent the crosshead from traveling too high or too low. The first level switch should stop the crosshead and the second level limit switch should cut the power to the frame.
iv.	The frame shall include adjustable leveling feet and an integrated graduated measurement scale.
v.	The vertical Test Space (distance between the top surface of the base platen to the bottom surface of the moving crosshead) shall be at least 1400 mm for load cells, grips and fixtures.
vi.	The total height of the load frame shall be a maximum of 2200 mm.
vii.	The maximum load capacity shall be at least 100kN.
viii.	The speed range should be 0.00005 mm to 1000 mm per minute and shall be settable continuously. The return speed should be at least 1000 mm/min.
ix.	The steady state speed accuracy shall be +/-0.1%, of set speed measured over full speed range.
x.	For safety purposes, the frame shall incorporate an auto-frame standby mode that automatically stops the frame when the transducer, interface, or computer is disconnected or shutdown.
xi.	The frame shall include integrated T-slots on the front and back of both column covers for easy mounting of accessories.
xii.	Position Measurement Accuracy should be ±0.01 mm or 0.05% of displacement (whichever is greater)
xiii.	The frame should essentially include a Control Panel with Live Display, Soft keys, and Specimen Protect for enhanced usability and productivity.

xiv.	This operator panel should be used to run and stop tests at the frame as opposed to through the PC and software.
xv.	The system should have automatic control over the crosshead movement in response to the excess load than the pre-defined load in software to prevent overloading of specimens, fixtures, and load cells during gripping and adjustments.
xvi.	The operator panel shall have up to 4 live displays that are in synch with the testing software live displays as well as 4 shortcut keys that can be used to carry out functions such as balancing load, strain or marking data.
xvii.	The operator panel shall also have a fine position wheel that can be used to move the frame crosshead in small increments to aid in the mounting and removal of specimens and fixtures.
xviii.	The position control resolution of the system should be less than 0.009 micro meters.
xix.	The system should be operated with Single Phase AC voltage and power consumption should not exceed 3.5 KVA.
B	LOAD WEIGHING SYSTEM, TRANSDUCERS, & ELECTRONICS
i.	The system should be supplied with a +/-100kN capacity load cell mounted under its moving crosshead.
ii.	Load cell and extensometer transducers should include self-identification (recognition) electronics in the connector directly attached to these transducers which automates the calibration of these devices. System should allow for manual calibration of third party transducers also
iii.	The load weighing system accuracy shall be within +/-0.5% of reading down to 1/1000th of the load cell capacity for load cells 500N or higher and System Accuracy should be 0.4% from full scale down to 1/100th of the load cell capacity. Digital signal processing of the load signal should be used to achieve this accuracy throughout the entire range without affecting the resolution of the data by having the operator, software, or electronics to perform manual or automated ranging.
iv.	For safety purposes, the maximum load for a test should be set by identification electronics located in the connector directly attached to the load cell.
v.	The Load cell should be able to withstand up to 300% of the rated capacity without mechanical damage and up to 150% without zero shift.
vi.	The computer shall communicate to the frame though an Ethernet 10/100 Mb/sec interface to give a high data transmission rate from system to PC.
C	SOFTWARE
1	Test frame control
a)	The software must have multi levels of user access based on his or her login name and password.
b)	The testing software must be able to perform tensile, compression, flexure, peel, tear, friction and simple and Complex cyclic tests and include an appropriate calculation list for each type of test.
c)	Digital displays on the computer monitor should show live load, displacement, and optional strain values engineering units that can be selected to be Metric, S.I., U.S. customary. Up to 4 live display windows shall be available for display simultaneously.
d)	The control software shall include set-up of the following: test speed, limits on all channels, auto calibration and balancing of all transducers, specimen dimensions, and results tables at a minimum.
e)	An unlimited number of test methods and shall be available for storage and retrieval.
f)	Provision for extra unlimited no. of live displays on screen while testing is a must.
g)	The software shall include an integrated context sensitive help and reference system running always in the backend during the software ON time.
h)	The software shall be user friendly and allow the user to be prompted during testing and provide a mechanism for the user to select images or video clips to be included in the prompt area when running tests.
i)	An Option in software is essentially required for video recording of a test with link to video file with the Data acquired. This feature should allow for the connection of a webcam or other video capture device, giving operator the ability to experience point-by-point playback of the specimen throughout the test.
j)	This feature should allow for the connection of a webcam or other video capture device, giving operators the ability to experience point-by-point playback of the specimen throughout the test.
k)	The software should have a provision of Raw Data Viewer on the main screen to view the raw data during the test to examine every data point for any measurement.
l)	A Software Module should be supplied with the main software that could help in searching test specimens based on a specimen property, test parameter, or a calculation result. Using this software module Testing Software automatically exports various test parameters and results to a database at the end of every sample.

m)	The Viewer of this software should provide an intuitive interface to search, display, and analyze results over time, and across multiple samples and test frames.
n)	For better analysis of the test, using this software visualization capabilities user should be able to plot the data gathered for specimens from different batches
2	Data acquisition
a)	Run time screen must be capable of displaying both the real time graph and the calculated results of multiple specimens simultaneously.
b)	The control software shall be capable of acquiring data and transferring it to PC at 2,500 Hz rate across load, displacement, and up to two optional strain channels.
c)	Data shall be acquired at a user selectable, continuous rate without gaps.
d)	Specimen geometry's for each specimen shall include most common geometries.
e)	A real time X-Y plot of two selected variables should be displayed. The variable for each axis will be load, stress, extension, and optional strain as selected by the user. Other graph features will include manual and automatic scaling, legend symbols, to distinguish individual test curves, horizontal and vertical offset between test curves, and selectable number of test curves per display.
f)	Test control software must be able to automatically store raw data or calculated results in an Excel format.
g)	The software shall offer the multiple user inputs:
3	Data manipulation
a)	The software should have the MS-word, HTML, PDF reporting formats.
b)	The software must include the capability to define correction factors such as machine compliance, slack, pretension, load and gauge length.
c)	The ability to re-analyze past test data using different calculations must be provided.
d)	The software shall allow the user to define the company logo as a part of the method
D	SERVICEABILITY AND SYSTEM STATUS
i.	Factory trained service engineers based in Delhi must be available for additional training or warranty service.
ii.	The supplier shall install the system and provide basic on-site training for a minimum of one day.
iii.	Vendor should provide the Calibration of the system up to 100 kN Load with ASTM or ISO standards.
iv.	TENSILE GRIP SPECIFCATIONS:-
v.	The grip capacity should be 100 kN and it should be based on Pneumatic Wedge Action Principle.
vi.	The grips should have easy front loading of flat specimens up to 40 mm thickness and round specimens up to 50 mm Diameter.
vii.	The grips should incorporate Self-tightening wedge design that eliminates slippage under loads.
viii.	The grips should include Specimen centering device that insures accurate alignment
ix.	It should be able to withstand a temperature ranging from 5 Degree C up to 65 degree C.
x.	Jaw faces for flat specimens with 40 mm Thickness and round specimen 50 mm Diameter should be provided.
E	TENSILE GRIPS FOR METALS
i.	The grip capacity should be 100 kN.
ii.	To eliminate specimen slippage, the Grips should be based on Self Tightening Mechanical Wedge Action Principle.
iii.	The Grips should be able to withstand a temperature ranging from -70 Deg C to 250 Deg C.
iv.	Appropriate jaw faces should be provided
v.	Fixed faces and Moving Body during specimen loading.
vi.	All Jaw Faces should be hardened to 60 RC to 65 RC.
F	FLEXURE FIXTURE SPECIFICATIONS:-
i.	The Flexure Fixture should have a capacity of 100 kN.
ii.	It should conform to ASTM/ISO and DIN Standards.
iii.	Lower Rollers should have an adjustable span distance of upto 250 mm.
iv.	It should be able to withstand a temperature range from –100 degrees C upto +350 degrees C.
v.	It should be able to handle Type of loading: Static flexure, cyclic flexure tests.
G	COMPRESSION PLATENS:-
i.	Compression platens with Dia 150 mm should be provided.
ii.	The Capacity of compression platens should be 100 kN

iii.	The temperature range should be -70 deg C to +300 Deg C.
iv.	Provision for attachment of optional displacement transducers should be there.
v.	Hardness should be 55-65 HRC
vi.	Overall height should not be more than 75mm
H	NON CONTACTING VIDEO EXTENSOMETER
i.	Accurate Non Contacting Strain Measurement Extensometer Suitable for Ambient, High/Low Temperatures.
ii.	The Extensometer Should be able to be used for advance strain measurement with Digital Image Correlation.
iii.	It Should Utilize the real-time 450 Hz or better data rate to capture images of quickly changing measurement events
iv.	It Should be able to Record images of the test for synchronized playback or for post-analysis of tests with Digital Image Correlation
v.	It should be able to measure Modulus and Strain to Failure for any Material Including Metals, Composites, Textiles, Plastics, Films, Elastomers etc..
vi.	It Should be able to accommodate variable Gauge Lengths
vii.	It should be able to be used on any system in the lab that accepts +/- 10 V input regardless of age of system or manufacturer.
viii.	It should incorporate the technology that reduces errors from thermal and lighting fluctuations that are common in most labs
ix.	Focal Length of the Lens should be defined and Field of view should be more than 400mm.
x.	Data Rate of the extensometer should be at least 450 Hz or better.
xi.	Transverse Measurement option should be offered with an FOV of 70 mm or better.
xii.	Axial Accuracy @ FOV 200mm: ±1 µm
xiii.	Axial Resolution @ FOV 200mm: 0.5 µm
xiv.	Axial Max following Rate: Uniform @ 2500 mm/min
xv.	It should be able to measure strains for both static and dynamic tests for a Field of view (FOV) of 200 mm or more with a Resolution of better than 1um & shall be upgradable to Digital Image Correlation (DIC).
I	DIGITAL IMAGE CORRELATION
i.	Digital Image Correlation Software for comparison of images of a tested specimen's surface to generate full-field strain and displacement maps.
ii.	It should feature the built-in synchronization of DIC images with test data collected, including load, position, and more.
iii.	It should visualize strain and displacement over the full surface of a two dimensional object.
iv.	The Displays should include axial strain, Axial Displacement, Transverse Strain, Transverse Displacement, Shear Strain, Maximum Normal Strain, and Minimum Normal Strain.
v.	It should have the Capability to analyze the specimens strain behavior after the test using this DIC replay software.
vi.	User should be able to view Material's testing Phenomenon such as discontinuous yielding, localized necking etc..
vii.	User should be able to check for standards compliance by identifying localized strain that falls outside of the standard gauge length or clip-on extensometer.
viii.	User should be able to place, and size virtual extensometers or virtual strain gauges anywhere on the processed region.
ix.	User should be able to define a region of interest with simple click and drag shape tools and calculate strain and displacement maps over the entire sequence or from a region of interest.
x.	The software should consume images and calibration data saved by Video Extensometer and work in a post-processing mode for analysis of specimens.
J	V-NOTCHED BEAM SHEAR FIXTURE (IOSIPESCU SHEAR)
i.	The V-Notched Beam Shear fixture should comply to ASTM D5379.
ii.	It should have high strength corrosion resistant stainless steel construction.
iii.	For Precision alignment and low friction, the cross roller bearings should be utilized
iv.	It should be able to withstand a temperature range of -70 to 250 Deg C.
v.	Design of the fixture should include arrangement to avoid off-Axis Forces and Non-Shear loads.
K	INTERLAMINAR SHEAR FIXTURE.
i.	Inter-laminar Shear Strength(ILSS) testing Fixture to be provided .

ii.	Capacity Load Capacity should be 10 kN.
iii.	It should be able to withstand a temperature of -70 Deg C to 250 Deg C.
iv.	Maximum Span of the base 210 mm.
v.	Upper Anvil Hardness should be at least 60 HRC.

**** Technical brochure must be provided with the submitted bid***

A complete set of tender documents* may be Download by prospective bidder free of cost from the website http://eprocure.gov.in/eprocure/app. Bidder has to make payment of requisite fees (i.e. Tender fees (if any) and EMD) by demand draft in favour of Registrar, IIT Delhi payable at New Delhi.

Terms & Conditions Details

Sl. No.	Specification
1.	**Due date**: The tender has to be submitted before the due date. The offers received after the due date and time will not be considered.
2.	**Preparation of Bids**: The offer/bid should be submitted in two bid systems (i.e.) Technical bid and financial bid. The technical bid should consist of all technical details along with commercial terms and conditions. Financial bid should indicate item wise price for the items mentioned in the technical bid in the given format PDF format. The Technical bid and the financial bid should be submitted Online.
3.	**Opening of the tender**: The online bid will be opened by a committee duly constituted for this purpose. Online bids (complete in all respect) received will be opened as mentioned at "Annexure: Schedule" in presence of bidders representative if available, Only one representative will be allowed to participate in the tender opening. The technical bid will be opened online first and it will be examined by a technical committee which will decide the suitability as per our specification and requirement. The financial offer/bid will be opened only for the offer/bid which technically meets all our requirements as per the specification, and will be opened in the presence of the vendor's representatives subsequently for further evaluation. The bidders if interested may participate on the tender opening Date and Time. The bidder should produce authorization letter from their company to participate in the tender opening.
4.	**Acceptance/ Rejection of bids:** The Committee reserves the right to reject any or all offers without assigning any reason.
5.	**Pre-qualification criteria:** (i) Bidders should be the manufacturer / authorized dealer. Letter of Authorization from original equipment manufacturer (OEM) on the same and specific to the tender should be enclosed. (ii) An undertaking from the OEM is required stating that they would facilitate the bidder on a regular basis with technology/product updates and extend support for the warranty as well. (iii) OEM should be internationally reputed Branded Company. (iv) Non-compliance of tender terms, non-submission of required documents, lack of clarity of the specifications, contradiction between bidder specification and supporting documents etc. may lead to rejection of the bid. (v) In the tender, either the Indian agent on behalf of the Principal/OEM or Principal/OEM itself can bid but both cannot bid simultaneously for the same item/product in the same tender. (vi) If an agent submits bid on behalf of the Principal/OEM, the same agent shall not submit a bid on behalf of another Principal/OEM in the same tender for the same item/product.
6.	**Force Majeure:** The Supplier shall not be liable for forfeiture of its performance security, liquidated damages or termination for default, if and to the extent that, it's delay in performance or other failure to perform its obligations under the Contract is the result of an event of Force Majeure. • For purposes of this Clause, "Force Majeure" means an event beyond the control of the Supplier and not involving the Supplier's fault or negligence and not foreseeable. Such events may

	include, but are not limited to, acts of the Purchaser either in its sovereign or contractual capacity, wars or revolutions, fires, floods, epidemics, quarantine restrictions and freight embargoes. ● If a Force Majeure situation arises, the Supplier shall promptly notify the Purchaser in writing of such conditions and the cause thereof. Unless otherwise directed by the Purchaser in writing, the Supplier shall continue to perform its obligations under the Contract as far as is reasonably practical, and shall seek all reasonable alternative means for performance not prevented by the Force Majeure event.
7.	**Risk Purchase Clause**: In event of failure of supply of the item/equipment within the stipulated delivery schedule, the purchaser has all the right to purchase the item/equipment from the other source on the total risk of the supplier under risk purchase clause.
8.	**Packing Instructions**: Each package will be marked on three sides with proper paint/indelible ink, the following: i. Item Nomenclature ii. Order/Contract No. iii. Country of Origin of Goods iv. Supplier's Name and Address v. Consignee details vi. Packing list reference number
9.	**Delivery and Documents:** Delivery of the goods should be made within a maximum of **12 weeks** from the date of placement of purchase order and the opening of LC. Within 24 hours of shipment, the supplier shall notify the purchaser and the insurance company by cable/telex/fax/e mail the full details of the shipment including contract number, railway receipt number/ AAP etc. and date, description of goods, quantity, name of the consignee, invoice etc. The supplier shall mail the following documents to the purchaser with a copy to the insurance company: 1. 4 Copies of the Supplier invoice showing contract number, goods' description, quantity 2. unit price, total amount; 3. Insurance Certificate if applicable; 4. Manufacturer's/Supplier's warranty certificate; 5. Inspection Certificate issued by the nominated inspection agency, if any 6. Supplier's factory inspection report; and 7. Certificate of Origin (if possible by the beneficiary); 8. Two copies of the packing list identifying the contents of each package. 9. The above documents should be received by the Purchaser before arrival of the Goods (except where the Goods have been delivered directly to the Consignee with all documents) and, if not received, the Supplier will be responsible for any consequent expenses.
10.	**Delayed delivery:** If the delivery is not made within the due date for any reason, the Committee will have the right to impose penalty 1% per week and the maximum deduction is 10% of the contract value / price.
11.	**Prices**: The price should be quoted in net per unit (after breakup) and must include all packing and delivery charges. The offer/bid should be exclusive of taxes and duties, which will be paid by the purchaser as applicable. However the percentage of taxes & duties shall be clearly indicated. The price should be quoted without custom duty and excise duty, since IIT Delhi is exempted from payment of Excise Duty and is eligible for concessional rate of custom duty. Necessary certificate will be issued on demand. **In case of import supply the price should be quoted on FOB Basis only.** Under special circumstances (eg. perishable chemicals), when the item is imported on CIF/CIP, please indicate CIF/CIP charges separately upto IIT Delhi indicating the mode of shipment. IIT Delhi will make necessary arrangements for the clearance of imported goods at the Airport/Seaport. Hence the price should not include the above charges.

12.	**Notices:** For the purpose of all notices, the following shall be the address of the Purchaser and Supplier. **Purchaser:** Dr. R. Alagirusamy Department of Textile Technology Indian Institute of Technology HauzKhas, New Delhi - 110016. **Supplier:** (To be filled in by the supplier) **(All supplier's should submit its supplies information as per Annexure-II).** _____ _____
13.	**Progress of Supply**: Wherever applicable, supplier shall regularly intimate progress of supply, in writing, to the Purchaser as under: 1. Quantity offered for inspection and date; 2. Quantity accepted/rejected by inspecting agency and date; 3. Quantity dispatched/delivered to consignees and date; 4. Quantity where incidental services have been satisfactorily completed with date; 5. Quantity where rectification/repair/replacement effected/completed on receipt of any communication from consignee/Purchaser with date; 6. Date of completion of entire Contract including incidental services, if any; and **7.** Date of receipt of entire payments under the Contract (In case of stage-wise inspection, details required may also be specified).
14.	**Inspection and Tests:** Inspection and tests prior to shipment of Goods and at final acceptance are as follows: • After the goods are manufactured and assembled, inspection and testing of the goods shall be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications attached to the purchase order. Manufacturer's test certificate with data sheet shall be issued to this effect and submitted along with the delivery documents. The purchaser shall be present at the supplier's premises during such inspection and testing if need is felt. The location where the inspection is required to be conducted should be clearly indicated. The supplier shall inform the purchaser about the site preparation, if any, needed for installation of the goods at the purchaser's site at the time of submission of order acceptance. • The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation and ascertaining conformity with the ordered specifications and quality. There shall not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier shall maintain necessary log in respect of the result of the test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified. • In the event of the ordered item failing to pass the acceptance test, a period not exceeding one weeks will be given to rectify the defects and clear the acceptance test, failing which the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser. • Successful conduct and conclusion of the acceptance test for the installed goods and equipment shall also be the responsibility and at the cost of the Supplier.
15.	**Resolution of Disputes**: The dispute resolution mechanism to be applied pursuant shall be as follows: • In case of Dispute or difference arising between the Purchaser and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under

	and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings. The dispute shall be referred to the Director, Indian Institute of Technology (IIT) Delhi and if he is unable or unwilling to act, to the sole arbitration of some other person appointed by him willing to act as such Arbitrator. The award of the arbitrator so appointed shall be final, conclusive and binding on all parties to this order. • In the case of a dispute between the purchaser and a Foreign Supplier, the dispute shall be settled by arbitration in accordance with provision of sub-clause (a) above. But if this is not acceptable to the supplier then the dispute shall be settled in accordance with provisions of UNCITRAL (United Nations Commission on International Trade Law) Arbitration Rules. • The venue of the arbitration shall be the place from where the order is issued.
16.	**Applicable Law:** The place of jurisdiction would be New Delhi (Delhi) INDIA.
17.	**Right to Use Defective Goods** If after delivery, acceptance and installation and within the guarantee and warranty period, the operation or use of the goods proves to be unsatisfactory, the Purchaser shall have the right to continue to operate or use such goods until rectifications of defects, errors or omissions by repair or by partial or complete replacement is made without interfering with the Purchaser's operation.
18.	**Supplier Integrity** The Supplier is responsible for and obliged to conduct all contracted activities in accordance with the Contract using state of the art methods and economic principles and exercising all means available to achieve the performance specified in the contract.
19.	**Training** The Supplier is required to provide training on training to the designated Purchaser's technical and end user personnel to enable them to effectively operate the total equipment.
20.	**Installation & Demonstration** The supplier is required to done the installation and demonstration of the equipment within one month of the arrival of materials at the IITD site of installation, otherwise the penalty clause will be the same as per the supply of materials.
21.	**Insurance:** For delivery of goods at the purchaser's premises, the insurance shall be obtained by the Supplier in an amount equal to 110% of the value of the goods from "warehouse to warehouse" (final destinations) on "All Risks" basis including War Risks and Strikes. The insurance shall be valid for a period of not less than 3 months after installation and commissioning. **In case of orders placed on FOB/FCA basis, the purchaser shall arrange Insurance. If orders placed on CIF/CIP basis, the insurance should be up to IIT Delhi.**
22.	**Incidental services:** The incidental services also include: • Furnishing of 01 set of detailed operations & maintenance manual. • Arranging the shifting/moving of the item to their location of final installation within IITD premises at the cost of Supplier through their Indian representatives.
23.	**Warranty**: 1. Warranty period shall be **36 months** from date of installation of Goods at the IITD site of installation. The Supplier shall, in addition, comply with the performance and/or consumption guarantees specified under the contract. If for reasons attributable to the Supplier, these guarantees are not attained in whole or in part, the Supplier shall at its discretion make such changes, modifications, and/or additions to the Goods or any part thereof as may be necessary in order to attain the contractual guarantees specified in the Contract at its own cost and expense and to carry out further performance tests. **The warranty should be comprehensive on site.** **Note:** <u>If a different period of warranty has been specified in the 'Technical Specifications' then the period mentioned above shall stand modified to that extent</u>**.** 2. The Purchaser shall promptly notify the Supplier in writing of any claims arising under this warranty. Upon receipt of such notice, the Supplier shall immediately within in 02 days arrange to repair or replace the defective goods or parts thereof free of cost at the ultimate destination. The

	Supplier shall take over the replaced parts/goods at the time of their replacement. No claim whatsoever shall lie on the Purchaser for the replaced parts/goods thereafter. The period for correction of defects in the warranty period is 02 days. If the supplier having been notified fails to remedy the defects within 02 days, the purchaser may proceed to take such remedial action as may be necessary, at the supplier's risk and expenses and without prejudice to any other rights, which the purchaser may have against the supplier under the contract.
24.	**Governing Language** The contract shall be written in English language. English language version of the Contract shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the same language.
25.	**Applicable Law** The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction.
26.	**Notices** • Any notice given by one party to the other pursuant to this contract/order shall be sent to the other party in writing or by cable, telex, FAX or e mail and confirmed in writing to the other party's address. • A notice shall be effective when delivered or on the notice's effective date, whichever is later.
27.	**Taxes** Suppliers shall be entirely responsible for all taxes, duties, license fees, octroi, road permits, etc., incurred until delivery of the contracted Goods to the Purchaser. However, VAT in respect of the transaction between the Purchaser and the Supplier shall be payable extra, if so stipulated in the order.
28.	**Duties** IIT Delhi is exempted from paying custom duty under notification No.51/96 (partially orfull) and necessary "Custom Duty Exemption Certificate" can be issued after providing following information and Custom Duty Exemption Certificate will be issued to the shipment in the name of the Institute, no certificate will be issued to third party: a) Shipping details i.e. Master Airway Bill No. and House Airway No. (if exists) b) Forwarder details i.e. Name, Contact No., etc. IIT Delhi is exempted from paying Excise Duty and necessary Excise Duty Exemption Certificate will be provided for which following information are required. a) Quotation with details of Basic Price, Rate, Tax & Amount on which ED is applicable b) Supply Order Copy c) Proforma-Invoice Copy.
29.	**Agency Commission**: Agency commission if any will be paid to the Indian agent in Rupees on receipt of the equipment and after satisfactory installation. Agency Commission will not be paid in foreign currency under any circumstances. The details should be explicitly shown in Tender even in case of Nil commission. The tenderer should indicate the percentage of agency commission to be paid to the Indian agent.
30.	**Payment**: Payment will be made through irrevocable Letter of Credit (LC). Letter of Credit (LC) will be established in the favour of foreign Supplier after the submission of performance security. The letter of credit (LC) will be established on the exchange rates as applicable on the date of establishment. • For Indigenous supplies, 100% payment shall be made by the Purchaser against delivery, inspection, successful installation, commissioning and acceptance of the equipment at IITD in good condition and to the entire satisfaction of the Purchaser and on production of unconditional performance bank guarantee as specified in Clause 9 of tender terms and conditions.

	• For Imports, LC will be opened for 100% FOB/CIF value. **90% of the LC** amount shall be released on presentation of complete and clear shipping documents and **10% of the LC** amount shall be released after the installation and demonstration of the equipment at the INST site of installation in faultless working condition for period of 60 days from the date of the satisfactory installation. • Indian Agency commission (IAC), if any shall be paid after satisfactory installation & commissioning of the goods at the destination at the exchange rate prevailing on the date of negotiation of LC documents, subject to DGS&D registration for restricted items. • All the bank charges within India will be borne by the Institute and outside India will be borne by the Supplier.
31.	**User list:** Brochure detailing technical specifications and performance, list of industrial and educational establishments where the items enquired have been supplied must be provided.
32.	**Manuals and Drawings** • Before the goods and equipment are taken over by the Purchaser, the Supplier shall supply operation and maintenance manuals. These shall be in such details as will enable the Purchaser to operate, maintain, adjust and repair all parts of the works as stated in the specifications. • The Manuals shall be in the ruling language (English) in such form and numbers as stated in the contract. • Unless and otherwise agreed, the goods equipment shall not be considered to be completed for the purposes of taking over until such manuals and drawing have been supplied to the Purchaser.
33.	**Application Specialist**: The Tenderer should mention in the Techno-Commercial bid the availability and names of Application Specialist and Service Engineers in the nearest regional office.
34.	**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 where 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.
35.	**Installation**: The equipment or machinery has to be installed or commissioned by the successful bidder within 30 days from the date of receipt of the item at IITD. In case of any mishappening/damage to equipment and supplies during the carriage of supplies from the origin of equipment to the installation site, the supplier has to replace it with new equipment/supplies immediately at his own risk. Supplier will settle his claim with the insurance company as per his convenience. IITD will not be liable to any type of losses in any form.
36.	**Spare Parts** The Supplier may be required to provide any or all of the following materials, notifications, and information pertaining to spare parts manufactured or distributed by the Supplier: i. Such spare parts as the Purchaser may elect to purchase from the Supplier, providing that this election shall not relieve the Supplier of any warranty obligations under the Contract; and ii. In the event of termination of production of the spare parts: iii. Advance notification to the Purchaser of the pending termination, in sufficient time to permit the Purchaser to procure needed requirements; and iv. Following such termination, furnishing at no cost to the Purchaser, the blueprints, drawings and specifications of the spare parts, if requested.

	Supplier shall carry sufficient inventories to assure ex-stock supply of consumable spares for the Goods, such as gaskets, plugs, washers, belts etc. Other spare parts and components shall be supplied as promptly as possible but in any case within six months of placement of order.
37.	**Defective Equipment**: If any of the equipment supplied by the Tenderer is found to be substandard, refurbished, un-merchantable or not in accordance with the description/specification or otherwise faulty, the committee will have the right to reject the equipment or its part. The prices of such equipment shall be refunded by the Tenderer with 18% interest if such payments for such equipment have already been made. All damaged or unapproved goods shall be returned at suppliers cost and risk and the incidental expenses incurred thereon shall be recovered from the supplier. Defective part in equipment, if found before installation and/or during warranty period, shall be replaced within 45 days on receipt of the intimation from this office at the cost and risk of supplier including all other charges. In case supplier fails to replace above item as per above terms & conditions, IIT Delhi may consider "Banning" the supplier.
38.	**Termination for Default** The Purchaser may, without prejudice to any other remedy for breach of contract, by written notice of default sent to the Supplier, terminate the Contract in whole or part: i. If the Supplier fails to deliver any or all of the Goods within the period(s) specified in the order, or within any extension thereof granted by the Purchaser; or ii If the Supplier fails to perform any other obligation(s) under the Contract. iii If the Supplier, in the judgment of the Purchaser has engaged in corrupt or fraudulent practices in competing for or in executing the Contract. • For the purpose of this Clause: i. "**Corrupt practice**" means the offering, giving, receiving or soliciting of anything of value to influence the action of a public official in the procurement process or in contract execution. ii. "**Fraudulent practice**" means a misrepresentation of facts in order to influence a procurement process or the execution of a contract to the detriment of the Borrower, and includes collusive practice among Bidders (prior to or after bid submission) designed to establish bid prices at artificial non-competitive levels and to deprive the Borrower of the benefits of free and open competition;'" • In the event the Purchaser terminates the Contract in whole or in part, the Purchaser may procure, upon such terms and in such manner, as it deems appropriate, Goods or Services similar to those undelivered, and the Supplier shall be liable to the Purchaser for any excess costs for such similar Goods or Services. However, the Supplier shall continue the performance of the Contract to the extent not terminated.
39.	**Warranty/Guarantee**: The warranty period should be clearly mentioned. The maintenance charges (AMC) under different schemes after the expiry of the warranty should also be mentioned. The tender must be quoted with three **(03) years** on-site comprehensive warranty/guarantee which will commence from the date of the satisfactory installation/commissioning of the equipment against the defect of any manufacturing, workmanship and poor quality of the components. After the warranty period is over, Annual Maintenance Contract (AMC)/Comprehensive Maintenance Contract (CMC) up to next two years should be started. The AMC/CMC charges will not be included in computing the total cost of the equipment.
40.	**Downtime:** During the warranty period not more than 5% downtime will be permissible. For every day exceeding permissible downtime, penalty of 1/365 of the 5% FOB value will be imposed. Downtime will be counted from the date and time of the filing of complaint with in the business hours.
41.	**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 one week at the supplier's cost.
42.	**Disputes and Jurisdiction**: Any legal disputes arising out of any breach of contract pertaining to this tender shall be settled in the court of competent jurisdiction located within New Delhi.
43.	**Compliancy certificate**: This certificate must be provided indicating conformity to the technical specifications.
44.	**Acknowledgement**: It is hereby acknowledged that we have gone through all the conditions mentioned above and we agree to abide by them.

ANNEXURE-I

COMPLIANCE SHEET

TECHNICAL SPECIFICATION:

S. No.	Technical Specifications	Compliance Y/N
1	The testing instrument shall consist of a +/-100kN capacity Load frame, a Load weighing system, and Software for machine control, data acquisition and data manipulation. All of these components must be fully integrated and supported by the vendor.	
2	The dual column-loading floor Standing Frame should be capable of tension, compression, flexure, shear, and reverse stress testing. It should include a digital closed loop command and feedback motion control system with a high performance DC permanent magnet brushed servo motor.	
3	The Axial Stiffness should be atleast 250 kN/mm. For lateral stiffness and robustness purposes, Guidance columns should be there.	
4	The frame shall include dual level mechanical limit switches on the front of the frame that prevent the crosshead from traveling too high or too low. The first level switch should stop the crosshead and the second level limit switch should cut the power to the frame.	
5	The frame shall include adjustable leveling feet and an integrated graduated measurement scale.	
6	The vertical Test Space(distance between the top surface of the base platen to the bottom surface of the moving crosshead) shall be at least 1400 mm for load cells, grips and fixtures.	
7	The total height of the load frame shall be a maximum of 2200mm.	
8	The maximum load capacity shall be at least 100kN.	
9	The speed range should be 0.00005 mm to 1000 mm per minute and shall be settable continuously. The return speed should be at least 1000 mm/min.	
10	The steady state speed accuracy shall be +/-0.1%, of set speed measured over full speed range.	
11	For safety purposes, the frame shall incorporate an auto-frame standby mode that automatically stops the frame when the transducer, interface, or computer is disconnected or shutdown.	
12	The frame shall include integrated T-slots on the front and back of both column covers for easy mounting of accessories.	
13	Position Measurement Accuracy should be ±0.01 mm or 0.05% of displacement (whichever is greater)	
14	The frame should essentially include a Control Panel with Live Display, Soft keys, and Specimen Protect for enhanced usability and productivity.	
15	This operator panel should be used to run and stop tests at the frame as opposed to through the PC and software.	
16	The system should have automatic control over the crosshead movement in response to the excess load than the pre-defined load in software to prevent overloading of specimens, fixtures, and load cells during gripping and adjustments.	
17	The operator panel shall have up to 4 live displays that are in synch with the testing software live displays as well as 4 shortcut keys that can be used to carry out functions such as balancing load, strain or marking data.	
18	The operator panel shall also have a fine position wheel that can be used to move the frame crosshead in small increments to aid in the mounting and removal of specimens and fixtures.	

19	The position control resolution of the system should be less than 0.009 micro meters.	
20	The system should be operated with Single Phase AC voltage and power consumption should not exceed 3.5 KVA.	
21	The system should be supplied with a +/-100kN capacity load cell mounted under its moving crosshead.	
22	Load cell and extensometer transducers should include self-identification (recognition) electronics in the connector directly attached to these transducers which automates the calibration of these devices. System should allow for manual calibration of third party transducers also	
23	The load weighing system accuracy shall be within +/-0.5% of reading down to 1/1000th of the load cell capacity for load cells 500N or higher and System Accuracy should be 0.4% from full scale down to 1/100th of the load cell capacity. Digital signal processing of the load signal should be used to achieve this accuracy throughout the entire range without affecting the resolution of the data by having the operator, software, or electronics to perform manual or automated ranging	
24	For safety purposes, the maximum load for a test should be set by identification electronics located in the connector directly attached to the load cell.	
25	The Load cell should be able to withstand up to 300% of the rated capacity without mechanical damage and up to 150% without zero shift.	
26	The computer shall communicate to the frame though an Ethernet 10/100 Mb/sec interface to give a high data transmission rate from system to PC.	
27	The software must have multi levels of user access based on his or her login name and password.	
28	The testing software must be able to perform tensile, compression, flexure, peel, tear, friction and simple and Complex cyclic tests and include an appropriate calculation list for each type of test.	
29	Digital displays on the computer monitor should show live load, displacement, and optional strain values engineering units that can be selected to be Metric, S.I., U.S. customary. Up to 4 live display windows shall be available for display simultaneously.	
30	The control software shall include set-up of the following: test speed, limits on all channels, auto calibration and balancing of all transducers, specimen dimensions, and results tables at a minimum.	
31	The control software shall include set-up of the following: test speed, limits on all channels, auto calibration and balancing of all transducers, specimen dimensions, and results tables at a minimum.	
32	An unlimited number of test methods and shall be available for storage and retrieval.	
33	Provision for extra unlimited no. of live displays on screen while testing is a must.	
34	The software shall include an integrated context sensitive help and reference system running always in the backend during the software ON time.	
35	The software shall be user friendly and allow the user to be prompted during testing and provide a mechanism for the user to select images or video clips to be included in the prompt area when running tests.	
36	An Option in software is essentially required for video recording of a test with link to video file with the Data acquired. This feature should allow for the connection of a webcam or other video capture device, giving operator the ability to experience point-by-point playback of the specimen throughout the test.	
37	This feature should allow for the connection of a webcam or other video capture device, giving operators the ability to experience point-by-point playback of the specimen throughout the test.	

38	The software should have a provision of Raw Data Viewer on the main screen to view the raw data during the test to examine every data point for any measurement.	
39	A Software Module should be supplied with the main software that could help in searching test specimens based on a specimen property, test parameter, or a calculation result. Using this software module Testing Software automatically exports various test parameters and results to a database at the end of every sample.	
40	The Viewer of this software should provide an intuitive interface to search, display, and analyze results over time, and across multiple samples and test frames.	
41	For better analysis of the test, using this software visualization capabilities user should be able to plot the data gathered for specimens from different batches.	
42	Run time screen must be capable of displaying both the real time graph and the calculated results of multiple specimens simultaneously.	
43	The control software shall be capable of acquiring data and transferring it to PC at 2,500 Hz rate across load, displacement, and up to two optional strain channels.	
44	Data shall be acquired at a user selectable, continuous rate without gaps.	
45	Specimen geometry's for each specimen shall include most common geometries.	
46	A real time X-Y plot of two selected variables should be displayed. The variable for each axis will be load, stress, extension, and optional strain as selected by the user. Other graph features will include manual and automatic scaling, legend symbols, to distinguish individual test curves, horizontal and vertical offset between test curves, and selectable number of test curves per display.	
47	Test control software must be able to automatically store raw data or calculated results in an Excel format.	
48	The software shall offer the multiple user inputs.	
49	The software should have the MS-word, HTML, PDF reporting formats.	
50	The software must include the capability to define correction factors such as machine compliance, slack, pretension, load and gauge length.	
51	The ability to re-analyze past test data using different calculations must be provided.	
52	The software shall allow the user to define the company logo as a part of the method.	
53	Factory trained service engineers based in Delhi must be available for additional training or warranty service.	
54	The supplier shall install the system and provide basic on-site training for a minimum of one day.	
55	Vendor should provide the Calibration of the system up to 100 kN Load with ASTM or ISO standards	
	TENSILE GRIP SPECIFCATIONS	
1	The grip capacity should be 100 kN and it should be based on Pneumatic Wedge Action Principle.	
2	The grips should have easy front loading of flat specimens up to 40 mm thickness and round specimens up to 50 mm Diameter.	
3	The grips should incorporate Self-tightening wedge design that eliminates slippage under loads.	
4	The grips should include Specimen centering device that insures accurate alignment	
5	It should be able to withstand a temperature ranging from 5 Degree C upto 65 degree C.	
6	Jaw faces for flat specimens with 40 mm Thickness and round specimen 50 mm Diameter should be provided.	
	TENSILE GRIPS FOR METALS	
1	The grip capacity should be 100 kN.	

2	To eliminate specimen slippage, the Grips should be based on Self Tightening Mechanical Wedge Action Principle.	
3	The Grips should be able to withstand a temperature ranging from -70 Deg C to 250 Deg C.	
4	Appropriate jaw faces should be provided	
5	Fixed faces and Moving Body during specimen loading.	
6	All Jaw Faces should be hardened to 60 RC to 65 RC.	
	FLEXURE FIXTURE SPECIFICATIONS	
1	The Flexure Fixture should have a capacity of 100 kN.	
2	It should conform to ASTM/ISO and DIN Standards.	
3	Lower Rollers should have an adjustable span distance of upto 250 mm.	
4	It should be able to withstand a temperature range from –100 degrees C upto +350 degrees C.	
5	It should be able to handle Type of loading: Static flexure, cyclic flexure tests.	
	COMPRESSION PLATENS	
1	Compression platens with Dia 150 mm should be provided.	
2	The Capacity of compression platens should be 100 kN	
3	The temperature range should be -70 deg C to +300 Deg C.	
4	Provision for attachment of optional displacement transducers should be there.	
5	Hardness should be 55-65 HRC	
6	Overall height should not be more than 75mm	
	NON CONTACTING VIDEO EXTENSOMETER	
1	Accurate Non Contacting Strain Measurement Extensometer Suitable for Ambient, High/Low Temperatures.	
2	The Extensometer Should be able to be used for advance strain measurement with Digital Image Correlation.	
3	It Should Utilize the real-time 450 Hz or better data rate to capture images of quickly changing measurement events	
4	It Should be able to Record images of the test for synchronized playback or for post-analysis of tests with Digital Image Correlation	
5	It should be able to measure Modulus and Strain to Failure for any Material Including Metals, Composites, Textiles, Plastics, Films, Elastomers etc..	
6	It Should be able to accommodate variable Gauge lengths	
7	It should be able to be used on any system in the lab that accepts +/- 10 V input regardless of age of system or manufacturer.	
8	It should incorporate the technology that reduces errors from thermal and lighting fluctuations that are common in most labs	
9	Focal Length of the Lens should be defined and Field of view should be more than 400mm.	
10	Data Rate of the extensometer should be at least 450 Hz or better.	
11	Transverse Measurement option should be offered with an FOV of 70 mm or better.	
12	Axial Accuracy @ FOV 200mm: ±1 μm	
13	Axial Resolution @ FOV 200mm: 0.5 μm	
14	Axial Max following Rate: Uniform @ 2500 mm/min	
15	It should be able to measure strains for both static and dynamic tests for a Field of view (FOV) of 200 mm or more with a Resolution of better than 1um & shall be upgradable to Digital Image Correlation (DIC).	
	DIGITAL IMAGE CORRELATION	
1	Digital Image Correlation Software for comparison of images of a tested specimen's surface to generate full-field strain and displacement maps.	

2	It should feature the built-in synchronization of DIC images with test data collected, including load, position, and more	
3	It should visualize strain and displacement over the full surface of a two dimensional object	
4	The Displays should include axial strain, Axial Displacement , Transverse Strain , Transverse Displacement, Shear Strain, Maximum Normal Strain, and Minimum Normal Strain.	
5	It should have the Capability to analyze the specimens strain behavior after the test using this DIC replay software.	
6	User should be able to view Material's testing Phenomenon such as discontinuous yielding, localized necking etc..	
7	User should be able to check for standards compliance by identifying localized strain that falls outside of the standard gauge length or clip-on extensometer.	
8	User should be able to place, and size virtual extensometers or virtual strain gauges anywhere on the processed region.	
9	User should be able to define a region of interest with simple click and drag shape tools and calculate strain and displacement maps over the entire sequence or from a region of interest.	
10	The software should consume images and calibration data saved by Video Extensometer and work in a post-processing mode for analysis of specimens.	
	V-NOTCHED BEAM SHEAR FIXTURE (IOSIPESCU SHEAR)	
1	The V-Notched Beam Shear fixture should comply to ASTM D5379.	
2	It should have high strength corrosion resistant stainless steel construction.	
3	For Precision alignment and low friction, the cross roller bearings should be utilized	
4	It should be able to withstand a temperature range of -70 to 250 Deg C.	
5	Design of the fixture should include arrangement to avoid off-Axis Forces and Non-Shear loads.	
	INTERLAMINAR SHEAR FIXTURE.	
1	Inter-laminar Shear Strength(ILSS) testing Fixture to be provided .	
2	Capacity Load Capacity should be 10 kN.	
3	It should be able to withstand a temperature of -70 Deg C to 250 Deg C.	
4	Maximum Span of the base 210 mm.	
5	Upper Anvil Hardness should be at least 60 HRC.	

I have also enclosed all relevant documents in support of my claims, (as above) in the following pages.

Signature of Bidder

Name : _____

Designation : _____

Organization Name : _____

Contact No. : _____

ANNEXURE-II

<< Organization Letter Head >>

DECLARATION SHEET

We, _____ hereby certify that all the information and data furnished by our organization with regard to this tender specification are true and complete to the best of our knowledge. I have gone through the specification, conditions and stipulations in details and agree to comply with the requirements and intent of specification.

This is certified that our organization has been authorized (Copy attached) by the OEM to participate in Tender. We, further certified that our organization meets all the conditions of eligibility criteria laid down in this tender document.

The prices quoted in the financial bids are subsidized due to academic discount given to IIT Delhi.

We, further specifically certify that our organization has not been Black Listed/De Listed or put to any Holiday by any Institutional Agency/ Govt. Department/ Public Sector Undertaking in the last three years.	NAME & ADDRESS OF THE Vendor/ Manufacturer / Agent
1 Phone	
2 Fax	
3 E-mail	
4 Contact Person Name	
5 Mobile Number	
6 TIN Number	
7 PAN Number	
(In case of on-line payment of Tender Fees) 8UTR No. (For Tender Fee)	
(In case of on-line payment of EMD) 9 UTR No. (For EMD)	

(Signature of the Tenderer)

Name :

Seal of the Company

Annexure-III

List of Govt. Organization/Deptt.

List of Government Organizations for whom the Bidder has undertaken such work during last three years (must be supported with work orders)		
Name of the organization	**Name of Contact Person**	**Contact No.**

Signature of Bidder

Name : _____

Designation : _____

Organization Name : _____

Contact No. : _____

Bid Submission

i. Online Bid Submission :

The Online bids (complete in all respect) must be uploaded onlinein**Two** Envelops as explained below :-

Envelope – 1 (Following documents to be provided as single PDF file)			
Sl. No.	**Documents**	**Content**	**File Types**
1.	Technical Bid	Compliance Sheet as per Annexure – I	.PDF
2.		Organization Declaration Sheet as per Annexure - II	.PDF
3.		List of organizations/ clients where the same products have been supplied (in last two years) along with their contact number(s). (Annexure-III)	.PDF
4.		Technical supporting documents in support of all claims made at Annexure-I (Annexure-IV)	.PDF
Envelope – 2			
Sl. No.	TYPES	Content	
1.	Financial Bid	Price bid should be submitted in PDF format.	.PDF

<Department/Centre Name>
Indian Institute of Technology Delhi
HauzKhas, New Delhi-110016

Date :XX/XX/XXXX

Subject: Purchase of <Item>

S. No.	Currency	Description of Item & Specification	Qty. in Units	Unit Price (a)	Agency Commission (b)	Discount (c)	Ex-works price (d=a+b-c)	Packing + Handling + DOC + Inland Frieght (e)	FOB Price (f=d+e)	Insurance + Frieght (g)	CIF Price (f+g)
1											

For indigenous items please quote as per following format.

S. No.	Description of Item & Specification	Qty. in Units	Unit Price in Rs.	Excise Duty %	CST/VAT%	Octroi%	Total Price in Rs.
1.							
2.							