

Domestic tender for the procurement of a Universal Testing Machine Integrated with a high-temperature furnace

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Section 1 - Bid Schedule

1	Tender No	CST/IISc/UTMF-2025
2	Tender Date	17.07.2025
3	Item Description	Universal Testing Machine integrated with a high-temperature furnace
4	Tender Type	Two-bid system (i) Technical Bid (Part A) (ii) Commercial Bid (Part B)
5	Place of tender submission	Prof. Souradeep Gupta Room 209 Centre for Sustainable Technologies, Indian Institute of Science, Bangalore 560012
6	Last Date & Time for submission of tender	07.08.2025 by 4 pm (3 weeks from the tender date)
7	For further clarification	Prof. Souradeep Gupta Room 209 Centre for Sustainable Technologies, Indian Institute of Science, Bangalore 560012 Email: souradeep@iisc.ac.in

Section 2 – Eligibility Criteria

Prequalification criteria:

1. The Bidder's firm should have existed for a minimum of 8 years. (Enclose Company Registration Certificate)
2. The bidder must have supplied similar equipment to the Indian Institute of Technology (IIT) or Indian Institute of Science (IISc) in the last two (2) years. User testimonials, contact details, and proof of supply (PO or letter from the user) shall be furnished. IISc reserves the right to independently verify the machine performance with the users, where the bidder has previously supplied.
3. The Bidder should belong to either class 1 or class 2 suppliers, distinguished by their "local content" as defined by recent edits to GFR. They should mention clearly which class they belong to in the cover letter
 - a) Class 1 supplier: Goods and services should have local content of equal to or more than 50%.
 - b) Class 2 supplier: Goods and services should have local content of equal to or more than 20 % and less than 50%.
4. Purchase preference as defined by the recent edits to GFR (within the "margin of purchase preference") will be given to the Class-1 supplier.
5. The bidder should sign and submit the declaration for Acceptance of Terms and Conditions as per Annexure 4.
6. The Bidder must not be blacklisted/banned/suspended or have a record of any service-related dispute with any organization in India or elsewhere. A declaration to this effect has to be given as per Annexure 3.

Section 3 – Terms and Conditions

A) Submission of Tender:

1. All documentation in the tender should be in English.
2. Tender should be submitted in two envelopes (two-bid system).
 - a. Technical Bid (Part-A) – Technical bid consisting of all technical details and checklist for conformance to technical specifications. The proposal should contain a compliance table with **4 columns** in addition to the ones in the technical requirements table that has been included with this RFQ below. The compliance table should include all the items in the same order and format. The first column should describe your compliance in a “Yes” or “No” response. If “No” the second column should state the extent of deviation. The “third” column should state the reasons for the deviation, if any. The fourth column can be used to compare your tool with that of your competitors or provide details as requested in the technical requirements table below. (Suppliers who include any indication of prices in the technical bid will be automatically disqualified).
 - b. Commercial Bid (Part-B) – Indicating item-wise price for the items mentioned in the technical bid, as per the format of quotation provided in the tender, and other commercial terms and conditions.
 - c. The technical proposal should contain a **technical compliance table with 4 columns**. The first column must list the technical requirements and other requirements, in the order that they are mentioned below. The second column should provide specifications of the instrument against the requirement (please provide quantitative responses wherever possible). The third column should describe your compliance with a “Yes” or “No” only. Ensure that the entries in column 2 and column 3 are consistent. The fourth column can contain additional remarks. You can use this opportunity to highlight technical features, qualify responses of previous columns, or provide additional details.
3. The technical bid and price bid should each be placed in separate sealed covers, superscripting on both the envelopes the tender no. and the due date. Both these sealed covers are to be placed in a bigger cover which should also be sealed and duly superscripted with the Tender No, Tender Description & Due Date.
4. The SEALED COVER superscribing tender number / due date & should reach Prof. **Souradeep Gupta, Room 209, Centre for Sustainable Technologies (next to Sri Circle Maramma Temple Gate), Indian Institute of Science, Bangalore – 560012**, India on or before the due date mentioned in the tender notice. In case the due date happens to be holiday, the tender will be accepted and opened on the next working day. If the quotation cover is not sealed, it will be rejected.
5. All queries are to be addressed to the person identified in “Section 1 – Bid Schedule” of the tender notice.
6. GST/other taxes, levies etc., are to be indicated separately. The BIDDER should mention GST Registration and PAN in the tender document (Indian Bidders only).
7. If the price is not quoted in the Commercial Bid as per the format provided in the tender document the bid is liable to be rejected.
8. The Institute reserves the right to accept or reject any bid and to annul the bidding process and reject all bids at any time prior to the award of contract, without there by incurring any liability to the affected bidder or bidders or any obligation to inform the

- affected bidder or bidders.
9. Incomplete bids will be summarily rejected.
 10. The quote should come only from an Indian Original Equipment Manufacturer (OEM) or their Indian authorized distributor.
 11. The quotations should be on FOR-IISc Bangalore basis in INR only.
 12. Bidders offering imported products will fall under the category of non-local suppliers.

They cannot claim themselves as Class-1 local suppliers/Class-2 local suppliers by claiming services such as transportation, insurance, installation, commissioning, training, and other sales service support like AMC/CMC, etc., as local value addition.

13. MSMEs can seek an exemption to some qualification criteria. IISc follows GFR2017 for such details

B) Cancellation of Tender:

Notwithstanding anything specified in this tender document, IISc Bangalore, in its sole discretion, unconditionally and without having to assign any reason, reserves the rights:

- a. To accept OR reject the lowest tender or any other tender or all the tenders.
- b. To accept any tender in full or in part.
- c. To reject the tender, offer not confirming to the tender terms.

C) Validity of the Offer:

The offer shall be valid 90 Days from the date of opening of the commercial bid.

D) Evaluation of Offer:

1. The technical bid (Part A) will be opened first and evaluated.
2. Bidders meeting the required eligibility criteria as stated in Section 2 of this document shall only be considered for the Commercial Bid (Part B) opening. Further, agencies not furnishing the documentary evidence as required will not be considered.
3. Pre-qualification of the bidders shall not imply final acceptance of the Commercial Bid. The agency may be rejected at any point during technical evaluation or during commercial evaluation. The decision in regard to acceptance and / or rejection of any offer in part or full shall be the sole discretion of IISc Bangalore, and the decision in this regard shall be binding on the bidders.
4. The award of the contract will be subject to acceptance of the terms and conditions stated in this tender.
5. Any offer that deviates from the vital conditions (as illustrated below) of the tender is liable to be rejected:
 - a. Non-submission of complete offers.
 - b. Receipt of bids after the due date and time, and or by email/fax (unless specified otherwise).
 - c. Receipt of bids in open conditions.
6. In case any BIDDER is silent on any clauses mentioned in these tender documents, IISc Bangalore shall construe that the BIDDER had accepted the clauses as of the tender and no further claim will be entertained.
7. No revision in the terms and conditions quoted in the offer will be entertained after the last date and time fixed for receipt of tenders.
8. Lowest bid will be calculated based on the total price of all items tendered for Basic equipment along with accessories selected for installation, operation, preprocessing and post-processing, optional items, recommended spares, warranty, annual maintenance contract.

E) Pre-requisites:

The bidder will provide the prerequisite installation requirement of the equipment along with the technical bid.

F) Warranty:

The complete system is to be under warranty period of minimum of **4 years** including free supply of consumables, spare parts, and data analysis software from the date of functional installation. If the instrument is found to be defective, it has to be replaced or **rectified at the cost of the bidder within 7 days** from the date of receipt of written communications from IISc, Bangalore. If there is any delay in replacement or rectification, the warranty period should be correspondingly extended.

G) Annual Maintenance Contract:

An annual maintenance contract (AMC) for 4 years post-warranty should be provided on completion of the warranty period. All parts/spares of the supplied machine must be made available for at least 10 years from the date of the machine installation. The AMC rate must be mentioned as an optional item in the financial bid.

H) Purchase Order:

1. The order will be placed on the bidder whose bid is accepted by IISc based on the terms & conditions mentioned in the tender document.
2. The quantity of the items in the tender is only indicative. IISc, Bangalore reserves the right to increase /decrease the quantity of the items depending on the requirement.
3. If the quality of the product and service provided is not found satisfactory, IISc, Bangalore, reserves the right to cancel or amend the contract.

I) Delivery, Installation, and Training:

The bidder shall provide the lead time to delivery, installation and made functional at IISc, Bangalore from the date of receipt of the purchase order. **Shipment of the machine, delivery, unloading, and installation are within the scope of the successful bidder.** The system should be **delivered, installed, and made functional within 75 days (2.5 months) from the date of receipt of the purchase order.** The supply of the items will be considered as effective only on satisfactory installation and inspection of the system and inspection of all the items and features/capabilities tested by the IISc, Bangalore. After successful installation and inspection, the date of taking over of the entire system by the IISc, Bangalore, shall be taken as the start of the warranty period. No partial shipment is allowed.

The bidder should also arrange for technical training for the local facility technologists and users.

J) Payment Terms:

The payment will be through bank transfer after successful delivery, installation and training.

K) Statutory Variation:

Any statutory increase in the taxes and duties subsequent to bidder's offer, if it takes place within the original contractual delivery date, will be borne by IISc, Bangalore subject to the claim being supported by documentary evidence. However, if any decrease takes place the advantage will have to be passed on to IISc, Bangalore.

L) 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 the city of Bangalore, India.

M) General:

1. All amendments, time extensions, clarifications, etc., within the period of submission of the tender will be communicated electronically. No extension in the bid due date/time shall be considered on account of delay in receipt of any document(s) by mail.
2. The bidder may furnish any additional information, that is necessary to establish capabilities to complete the envisaged work. It is, however, advised not to furnish superfluous information.
3. The bidder may visit the installation site before submission of the tender, with prior intimation.
4. All imported equipment should be quoted in the currency of the country of origin, and all locally sourced items should be quoted in **Indian Rupees (INR)**.
5. Any information furnished by the bidder found to be incorrect, either immediately or at a later date, would render the bidder liable to be debarred from tendering/taking up work in IISc, Bangalore.
6. **The selected vendor must register with IISc (free registration) before tender submission if not already registered. The vendor code shall be mentioned in the quotation. As per the purchase policy, purchase orders can be raised only to registered vendors. Registration can be done at the following link: <https://hellovendor.iisc.ac.in> Instructions are given here: <https://digits.iisc.ac.in/vip/>**

Section 4 – Technical Specifications

Universal Testing Machine Integrated with high-temperature furnace

General Description and machine type: The UTM should be a computerized servo-hydraulic system (or equivalent types) with hydraulic gripping and front open crossheads operating on a closed-loop feedback mechanism. The UTM must be equipped with an integrated furnace for investigating the change in mechanical properties, including compressive strength and elastic modulus, with an increment in exposure temperature.

S.No	Specification for the Universal Testing machine	Essential/Optional
1.	Maximum load capacity of 400 KN with 2% to 100% of the machine capacity Least count for 400 N or better for 0 – 200 KN, and 800 N or better for 200 – 400 KN Resolution of piston movement shall be 0.01 mm	Essential
2.	Loading rate and cross-head displacement rates - Loading rates of 15 kN/min to 800 kN/min with an accuracy of $\pm 5\%$ of the selected loading rate or better - Cross-head displacement rate of 1.50 mm/min to 150 mm/min with an accuracy of $\pm 5\%$ of the selected displacement rate or better Testing speed should be programmable via the interface/software for both load-controlled and displacement-controlled modes The displacement may be measured by LVDT or optical encoders. In the case of LVDT, gauge lengths of 50 mm and 100 mm shall be provided.	Essential
3.	Ram stroke of 200 mm Maximum piston speed at no load: 150 mm/min	Essential
4.	Clearance between two columns: at least 500 mm Clearance for the Compression test of at least 650 mm A pair of compression platens shall be supplied, each of diameter of 150 mm	Essential
5.	Clearance for tensile test: 50 – 650 mm (or more)	Essential
6.	Tensile test jaws: - Clamping jaws for round specimens: 10 – 20 mm and 20 – 40 mm - Clamping jaws for flat specimens: 0 – 10 mm and 10 – 20 mm. The maximum width of the flat specimen will be 70 mm Please explicitly mention any deviation from these dimensions with justification. Deviations within an acceptable range will be considered.	Essential
7.	Transverse test attachment: - Adjustable roller support of width: 150 mm - Maximum adjustable clearance: 500 mm or more - Diameter of roller: 20 mm	Essential

S. No.	Software and controls	Essential/Optional
1.	The UTM shall be equipped with a microcontroller-based data acquisition system for real-time monitoring of the measurement parameters. The software should be compatible Users should be able to view the following graphs during the test. These graphs and the data should be saved in Excel (.xlsx) and PDF (.pdf) formats and retrieved through a USB port. The interface shall allow zooming and scaling of the graphs in real time. Load vs. time; Cross head displacement vs. time, Stress vs. Strain The user can choose the units for the load and displacement: Load: kN, kg, N Displacement: mm, cm, and inch The software should allow holding of the load and restarting the load over multiple steps, and taring and presetting of the load and displacement The UTM or the furnace should also be able to record the temperature at different time intervals. The furnace temperature is required to be synced with the loading and displacement applied by the UTM so that a correlation between these parameters can be established.	Essential
2.	The controls/software should allow release of the load after sample failure under a load-controlled testing method. For the displacement-controlled method, the controls/software should allow presetting of the displacement limits	Essential
3.	The UTM should have a mechanism for auto cut-off in the case of overheating or any other malfunctioning of the mechanical system. It is desirable that the temperature of the hydraulic system be monitored and displayed in real time. Auto-detection of overload and over-travel should be detected, and the hydraulic motor should switch off automatically. In the event of electronic circuit malfunction, a mechanical system shall be provided for lowering and raising the crossheads.	Essential
4	All the machine sensors and the control systems should be stable and must not malfunction in a relatively high-temperature environment.	Essential

S. No.	Specification of the <u>integrated furnace</u> with the UTM	Essential/Optional
1.	Outer diameter of the heating chamber: 400 mm Inner diameter of the heating chamber: 250 mm A sample height of up to 300 mm shall be accommodated within the furnace with adequate vertical and horizontal clearance for handling. Number of heating zones: 1 No. Construction: SS304 Highest operating temperature: 1000 °C Heating element: Kanthal Al Range of heating rate: Customizable between 4 – 50 °C/min Accuracy for temperature stability at steady state and heating rate: +/- 3 °C Insulation material: Ceramic Fibre and Ceramic Board or equivalent Opening type: Split opening Power supply: 440 Volt Mineral insulated thermocouples: 2 Nos. Control Panel: Power control panel housing control instruments, thyrister power regulators, single phase, MCBs, indicating lamps, switches, ammeters	Essential
2.	The furnace should record the time stamps for each temperature increment so that the data can be synchronized with the load and displacement data from UTM	Essential
3.	The load cell must be connected to the furnace chamber using a stable metallic fixture. The metallic fixture should not undergo any deformation during repeated use of the UTM and the furnace	Essential
4	The furnace needs to be integrated with the compression setup of the UTM. However, provisions to integrate the furnace with the tensile set-up need to be accommodated for consideration at a future date.	Essential
5	The internal insulation and the outer body of the furnace should have adequate structural strength and durability to withstand potential spalling of exposed concrete during load testing.	Essential

A. Training and demonstration after installation

Training on machine usage (hardware and software) must be demonstrated by the successful bidder at the bidder's cost. The bidder must conduct the training and demonstration at the delivery site at IISc. IISc will arrange the test samples. The demonstration must be conducted for different combinations, including displacement-controlled loading and stress-controlled loading under compression and tension. Concurrently, the furnace operation with an actual sample must be demonstrated at different set-point temperatures and heating rates.

Section 5- Technical Bid

The technical bid should furnish all requirements of the tender along with all annexures in this section and be submitted to:

Prof. Souradeep Gupta,
 Room 209
 Centre for Sustainable Technologies (Near
 Maramma Temple Gate, Malleshwaram)
 Indian Institute of Science
 Bangalore – 560012, India

Annexure-1
(Print on company letterhead)

Date:

Details of the Bidder

The bidder must provide the following mandatory information & attach supporting documents wherever mentioned:

Details of the Bidder

Sl. No	Items	Details
1.	Name of the Bidder	
2.	Nature of Bidder (Attach attested copy of Certificate of Incorporation/ Partnership Deed)	
3.	Registration No/ Trade License, (attach attested copy)	
4.	Registered Office Address	
5.	Address for communication	
6.	Contact person- Name and Designation	
7.	Telephone No	
8.	Email ID	
9.	Website	
10.	PAN No. (attach copy)	
11.	GST No. (attach copy)	

Signature of the Bidder

Name

Designation, Seal

Date:

Annexure-2
(Print on company letterhead)

Date:

Declaration regarding experience

To,
Prof. Souradeep Gupta, Room 209
Centre for Sustainable Technologies (Near Maramma Temple Gate)
Indian Institute of Science
Bangalore – 560012, India

Ref: Tender No: XXXXXXXXX
Dated: XXXXX

Universal Testing Machine Integrated with high-temperature furnace

Sir,

I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company / firm has ---- years of experience in supplying and installing this item.

(Signature of the Bidder)
Printed Name
Designation, Seal Date:

Annexure-3
(Print on company letterhead)

Date:

Declaration regarding track record

To,
Prof. Souradeep Gupta, Room 209
Centre for Sustainable Technologies (Near Maramma Temple Gate)
Indian Institute of Science
Bangalore – 560012, India

Ref: Tender No: XXXXXXX

Dated: XXXXX

Universal Testing Machine Integrated with high-temperature furnace

Sir,
I've carefully gone through the Terms & Conditions contained in the above referred tender. I hereby declare that my company/ firm is not currently debarred / blacklisted by any Government / Semi Government organizations / institutions in India or abroad. I further certify that I'm competent officer in my company / firm to make this declaration.

Or

I declare the following:

Sl.No	Country in which the company is Debarred /blacklisted / case is Pending	Blacklisted / debarred by Government / Semi Government/Organizations /Institutions	Reason	Since when and for how long

(NOTE: In case the company / firm was blacklisted previously, please provide the details regarding period for which the company / firm was blacklisted and the reason/s for the same).

Yours faithfully
(Signature of the Bidder)

Name
Designation, Seal

Date:

Annexure – 4
(Print on company letterhead)

Declaration for acceptance of terms and conditions

To,
Prof. Souradeep Gupta,
Room 209
Centre for Sustainable Technologies (Near Maramma Temple Gate)
Indian Institute of Science
Bangalore – 560012, India

Ref: Tender No: XXXXXX
Dated: XXXX

Universal Testing Machine Integrated with high-temperature furnace

Sir,

I've carefully gone through the Terms & Conditions as mentioned in the above referred tender document. I declare that all the provisions of this tender document are acceptable to my company. I further certify that I'm an authorized signatory of my company and am, therefore, competent to make this declaration.

Yours faithfully,

(Signature of the Bidder)
Name
Designation, Seal

Date:

Annexure – 5

Details of items quoted:

- a. Company Name
- b. Product Name
- c. Part / Catalogue number
- d. Product description / main features
- e. Detailed technical specifications
- f. Remarks

Instructions to bidders:

1. Bidder should provide technical specifications of the quoted product/s in detail.
2. Bidder should attach product brochures along with technical bid.
3. Bidders should clearly indicate compliance or non-compliance of the technical specifications provided in the tender document.

Section 6 – Commercial Bid

(Print on company letterhead)

Date:

Vendor code:

Tender reference number:

The Chairperson,
Attn: Prof. Souradeep Gupta,
Room 209
Centre for Sustainable Technologies (Near Maramma Temple Gate)
Indian Institute of Science
Bangalore – 560012, India

The commercial bid should be furnished with all requirements of the tender, with supporting documents as mentioned under:

S.No	Item Description	Cat. Number	Quantity	Unit Price	Sub total
1.	Universal testing machine <i>(mention full specifications)</i> <i>Warranty: 4 years on all parts, spares, and the main machine</i>				
2.	Furnace integrated with the Universal Testing machine, complete with controllers/sensors <i>(mention specifications)</i> <i>Warranty: 4 years on all parts, spares, and the main machine</i>				
	GST @				
	Grand total (INR)				

Any optional items

S.No	Description	Cat. Number	Quantity	Unit Price	Sub total
	AMC rate (per year)				

Signature and seal of the bidder

Section 7 – Checklist

(This should be enclosed with technical bid- Part A)

The following items must be checked before the Bid is submitted:

1. Sealed Envelope “A”: Technical Bid

1. Section 5- Technical Bid (each page signed by the authorized signatory and sealed) with the below annexures:
 - a. Annexure 1: Bidders details
 - b. Annexure 2: Declaration regarding experience
 - c. Annexure 3: Declaration regarding clean track record
 - d. Annexure 4: Declaration for acceptance of terms and conditions
 - e. Annexure 5: Details of items quoted
2. Copy of this tender document duly signed by the authorized signatory on every page and sealed.

2. Sealed Envelope “B”: Commercial Bid

Section 6: Commercial Bid

Your quotation must be submitted in two envelopes: Technical Bid (Envelope A) and Commercial Bid (Envelope B) super scribing on both the envelopes with Tender No. and due date and both of these in sealed covers and put in a bigger cover which should also be sealed and duly super scribed with Tender No., Tender description & Due Date.