

NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

DEPARTMENT OF CIVIL ENGINEERING

POST SRINIVASNAGAR, MANGALORE – 575 025 (D K)

Phone: (0824) 2474000.

Fax: (0824) 2474033

E- mail: info@nitk.ac.in

Website: <http://www.nitk.ac.in>



TENDER DOCUMENT

Tender Notification No: **CED/IRG 2019-20/EI/1-4**

Date: **20/02/2020**

Name of Goods	: Dynamic Data Logger, Dynamic Amplifier, Accelerometers, Pore Water Pressure Transducers, Displacement Transducers, Soil Box and Submersible Water Pumps.
Estimated amount put to Tender	: ₹ 16.0 Lakhs (Including GST)
EMD Amount (2% of estimated amount)	: ₹ 32,000/- Only
Time for Supply of item	: 10 Days
Date for Request tender document	: 11/03/2020, 2:00 p.m.
End date for submission of e-tender	: 11/03/2020, 3:00 p.m.
Address for Submission of Tender	: https://mhrd.euniwizarde.com/
Opening date of technical bid	: 11/03/2020, 3:30 p.m.
Contact Details of Buyer	: Dr. Babloo Chaudhary, Assistant Professor, Department of Civil Engineering National Institute of Technology Karnataka, Surathkal, Post - Srinivasanagar, Mangalore - 575025, Karnataka. Phone No: 0824 2473041, Email: babloo@nitk.edu.in



NATIONAL INSTITUTE OF TECHNOLOGY KARNATAKA, SURATHKAL

POST SRINIVASNAGAR, MANGALURU – 575 025

(An Autonomous Body of the Ministry of HRD, Govt. of India)

Phone: (0824) 2474 000.
Email: registrar@nitk.ac.in

Fax: (0824) 2474 033/ 2474 039
Website: <http://www.nitk.ac.in>

Tender Notification No: CED/IRG 2019-20/EI/1-4

Date: 20/02/2020

NOTICE INVITING e-TENDER (e-NIT)

The National Institute of Technology Karnataka, Surathkal (in short – NITK, Surathkal) is an autonomous institute under Ministry of HRD Govt of India imparting Technical Education and engaged in Research Activities. It is proposed to procure equipment for Central Research Facility.

Online Tender (<https://mhrd.euniwizarde.com/>) is invited for the following items in **two cover system** (i.e., Technical bid and financial bid) subject to the following terms and conditions, from the reputed manufacturers or it's authorized dealers so as to reach this office on or before scheduled date and time. The tender (Technical bid) will be opened online on the due date as mentioned. Bidders can verify their bid status through online portal <https://mhrd.euniwizarde.com/>. The financial bid of only such bidders whose technical bid is accepted shall be opened on the same day or later pre-informed date.

1. **Name of Goods** : Dynamic Data Logger, Dynamic Amplifier, Accelerometers, Pore Water Pressure Transducers, Displacement Transducers, Soil Box and Submersible Water Pumps
2. **Estimated Cost** : ₹ 16.0 Lakhs (Including GST)
3. **E M D (2% of estimated amount)** : ₹ 32,000/- only
4. **Date for Request tender document** : 11/03/2020, 2:00 p.m.
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6. **Address for Submission of Tender** : <https://mhrd.euniwizarde.com>
7. **Date of opening of technical bid** : 11/03/2020, 3:30 p.m.
Contact Details of Buyer : Dr. Babloo Chaudhary,
Assistant Professor,
Department of Civil Engineering
National Institute of Technology Karnataka, Surathkal,
Post - Srinivasanagar, Mangalore - 575025, Karnataka.
Phone No: 0824 2473041, Email: babloo@nitk.edu.in

Sd/-
HOD

SECTION 1 A:- PROCEDURE FOR SUBMISSION OF E-TENDER

The bidders are required to submit soft copies of their bid electronically on the e-Wizard Portal using valid Digital Signature Certificates. Below mentioned instructions are meant to guide the bidders for registration on the e-Wizard Portal, prepare their bids in accordance with the requirements and submit their bids online on the e-Wizard Portal. For more information bidders may visit the e-Wizard Portal <https://mhrd.euniwizarde.com>

1. REGISTRATION PROCESS ON ONLINE PORTAL

1. Bidders to enroll on the e-Procurement module of the portal <https://mhrd.euniwizarde.com> by clicking on the link "Bidder Enrolment" as per portal norms.
2. The bidders to choose a unique username and assign a password for their accounts. 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 e-Wizard Portal.
3. Bidders to register upon enrolment their valid Digital Signature Certificate (DSC: Class II or Class III Certificates with signing key usage) issued by any Certifying Authority recognized by CCA India with their profile.
4. 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. Foreign bidders are advised to refer "DSC details for Foreign Bidders" for Digital Signature requirements on the portal.
5. Bidder then logs in to the site through the secured log-in by entering their user ID/password and the password of the DSC / e-Token.

2. TENDER DOCUMENTS SEARCH

1. Various built-in options are available in the e-Wizard Portal which is further synchronizing with CPP Portal to facilitate bidders to search active tenders by several parameters. These parameters include Tender ID, organization, location, date, value, etc.
2. There is also an option of advanced search for tenders, wherein the bidders may combine a number of search parameters such as organization name, a form of contract, location, date, other keywords, etc. to search for a tender published on the Online Portal.
3. 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 Online Portal to intimate the bidders through SMS / e-mail in case there is any corrigendum issued to the tender document.

4. 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.

3. BID PREPARATION

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.
3. 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 needs to be submitted. Any deviations from these may lead to rejection of the bid.
4. 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 / PNG, etc. formats. Bid documents may be scanned with 100 dpi with black and white option.

4. BID SUBMISSION

1. Bidder to log into the site well in advance for bid submission so that he/she uploads 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 to digitally sign and upload the required bid documents one by one as indicated in the tender document.
3. Bidder to select the payment option as "Online" to pay the tender fee/ EMD wherever applicable and enter details of the instrument.
4. A standard BoQ format has been provided with the tender document to be filled by all the bidders. Bidders to note that they should necessarily submit their financial bids in the prescribed format and no other format is acceptable.
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, the 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, which cannot be viewed by unauthorized persons until the time of bid opening.
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 have all relevant documents in a single PDF file of compliance sheet.
10. **The off-line tender shall not be accepted and no request in this regard will be entertained whatsoever.**

5. AMENDMENT OF BID DOCUMENT

At any time prior to the deadline for submission of proposals, the institutions reserve the right to add/modify/delete any portion of this document by the issuance of a Corrigendum, which would be published on the website and will also be made available to the all the Bidder who has been issued the tender document. The Corrigendum shall be binding on all bidders and will form part of the bid documents.

6. 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 e-Wizard Portal, in general, may be directed to the 24x7 e-Wizard Helpdesk. The contact number for the helpdesk is **011-49606060, 23710092, 23710091, Sanjeet Kumar Jha +91-8882495599, 9350530626, Gagan +91 8448288987, 8448288988 and Vijay +91 9113518121, 8448288989**

7. INSTRUCTIONS TO THE BIDDERS

1. **Process for Bid submission through MHRD portal is explained in Bidder Manual. Bidders are requested to download Bidder Manual from the home page of MHRD website (<https://mhrd.euniwizarde.com>). Steps are as follows (Home page \implies Downloads \implies Bidder Manuals).**
2. The tenders will be received online through portal <https://mhrd.euniwizarde.com>. In the Technical Bids, the bidders are required to upload all the documents in .pdf format.

3. Possession of 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://mhrd.euniwizarde.com>. Digital Signature Certificates can be obtained from the authorized certifying agencies, details of which are available on the web site <https://mhrd.euniwizarde.com> under the link 'DSC help'.

Tenderers are advised to follow the instructions provided in the 'Instructions to the Tenderers for the e-Submission of the bids online through the e-Wizard Portal for e-Procurement at <https://mhrd.euniwizarde.com>.

4. **The bidder has to "Request the tender" to MHRD portal before the "Date for Request tender document", to participate in bid submission.**
8. All entries in the tender should be entered in online Technical & Commercial Formats without any ambiguity.
9. Any order resulting from this e-tender shall be governed by the terms and conditions mentioned therein.
10. No deviation to the technical and commercial terms & conditions are allowed.
11. The tender inviting authority has the right to cancel this e-tender or extend the due date of receipt of the bid(s).

SECTION 1 B: INSTRUCTION TO BIDDER (ITB)

1. **The bid should be submitted in two covers System-Technical Bid and Financial Bid** online through portal <https://mhrd.euniwizarde.com>:

1.1 **Envelope No.1 – Technical Bid:** The agencies should give details of their technical soundness and provide a list of customers of a previous supply of similar items to Universities, Institutes or Government Departments/ Undertakings/ public sectors with contact details. The details of the Bidder/ profile should be furnished along with the copy of all related documents. This envelope should be uploaded **online tender (<https://mhrd.euniwizarde.com/>)** and digitally signed as **“Envelope No. 1 – Technical Bid i.e. Checklist (Excel format).**

1.2. **Document to be scanned and submitted by uploading in the technical bid:**

- a) The Bidder should possess a Licence certificate for manufacture /supply of the item.
- b) List of Owner/partners of the firm and their contact numbers
- c) The Bidder should possess Income-tax PAN Number.
- d) The Bidder should possess a valid GST registration number.
- e) Catalogue of the Product with detailed product specifications.
- f) List of Service Centres
- g) List of customers with contact details.
- h) The average annual turnover should not be less than 30% of the estimated cost put to tender/Tender for the job work. The copy of the Balance sheet, Profit & Loss A/c., Trade or Manufacturing A/c for the last 3 years should be enclosed
- i) **Warranty Period Offered for the tendered item to be specified. If the Warranty period is not conforming to the schedule of requirements given in section 3 of the document, the bid is liable to be treated as non-responsive and rejected.**
- j) **EMD payment needs to make through Online. EMD shall bear no interest. Any bid not accompanying with EMD is liable to be treated as non-responsive and rejected.**
- k) NSIC/ MSME registration certificate (in case of bidders claiming exception of EMD while submitting a bid)
- l) **Contract form given in section 5 needs to be submitted.**

The above documents should be furnished in the technical bid envelope.

2. Envelope No.2 – Financial bid: The agencies should submit their financial bid as per the (.xlxs) format is given in Section 4 of the Notice Inviting Tender in this cover. The rate should be quoted in figures and upload online bid.This envelope should upload online only as “Envelope No. 2 – Financial Bid”.

Both the Envelope No. 1 and 2 should be uploaded through online portal (<https://mhrd.euniwizarde.com>).

- 3 The tender will be accepted only from the **manufacturers or its authorised supplier**.
4. The Institute **reserves the right to visit the factory** before or after the issue of supply order to satisfy itself regarding the quality of production. In case of any remarks /default noted, the EMD will be forfeited even if pre-qualified.
5. **The Financial Bid shall be in the format of Price Schedule given in Section 4. The Contract form as per format is given in section 5 shall be submitted. The incomplete or conditional tender will be rejected.**
6. Details of the item to be carried out, approximate quantity and the specifications are mentioned in **“Section 3”** appended to this Notice Inviting Tender.
7. **The item to be used is strictly according to the specification and subject to test by the Institute/concerned authorities. It must be delivered and installed in good working condition.**
8. The Institute **reserves the right to cancel or reduce the quantity** included in the schedule of requirements at any time after acceptance of the tender with a notice. The Contractor/Supplier shall have no claim to any payment of compensation or otherwise whatsoever, on account of any profit or advantage which he might have derived from the execution of the work/supply in full but he did not derive in consequence of the foreclosure of the whole or part of the works.
9. **Performance Security of 5 % of the contract value in terms of Bank Guarantee by scheduled banks shall be given by the successful bidder for the total period of Warranty. In the case of import, Indian Agent has to submit a performance guarantee in INR.**
10. **The release of EMD:** The EMD shall be released after receipt of performance security from the successful bidder.
- 11 **The validity of bids:** The rate quoted should be valid for a minimum of 90 days. No claim for escalation of the rate will be considered after opening the Tender.
- 12 **Imports: In case, Goods are to be imported, the Indian agent should furnish authorisation certificate by the principles abroad for submission of the bid in response to this Notice Inviting Tender.**
- 13 **Clarification of Tender Document:**
A prospective bidder requiring any clarification of the Tender Document may communicate to the contact person given in this notice inviting tender. The contact person will respond to any request for clarification for the Tender Document received not later than 5 working days prior to the last date for the receipt of bids
- 14 **Amendment of Tender document:** At any time prior to the last date for receipt of bids, Institute may for any reason, whether at its own initiative or in response to a clarification requested by a prospective bidder, modify the Tender document by an amendment.
- 15 **Institute may at its own discretion extend the last date for the receipt of bids.**

- 16 The bids shall be written in English language and any information printed in another language shall be accompanied by an English translation, in which case for the purpose of interpretation of the bid, the English translation shall govern.
- 17 The Institute reserves the right of accepting any bid other than the lowest or even rejecting all the bids. The decision of the Institute Purchase Committee is final in all matters of tender and purchase.
- 18 The bidder should give the following declaration while submitting the Tender.
- 19 Relaxation for Start-up, MSEs, Make in India will be as per GOI norms.
- 20 Any other details required may be obtained from the contact person (Buyer) given in the Notice Inviting Tender during the office hours.

DECLARATION

I/we have not tampered/modified the tender forms in any manner. In case, if the same is found to be tampered/modified, I /we understand that my/our tender will be summarily rejected and full Earnest money deposit will be forfeited and I /we are/are liable to be banned from doing business with NITK, Surathkal and/or prosecuted.

Signature of the Bidder : _____

Name and Designation : _____

Business Address : _____

Place:

Seal of the Bidder's Firm

Date:

SECTION 2: CONDITIONS OF CONTRACT

1. In the case of the domestic supplier, the rate should be quoted on FOB basis (Door Delivery).
2. In the case of import, either CIF or FOB (foreign currencies) rate should be quoted. All components of expenditure to arrive at Bangalore need to be explicitly specified.
3. The bidder shall indicate the excise duty exemption for the goods if applicable.
4. The rates should be quoted for preferably FOR destination from supply within India.
5. The institute is eligible for customs duty & GST exemption (for research related Procurement of Goods) & In the case of import, there will be no GST.
6. The rate quoted should be on a unit basis. Taxes and other charges should be quoted separately, duly considering exemptions if any.
7. Rate quoted should be inclusive of Testing, commissioning and installation of equipment and Training.
8. Payment: No advance payment will be made. Payment will be made only after the supply of the item in good and satisfactory condition and receipt of performance security by the supplier. **In the case of Imports, the payment will be made through LC / Sight Draft / After Installation, and performance security need to be submitted at the time of LC commitment/issue of sight draft.**
9. Guarantee and Warranty period should be specified for the complete period conforming to section 3 of this tender document.
10. The period required for the supply and installation of the item should be specified conforming to section 3 of this tender document.
11. In case of dispute, the matter will be subject to Mangalore Jurisdiction only.

SECTION 3: SCHEDULE OF REQUIREMENTS, SPECIFICATIONS AND ALLIED DETAILS

[To be filled up by the Department / Center of NITK, Surathkal]

Item(s) Name to be procured : **Dynamic Data Logger, Dynamic Amplifier, Accelerometers, Pore Water Pressure Transducers, Displacement Transducers, Soil Box and Submersible Water Pumps**

Type (Equipment / Software / Furniture / Others) : Equipment/Instruments/transducers & other items

Brief Specifications of the Item(s) : **Detailed Specifications are mentioned in Annexure "A"**

Quantity :

SI No	Item Name	Quantity
1	Dynamic data logger (16 channels)	01 No.
2	Dynamic amplifier (15 channels)	01 No.
3	Accelerometers	05 Nos.
4	Pore water pressure transducers	05 Nos.
5	Displacement transducers	04 Nos.
6	Soil box: 2m (L) x 1m(H) x 0.5m(W)	01 No.
7	Submersible water pumps	04 Nos.

Any other details / requirement : See Annexure "A". Installation should be done by supplier

Warranty Period required :

SI No	Item Name	Quantity	Warranty Period (Minimum)
1	Dynamic data logger (16 channels)	01 No.	02 Years
2	Dynamic amplifier (15 channels)	01 No.	02 Year
3	Accelerometers	05 Nos.	02 Years
4	Pore water pressure transducers	05 Nos.	02 Year
5	Displacement transducers	04 Nos.	02 Years
6	Soil box: 2m (L) x 1m(H) x 0.5m(W)	01 No.	02 Years
7	Submersible water pumps	04 Nos.	As per maker policy

Delivery Schedule expected

after release of Purchase order : 10 days

(In days)

EMD (in Rupees) : ₹ 32000/- only

Performance Security to be given

by Successful Bidder after release of : 5% of PO value

Purchase Order (in Rupees)

**SECTION 4 - PRICE BID (Draft format for indigenous Supplies)
[To be used by the bidder for submission of the bid]**

Reference Number:

Date:

Sr. No.	Description of the Item and Specification	Qty. in Units	Unit Price (Rs.)	Discount %	GST (%)	Other charges if any (please specify details)	Total Price (Rs.)
1							
2							

1. Delivery Mode: Delivery at NITK Surathkal, at the site only.
 Total Bid Price in the above column should be inclusive of all taxes and levies transport, loading, unloading, etc.
 Delivery Period:..... days.
 Validity Date: Minimum 90 days from the date of submission of Tender/Tender.
2. Payment Term: Payment within 30 days from the date submission of bill Acceptance Certificate to concerned Dept./ Sect.

PAN No. :

GST Registration No. :

Seal and Signature:.....

Name & Business Address:.....

Note: Price Bid should be submitted in given format only.

Place:

Date:

**SECTION 4 - PRICE BID (Draft format for Imported Supplies)
[To be used by the bidder for submission of the bid]**

Reference Number:

Date:

S. No.	Description of Items & Specifications	HSN/SAC Code	Quantity in Units	IGST %	Price basis (CIF)	Total Bid Price
1						
2						
	Installation and Commissioning Charges (if any, quote in INR)					
	Bidder Commission (if any quote in %)					
	Other Charges (please specify details)					
Grand Total						

HSN Code: Harmonised System of Nomenclature Code no. and # SAC Code: Service Accounting Code no.

1. Delivery Period:..... days.
2. Validity Date: Minimum 90 days from the date of submission of Tender.
3. The validity of the bid: 90 days from the date of submission of the Tender or Tender.
4. Mode of Shipment: _____
5. Port of Shipment: _____

Place:

Date:

SECTION 5: CONTRACT FORM

[To be provided by the bidder in the business letter head]

1. (Name of the Supplier's Firm) hereby abide to deliver them by the delivery schedule mentioned in section 3 tender document for the supply of the items if the purchase order is awarded.
2. The item will be supplied conforming to the specifications stated in the tender document without any defect and deviations.
3. Warranty will be given for the period mentioned in the tender document and service will be rendered to the satisfaction of NITK, Surathkal during this period.

Signature of the Bidder : _____

Name and Designation : _____

Business Address : _____

Place:

Seal of the Bidder's Firm

Date:

BANK GUARANTEE FORMAT FOR PERFORMANCE GUARANTEE BOND

(To be typed on Non-judicial stamp paper of the value of Indian Rupees of One Hundred) (TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALORE OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALORE OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALORE. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED.)

To,
Registrar,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangalore – 575025

LETTER OF GUARANTEE

WHEREAS National Institute of Technology Karnataka (Buyer) has invited Tenders vide Tender No..... Dt. for purchase of AND WHEREAS the said tender document requires that any eligible successful tenderer (seller) wishing to supply the equipment / machinery, etc. in response thereto shall establish an irrevocable Performance Guarantee Bond in favour of “**Registrar, National Institute of Technology Karnataka, Surathkal**” in the form of Bank Guarantee for Rs **(10% (ten percent) of the purchase value)** and valid till **one year or up to warranty period whichever is later** from the date of issue of Performance Guarantee Bond may be submitted within 30 (Thirty) days from the date of Order Acknowledgement as a successful bidder.

NOW THIS BANK HEREBY GUARANTEES that in the event of the said tenderer (seller) failing to abide by any of the conditions referred in tender document / purchase order / performance of the equipment / machinery, etc. this Bank shall pay to National Institute of Technology Karnataka, Surathkal on demand and without protest or demur Rs (Rupees.....).

This Bank further agrees that the decision of National Institute of Technology Karnataka, Surathkal (Buyer) as to whether the said Tenderer (Seller) has committed a breach of any of the conditions referred in the tender document/purchase order shall be final and binding.

We, (name of the Bank & branch) hereby further agree that the Guarantee herein contained shall not be affected by any change in the constitution of the Tenderer (Seller) and/ or National Institute of Technology Karnataka, Surathkal (Buyer).

Notwithstanding anything contained herein:

1. Our liability under this Bank Guarantee shall not exceed Rs. (Indian Rupees only).
 2. This Bank Guarantee shall be valid up to(date) and
 3. We are liable to pay the guaranteed amount or any part thereof under this bank guarantee only and only if National Institute of Technology Karnataka (NITK) Surathkal serve upon us a written claim or demand on or before.....(date).
- This Bank further agrees that the claims if any, against this Bank Guarantee, shall be enforceable at our branch office at situated at (Address of local branch).

Yours truly,
Signature and seal of the guarantor:
Name of Bank & Address:
Date:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. The bank is requested to take appropriate necessary action on or after expiry of bond period.

BANK GUARANTEE FORMAT FOR EARNEST MONEY DEPOSIT / BID BOND

(To be typed on Non-judicial stamp paper of value Indian Rupees One Hundred)

(TO BE ESTABLISHED THROUGH ANY OF THE NATIONAL BANKS (WHETHER SITUATED AT MANGALORE OR OUTSTATION) WITH A CLAUSE TO ENFORCE THE SAME ON THEIR LOCAL BRANCH AT MANGALORE OR ANY SCHEDULED BANK (OTHER THAN NATIONALISED BANK) SITUATED AT MANGALORE. BONDS ISSUED BY CO-OPERATIVE BANKS ARE NOT ACCEPTED)

LETTER OF GUARANTEE

To

Registrar,
National Institute of Technology Karnataka,
Srinivasnagar P.O., Surathkal
Mangalore – 575025

IN ACCORDANCE WITH YOUR TENDER for the supply of, M/s.
(hereinafter called the "Bidder") having its Registered Office at....., wish to participate in the said bid for the supply.....as an irrevocable Bank Guarantee against Earnest Money Deposit for an amount of Rs. (Rupees.....) valid up to **(180 days from the date of**

issue of Bank Guarantee), is required to be submitted by the bidder as a condition precedent for participating in the said bid, which amount is liable to be forfeited by the Purchaser on (1) the withdrawal or revision of the offer by the bidder within the validity period, (2) Non acceptance of the Letter of Indent / Purchase order by the Bidder when issued within the validity period, (3) failure to execute the contract as per contractual terms and condition within the contractual delivery period and (4) on the happening of any contingencies mentioned in the bid documents.

During the validity of this Bank Guarantee:

We,(Bank name) having the registered Office at guarantee and undertake to pay immediately on first demand by NITK Surathkal, an amount of Rs..... (Rupees.) Without any reservation, protest, demur and recourse. Any such demand made by the NITK Surathkal shall be conclusive and recourse. Any such demand made by the purchaser shall be binding on the Bank irrespective of any dispute or difference raised by the Bidder.

The Guarantee shall be irrevocable and shall remain valid up to (180 days from the date of issue of Bank Guarantee) If any further extension is required, the same shall be extended to such required period on receiving instruction from the Bidder, on whose behalf the is Guarantee is issued.

Notwithstanding anything contained herein:

- * Our liability under this Bank Guarantee shall not exceed Rs..... (Rupees.....).
- * This Bank Guarantee shall be valid up to (date).
- * We are liable to pay the guaranteed amount or any part thereof under this Bank Guarantee Only and only if you serve upon us a written claim or before (date).

This Bank further agrees that the claims if any, against this Bank Guarantee shall be enforceable at our branch office at situated at(Address of local branch).

Yours truly,

Signature and seal of the guarantor:

Name of Bank:

Address:

Date:

Instruction to Bank: Bank should note that on expiry of Bond Period, the Original Bond will not be returned to the Bank. The bank is requested to take appropriate necessary action on or after expiry of bond period

Detailed Technical Specifications

1) Dynamic Data Logger (16 channels)

Supplying of dynamic data logger (or DAQ Dynamic Seismic Analyzer) which can be used to capture/analyze data from scientific and engineering transducers/gauges, such as accelerometers, displacement transducers, pore water pressure transducers. It must be suitable for capturing data for tests conducted under static and seismic conditions. This item consists of (i) Dynamic Data Logger and (ii) Desktop Computer System which will be used for capturing and analyzing data during the experiments/tests.

The dynamic data logger must be simple to operate, compact and able to handle large data with high speed. The data logger must be suitable and compatible with all the transducers mentioned in the document. The data logger must be ready to use in all the sense (e.g. software installation, update, etc.). Its body should be made of aluminum or better material. Each and every part of the item should be corrosion resistant. Warranty (all parts and as a whole) for the item must be of 02 years. AMC (Annual maintenance contract) must be of 05 years from the date of purchase for the item. No extra money will be provided for the AMC and warranty. Specifications for the dynamic data logger are given below:

<i>Items</i>	<i>Description(s)</i>
Channel no	16 or more
Channel type	Analog / current (BNC cable supported for signal processing)
ADC resolution	24 bits
ADC speed	200 kHz
Data log speed	1-500 SPS for 16 channels
Communication	USB 2.0
Software	Bench Analysis Software (or other suitable software) with Features: - <ul style="list-style-type: none"> • Live dynamic data log and view facility • Peak/ normal hold facility • Data export facility to excel/ ASCII • Enable/ disable channel facility • Channel Null facility • Inbuilt factory calibration
Power Supply	220 VAC 50Hz
Training	1-2 days training at NITK- how to operate the data logger and obtain test data
Desktop computer system	One desktop computer system which must be compatible with the data logger and dynamic amplifier (item No 2 of the document) in order to connect it with the data logger; and collect data from data logger by the help of the computer system. Detail specification for desktop computer system is given on next page.

Detailed Technical Specification for Desktop Computer System		
1	Brand Name and Model	To be specified by vendor (Only a Business/Enterprise series of desktop to be considered)
2	ISO Certification	Manufacturing facility/brand should be ISO certified.
3	Processor	Intel Core i9 9900 [9 th Generation processor] or better.
4	Memory	2048 SSD
5	Number of Cores per Processor	8
6	Chipset Number	Intel Q 370
7	Operating System	Windows 10 Pro (64bit) English
8	RAM Size (GB)	32
9	RAM Expandability up to (using spare DIMM Slots in GB)	128
10	Type of Drives used to populate the Internal Bays	SSD
11	Total SSD Capacity (GB)	2048
12	LED Backlit Monitor Size (INCHES)	22
13	Monitor Resolution (PIXELS)	1920x1080
14	Cache (MB)	16
15	Type of RAM	DDR4
16	RAM Speed (MHz)	2666
17	Graphics	Intel Integrated HD Graphics or higher.
18	Audio	Integrated High Definition audio codec or better.
19	Video Card	AMD Radeon™ R5 430, 2GB, FH (DP/DP) or better

20	Network Interface	Intel integrated network connection 10/100/1000 Gigabit Ethernet or higher.
21	Optical Drive	Multi Burner DVD Rewriter (SATA) or Cyberlink Software for Windows 8/10 without media or better OR COMPATIBLE.
22	Ports & Connectors	Front: Minimum of 4 no of USB ports (2* USB 3.0 + 2*USB 2.0 or all 4 * USB 3.0) Rear: 4 No or higher USB port with minimum 4* USB 3.0 Audio Ports: Stereo Line-in, 1 Microphone-in (Front) 1 Speaker/Line-out (Back),1 Headphone (front), 1RJ-45, 1 no VGA Port, 1 no Display Port, 1 no Serial Port.
23	Keyboard & Mouse	Keyboard - KB216 Black (English, US International) or better Mouse - USB Optical Scroll Mouse (or better), Same make as PC
24	TPM Security	Trusted Platform Module (Discrete TPM Enabled) OR BETTER
25	Warranty	5 years warranty for the product (Part, Labor, etc.) on site including Monitor from brand only.
26	Environmental Certification & Compliance: PC	Energy Star Green Guard, EPEAT Gold. RoHS – : Restrictions of Hazardous Substances. TUV or better
27	Recyclable Capability	The PC Should be minimum 85% or above recyclable when properly disposed at end of life cycle. The brand should have clear cut policy on disposal of the same.
28	Temperature	Temperature Range Operating: 10° to 35° C
29	Security features	Trusted Platform Module/Chassis intrusion switch <ul style="list-style-type: none"> • Power- on password • Administrator password • Hard disk password • Boot sequence control • Boot without keyboard and mouse • Individual USB port disablement
30	Power Cord	System Power Cord 6A (EURO-INDIA) or better
31	Optical Software	Cyberlink Software for Windows 8/10 without media or better
32	Wireless	Wireless LAN Card
33	Availability of Webcam integrated with display	Yes
34	Availability of Speakers integrated with display	Yes
35	Antivirus	Standard Antivirus (total security of the system including internet safety) for 03 years

		subscriptions
36	Microsoft (MS) Office pack	Microsoft Office 2019 H&S or better version
37	Software Stack	Applications Software for Windows 10 Pro (64bit) English
38	Operating System Recovery Options	Windows 10 Pro OS Recovery Media 64bit – DVD OR BETTER/EQUIVALENT
39	Other Miscellaneous items	All other Miscellaneous items/software in order to make the desktop computer system ready to use properly.

2) Dynamic Amplifier (15 channels) - 01 No.

Supplying of dynamic amplifier for collecting and amplifying the data from seismic loadings tests. The dynamic data logger must be simple to operate, compact and able to handle large data with high speed. It must be able to work well with real earthquake data, dynamic loadings and sinusoidal waves (frequency up to 20 Hz). The dynamic amplifier must be suitable for all the transducers and data logger mentioned in the documents. This item must be ready to use in all the sense (e.g. software installation, update, etc.). Its body should be made of aluminum or better material(s). Each and every part of the item must be corrosion resistant. Warranty (all parts and as a whole) for the item must be of 02 years. AMC must be of 05 years from the date of purchase for the item. No extra money will be provided for the AMC and warranty. Specifications for dynamic amplifier are given below:

Items	Description(s)
Channel No	16 or more
Channel Type	Dedicated channel as per sensor
Accuracy	0.01%
Linearity	0.1%
Bandwidth	200kHz
Power Supply	220 VAC 50Hz
Training	1-2 days training at NITK - how to operate this dynamic amplifier and obtain data

3) Accelerometers - 05 Nos.

Supplying of accelerometers which can be used for the purposes of scientific and engineering research specially for Geotechnical Engineering (Civil Engineering) applications. It must be suitable for real earthquake data and sinusoidal waves (frequency up to 20 Hz). This item must be compatible with the data logger and dynamic amplifier mentioned in the document. These items must be ready to use in all the sense. Warranty (all parts and as a whole) for these items must be of 02 years. AMC must be of 05 years from the date of purchase for these items. No extra money will be provided for the AMC and warranty. Specifications for accelerometers are as follows:

Items	Description(s)
Measuring Principle	Dynamic with damping

Range	Up to 1.0 g ($g = 9.81 \text{ m/s}^2$)
Filter	Inbuilt, if any
Output	$\pm 10 \text{ VDC}$
Nonlinearity	$\pm 0.2\%$ of full scale
Cross Axis Sensitivity	$\pm 1\%$
Band width	1.7 Hz
Response Time	1 ms
Supply Voltage	+5 VDC
Supply Current	$\sim 350 \mu\text{A}$
Operating Temperature	-40 to +85 °C
Dimension	All its three dimensions (individual) must be less than or equal to 3cm. None of its sides should be more than 3 cm.
Training	1-2 days training at NITK - how to operate this item with data loggers, dynamic amplifier and collect data from a computer.

4) **Pore Water Pressure Transducers - 05 Nos.**

Supplying of pore water pressure transducers or water pressure transducers. The pore water pressure transducers must be suitable for research activities in the area of Geotechnical Engineering (Civil Engineering). It must be suitable for static and dynamic loadings. The pore water pressure transducer must have porous metal (corrosion resistant) net or any similar arrangement on its tip so that the transducer can be used inside saturated sands/soils during static/dynamic loadings. The net must prevent soils/sands to enter inside the water pressure sensor, thus it can measure pore water pressure only (not soil pressures + pore water pressures). The arrangement must be made in such a way the net can be removed from the main body of the transducer for washing or cleaning purpose. Later, the same net can be fixed with the main body. This item must be compatible with the data logger and dynamic amplifier mentioned in the document. These items must be ready to use in all the sense. Warranty (all parts and as a whole) for these items must be of 02 years. AMC must be of 05 years from the date of purchase for these items. No extra money will be provided for the AMC and warranty. Specifications for pore water pressure transducers or water pressure Transducers are as follows:

Items	Description(s)
Measuring Principle	Piezoresistive
Pressure Range	Up to 0.5 bar
Filter	Inbuilt ASIC conditioned or better filter
Output	4 to 20 mA
Class	$\pm 0.25\%$
Protection Class	IP65 or better
SPAN	16 mA
Full Scale Output	20 mA
Zero Output	4 mA

Total Accuracy	0.5 %
Response Time	1 ms
Supply Voltage	10 to 32 Volt DC
Loading	Vs - 10V/20mA
Insulation Resistance At 50 V	100 MΩ
Operating Temperature	-40 to +125° C
Training	1-2 days training at NITK - how to operate this item with data loggers, dynamic amplifier and collect data from a computer.

5) Displacement Transducers - 04 Nos.

Supplying displacement transducers or extensometers. Treads type arrangement must be made with the transducers. The tread must be attached to the main displacement transducer. Displacement must be measured/recorded if the tread is pulled outward or release slowly. These items must be ready to use in all the sense. This item must be compatible with the data logger and dynamic amplifier mentioned in the document. Warranty (all parts and as a whole) for these items must be of 02 years. AMC must be of 05 years from the date of purchase for these items. No extra money will be provided for the AMC and warranty. Specifications for the displacement transducers are as follows:

Items	Details
Measuring Principle	Damping
Displacement Range	Up to 150 mm
Filter	Inbuilt
Output	+10VDC
Nonlinearity	±1.0% of full scale
Cross Axis Sensitivity	±1%
Band Width	1.7 Hz
Response Time	1 ms
Current Supply	Initial 50mA
Supply Voltage	+5 VDC
Operating Temperature	-0 to +55° C
Training	1-2 days training at NITK - how to operate this item with data loggers, dynamic amplifier and collect data from a computer.

6) Soil Box: 2m (L) x 1m(H) x 0.5m(W)

Supplying of open top soil box for conducting Geotechnical tests/experiments in a laboratory. It contains two items (i) *Soil box* and (ii) *Hot air oven*

(i) **Soil Box - 01 No.**

Drawing of the soil box is attached. Size of the box is 2.5m(L) x 0.5m (W) x 1.0m(H). All sides and bottom of the box must be made of *high quality transparent acrylic plates (thickness 20mm)*. Frame of the box will made of metal (e.g. mild steel). The box must be water tight, no seepage of water is allowed if the box is filled with water and saturated soils. At both ends of the box, a partition wall is planned. The partition walls must be also water tight. Furthermore, both the partition walls must be removable or/and collapsible. All the weldings, fixtures and fittings like screws for fixing acrylic plate with the metal frame should be provided of approved quality and make. This item must be ready to use in all the sense. Warranty (all parts and as a whole) for the item must be of 02 years. AMC must be of 05 years from the date of purchase for the item. No extra money will be provided for the AMC and warranty. Details of the soil box are given as follow:

Items	Details
Material	MS Channel and Acrylic sheet (transparent)
Coating on metal channels	Non-corrosive powder coating
Thickness of Acrylic sheet	20 mm
Bottom mounting flange	06 -08 Nos (thickness-10 mm or more, Wide = 100mm or more, Length=800 mm)
Container to Store Sands	Separate/extra one or two or more containers of total capacity equivalent to 500 kg of sands. These containers must be able to store 500 kg standard sands. The container(s) must be able to store hot (110°C) sands and normal (at room temperature) sands

Any change in soil box must be carried out with the consent of work in-charge/convener. The work must be completed as per the detailed drawing and directions of the work in-charge/convener.

Size: 2.5m (L) x 0.5m (W) x 1.0m (H). Drawing of the soil box is shown in Fig. 2. For indication purpose, a photograph of similar soil box is given for indication purpose (see Fig. 1).

(ii) **Hot Air Oven - 01 No.**

Supplying of hot air oven (with trays) for drying of moist or saturated soils/sands. The temperature range inside the oven must be from 75°C to 200°C. The temperature must be controlled manually. Inner chamber must be made of stainless steel, 304 grades; and outer chamber should be made of mild steel with power coated (or better metal). Inner most chamber size must be 90cm(H) x 60cm(W) x 60cm(D). The inner chamber should have three shelves. Thus, the oven should have four compartments inside. These shelves should be removable. All the weldings, fixtures and fittings like screws for fixing acrylic plate with the metal frame should be provided of approved quality and make. This item must be ready to use in all the sense. Warranty (all parts and as a whole) for the item must be of 02 years. AMC must be of 05 years from the date of purchase for the item. No extra money will be provided for the AMC and warranty. Specifications for the hot air oven are as follows:

Items	Description(s)
Inner Chamber size	90cm(H) x 60cm(W) x 60cm(D).
No. of shelf	03
Capacity of each shelf	Each shelf must be able to hold minimum 51 kg of sands

Chamber Design	Triple walled, ducted air type three chamber body.
Inner Chamber	Inner & inner most chamber made up of stainless steel 304 Grade
Outer Chamber	Outer chamber made of mild steel finished with powder coated.
Insulation	Insulation between inner and outer chamber is filled with high grade ceramic fibre and glass wool with a gap of 100mm thickness to withstand maximum temperature 200° C
Air Circulation Fan Motor	The motorized forced air circulation is provided at the top to maintain uniform temperature inside the chamber
Heaters	Air heaters are made of high grade Kanthal wires of suitable wattage
Gasket	An asbestos rope or Neoprene rubber(optional) gasket is provided for the Door to avoid air leakage and temperature loss from Instrument.
Temperature Range	5°C above ambient to 200°C.
Temperature Controller	Microprocessor based PID temperature controller with dual display (Process value and set value), low and high limit setting with Cr Al thermocouple and Timer control.
Temperature Resolution	0.1°C
Temperature Accuracy	±1°C
Temperature Uniformity	±3°C
Power Supply	230 Volts, Single Phase, 50Hz, AC supply
Capacity	320 liters or more
Power	3000 W
No of trays (removable)	08 [size of each tray: 55cm (L) x 27.5cm (W) x 10cm (H)]
Material of tray	Tray made of stainless-steel
Warranty and AMC	Warranty -02 years, AMC- 05 years

7) **Submersible Water Pumps**

Supplying of open well submersible water pumps. It contains: (i) Submersible water pumps and (ii) Water tank.

(i) **Submersible Water Pumps - 04 Nos.**

The pumps must be of 02(two) poles, open-well submersible pumps, at rated speed, 50Hz, single phase AC power supply. Required power rating is 2HP. The pumps should be highly efficient and energy saving. They should have replaceable wearing parts. Each water pump must be connected with high quality water pipe of length 10 meters with all plumbing items (needed to attached the pipe with the pump). Each pump should be connected with the pipe in such a way that the arrangement must be ready to use. These items (pumps with pipes) must be ready to use in all the sense.

Items	Details
Make	Approved Branded

Material	Cast iron/ Stainless Steel or better-quality material
Power rating	2 HP
Power	1.5 kW
Suc. pipe size	65 mm or as per requirements
Del. pipe size	50 mm or as per requirements
Warranty and maintenance	As per makers policy
Additional/extra water pipe	Each pump must be connected properly with 10 m length water pipe (high quality) of suitable diameter with all plumbing items, fixtures/connections. The arrangement, pump and water pipe, must be ready to use on site.

Total Head in Meters	10	12	14	16
Corresponding Discharge in Liters Per Second	9.7 or more	8.2 or more	7.0 or more	4 or more

(ii) **Water Tank (500 Liters) - 01 No.**

Supplying of water tank of capacity 500 liters. It must be an antibacterial water tank. The tank must have an opening/manhole on its top. A cover/lid must be available to cover the opening. The arrangement and holes must be made in the tank in such a way that pipes and submersible water pumps mentioned in the document can be connected easily with the water tank. This item (along with the pumps and pipes) should be ready to use in all the sense. Specifications are is as follows:

Items	Details
Make	Approved branded
Capacity	500 Liters
Material	Plastic/Virgin plastic
No. of Layers	Two/Three layers
Inner layer	Food Grade Plastic
Warranty and maintenance	As per makers policy
Antibacterial action	Yes
Connection with pipes and pumps	Connection or/and hole must be made with the pipes & pumps (mentioned in the document), so that the whole arrangement can be able to circulate water from the tank by using the pumps and pipes.

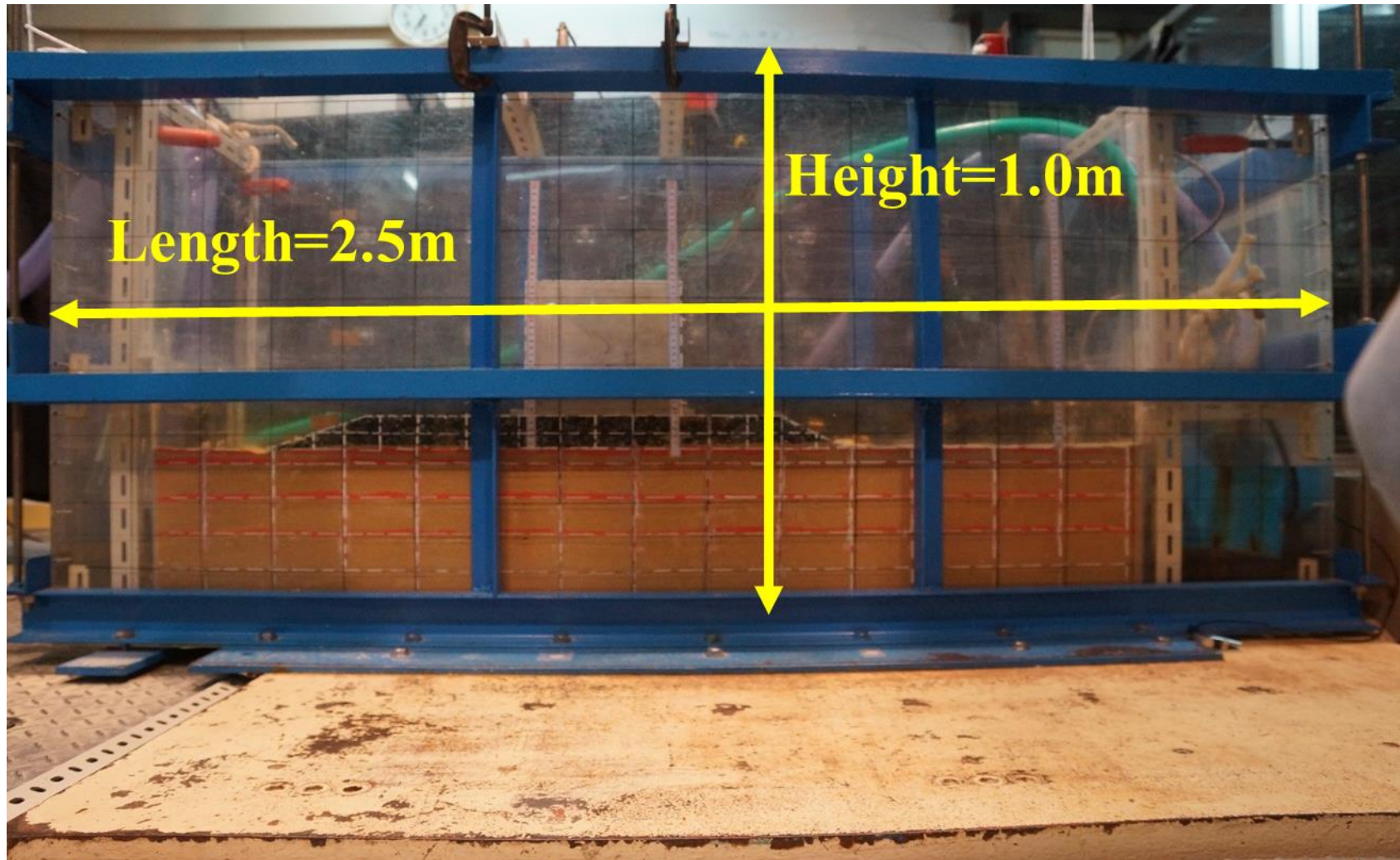
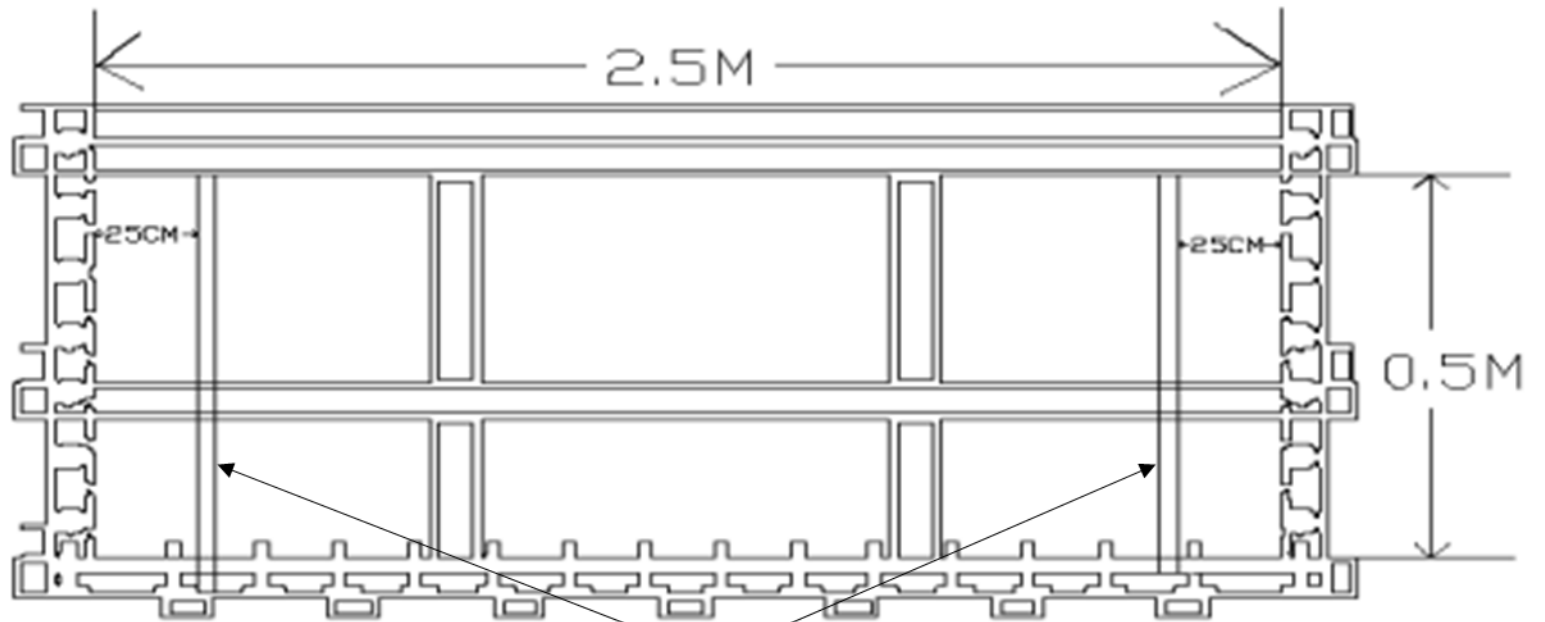


Fig. 1 Soil box (this picture is for indication purpose only. Please ignore soils and model inside the soil box)



Partition Walls

(a) Top view