

# TENDER FORM

**For purchase of Machinery & Testing Equipment Under the  
Project “Center of Excellence for Sportech”**



<b>Tender Number</b>	<b>WRA/ TENDER/ 2017-18/No. 1</b>
<b>Total Nos. of Machines &amp; Equipments</b>	<b>3</b>
<b>Cost of Tender Document</b>	<b>Rs. 2000.00</b>
<b>Sale of Tender Document at WRA</b>	<b>3.06. 2017(10.00 a.m.) to 3.07.2017(4.00 p.m.)</b>
<b>Last date of submission of Tender at WRA</b>	<b>3.07.2017 (5.00 p.m.)</b>
<b>Tender Opening at WRA</b>	<b>4.07.2017 (11.00 a.m.)</b>

## **WOOL RESEARCH ASSOCIATION (WRA)**

P.O. Sandoz Baug Kolshet Road,

Thane - 400 607, Maharashtra.

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## INTRODUCTION

1. Wool Research Association (WRA) is a co-operative research organization under Society's Act 1860, and linked to Ministry of Textiles, Govt. of India. It is engaged in multifarious activities with the objective of rendering scientific and technical assistance to the textile industry, in general and woollen industry in particular. Various activities are described in brief as under:

- A. Research & Development
- B. Training and Man Power Development for Industry
- C. Testing and Evaluation
- D. Technical services and consultancy
- E. Publication, etc.

2. WRA has been designated as the Centre of Excellence (COE) for Sportech by the Government of India and is in the process of setting up the same. WRA intends to procure new machines & testing equipments/Instruments for the COE. Certain machineries and testing equipments/instruments required for the COE are now being procured through the current tender.

3. The tender document contains the following:

- i. Instruction to tenderer
- ii. Tender form
- iii. Terms and Conditions
- iv. Technical Specification of the machinery / equipments
- v. Format of Bank Guarantee

## PART - 1

### INSTRUCTION TO TENDERER

#### 1.0 GENERAL

1.1. Tender shall be issued by **WRA** to manufacturers / suppliers / selling agents, on payment of Rs. 2000/- or 40 US Dollar (non refundable) by Cash/Demand Draft in favour of Wool Research Association, Payable at Thane towards cost of tender documents for one or more items.

1.2 Modifications if any of the above documents will be made by addenda / corrigenda, copies of which will be sent in duplicate to each tenderer before the due date of the tender. One copy shall be signed, sealed and submitted in an envelope along with the tender documents. Tender documents to be submitted, are as detailed hereafter.

The tenderer shall not make any additions / deletions to or amend the text of the documents except in so far as may be necessary to comply with any addenda / corrigenda issued. The tenderers shall use only tender documents as issued for submitting his quote and shall comply with various terms and conditions.

1.3 E-mail, Fax, Telex or Telegraphic tenders shall not be entertained.

1.4 The tender shall be filled in & submitted in English. It will be expedient that all accompanying literature and correspondence shall also be in English. If any of such documents are in other language(s), English translation must be enclosed.

1.5 No claim for costs, charges, expenses incurred by the tenderer in connection with preparation of tender submission and for subsequent clarifications of their tender shall be accepted.

1.6 It is made absolutely clear that the purchaser viz. **WRA reserves the right to withdraw any of the advertised item(s) without any notice.**

#### 2.0 TENDERER TO STUDY DOCUMENTS

2.1 Submission of the tender by the tenderer implies that he has read tender documents and has made himself aware of the specifications of machinery and the terms and conditions.

2.2 The tenderer shall be deemed to have full knowledge of documents and no extra charges consequent on any misunderstanding or otherwise shall be allowed.

2.3 Any query or clarification on the tender document and discrepancies, if any, shall be directed to the Tender Issuing Authority in writing minimum 10 days prior to the due date of submission of tender. The Tender Issuing Authority shall issue clarifications, interpretations, meanings and specific directions, if any, in writing to the tenderer. **One copy of these shall be returned duly signed and seal affixed along with tender during submission.**

### **3.0 SUFFICIENCY OF THE TENDERER**

3.1 The tenderer shall be deemed to have satisfied himself before tendering as to the correctness and sufficiency of his tender and about the rates quoted by him and cover all his obligations under the tender.

### **4.0 METHOD OF TENDERING**

Each and every page of tender documents shall be signed by the authorized person(s) and seal affixed. Authorized person signing shall write in capital letters his full name, designation, current and main office address, Phone No., Fax No. & E-mail address etc.

#### **4.1.0 Authority of signing**

4.1.1 If the tender is submitted by an individual, it shall be signed by him.

4.1.2 If the tender is submitted by a proprietary firm, it shall be signed by the proprietor.

4.1.3 If the tender is submitted by a partnership firm, it shall be signed by all the partners of the firm or by a partner holding the power of attorney for the firm for signing the tender, in which case, a certified copy of power of attorney shall accompany the tender.

4.1.4 If the tender is submitted by a limited company or a corporation, it shall be signed by a duly authorized person or the person holding the power of attorney for signing the tender, in which case a certified copy of the power of attorney shall accompany the tender.

4.1.5 All witnesses and sureties shall be persons of respectable status and probity and their full name, occupations and addresses shall be stated below their signatures.

#### **4.2.0 Stating of Rates**

4.2.1 The tender shall be filled in English with a neat hand / type and all the figures and words shall be legible.

4.2.2 The rates shall be written both in words and in figures. The tenderer shall also show the amount of each item, the total of each section and the grand total of the whole tender

4.2.3 Correction if any, shall be made duly initialing, dating and rewriting. Overwriting must be avoided.

4.2.4 In case of conflict between the figures and words in the rates, the latter shall prevail.

4.2.5 The tenders will be verified for accuracy in the arithmetical calculations.

### 4.3.0 Packing and Submission

4.3.1 The tender shall be submitted on and at the address given in **Appendix-TF** given in Tender Form. Any tender received after this date and time shall not be accepted. Tenders shall be packed, marked and sealed and submitted in original with documents listed below.

### 4.3.2 TECHNICAL BID

Sealed cover ⅁Aö shall contain Technical offer such as,

- a) Technical Specifications in details.
- b) List of items including spare parts with quantities for which the financial bid is being submitted. (Please refer to Annexure I)
- c) The equipment for which bid is being submitted, should contain Client List of internationally or nationally reputed organisation located in India and abroad.
- d) Profile of bidders Organisation.
- e) If the bidder does not manufacture the equipment, authorization of the manufacturer to the bidder for marketing and servicing the equipments in India should be enclosed along with the tender. In the absence of such authorization, the tender will not be considered.

### 4.3.3 FINANCIAL BID

Sealed cover ⅁Bö shall contain financial offer such as,

- a) Bill of Quantities duly completed with price.
- b) The undertaking that Tender Form is duly completed signed and sealed for entering into agreement with terms and conditions for this contract.
- c) Covering letter in duplicate bringing out the tenderer's reservations, if any, regarding compliance with the tender document and his own specific assumption, if any.
- d) Volume I - Tender Form, Appendix - TF , Terms & Conditions , addenda / corrigenda /clarification issued before due date of tender duly signed and sealed (in token of acceptance of documents).

4.3.4. Separate bid for each of the items should be submitted in an envelope super scribed **with the name of the item at the top, date of submission, name and address of the bidder.**

4.3.5. The sealed envelope containing covers ⅁Aö & ⅁Bö as above shall be marked in the name of the **Director, Wool Research Association(WRA), Kolshet Road, Thane- 400607 clearly indicating the name of the item for which the bid is submitted.**

## **5.0 VALIDITY PERIOD OF RATES INTENDER**

Rates quoted by the tenderer shall be valid for a period as given in Appendix-TF from the date of submission or till an extended date mutually as agreed on expiry of the said period.

The Tenderer shall not withdraw or revise or alter any conditions, rate(s) quoted within the stated period, unless he is called upon to do so in mutual agreement / negotiations. WRA reserves the right to cancel the bid if the tenderer revokes or withdraws the tender within the stated period.

## **5.1 OPENING OF TENDER**

5.1.1 The tender shall be opened by the Tender Opening Committee of WRA at **11.00 am on 04/07/2017** in the conference room of WRA. In the event of any change in the date and time of tender opening, the same will be intimated to the tenderer(s) through public notice or individual correspondence. Participants of tenders may be present during opening of tender, if they desire.

## **6.0 AGREEMENT**

6.1 The successful tenderer(s) shall be bound to implement the contract on receipt of intimation of acceptance from WRA.

6.2 The successful tenderer(s) shall bear stamp duty and other expenses pertaining to preparation and execution of contract document / agreement.

## **7.0 PROCEDURE FOR REJECTION**

7.1 The Wool Research Association (WRA), Thane reserves the right to accept or reject any tender or reject all tenders without giving any reasons for their decision.

7.2 Tenders are liable to be rejected in which any of the particulars / prescribed information are either missing or incomplete in any respect and or if the prescribed conditions are not fulfilled.

7.3 Canvassing in connection with tender is strictly prohibited and tender submitted by tenderers who resort to canvassing will be liable to rejection.

7.4 Tenders containing uncalled remarks or any additional conditions are liable to be rejected. Tenderer can bring out in his / their covering letter along with submission of tender cover, his / their any reservations, additions, omissions, and assumptions they might have made while pricing the tender. Tender Issuing Authority reserves the right to ignore such additions, deletion other than brought out in covering letter packed in cover, by the tenderer. Decision of the Wool Research Association (WRA), Thane in this regard shall be final and any non-compliance shall reject the bid.

**PART - 2**

**TENDER FORM**

To,  
The Director  
Wool Research Association  
Kolshet Road, P.O Sandoz Baug,  
Thane- 400607

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**Sub: Supply of textile testing equipment/ machinery to WRA, Thane as per the specifications and quantities mentioned in the tender.**

Dear Sir,

a. Having examined the conditions of Tenders / Specifications of the machinery / equipments, we, the undersigned, offer to supply machines as mentioned in the Annexure I as per the quantity and specifications given in the tender along with spares for three years free of cost.

b. We agree to abide by this tender for the period given in Appendix TF from the opening date fixed for receiving the same and it shall remain binding upon us for a mutually extended period agreed in writing by us.

c. If our tender is accepted, we undertake to supply the Equipment/machinery and install the same in WRA, Thane mentioned in the tender within the specified periods in Appendix-TF on receipt of written order from the Wool Research Association (WRA), Thane.

d. We agree to supply consumable spare parts for 3 years and replacement of the broken/damaged parts during the guarantee / warrantee period without any charge.

e. We agree to train the personnel of WRA in 2 phases at WRA, Thane and principal's premises, as a package, as per the terms and conditions.

f. If our tender is accepted we will, obtain and arrange:

1. Transit insurances
2. Any other statutory obligation, if any, prior of commencement of supply of machinery.

g. We agree to your right to cancel the order or stop payment without prejudice to any other right or remedy for the following failures on our part.

1. Changes to tender are made within Validity Period as specified in Appendix-TF.

2. Supply and installation of equipment/machinery is not commenced within specified period as given in Appendix-TF

3. Obligations under clause (e) above are not fulfilled.

h. Unless and until a formal agreement/purchase order is prepared and executed, this tender together with your written acceptance thereof, shall constitute a binding contract between us.

i. We understand that you are not bound to accept the lowest or any tender you may receive.

j. We agree to make a presentation of the products to be supplied by us, before the

Purchase Committee / Sub-Committee on the date specified by WRA.

k. Fluctuation in foreign exchange rates in respect of the imported equipment/ machinery shall be borne by the equipment/machinery suppliers / authorized Agents

l. We hereby declare that the rates quoted by us are the lowest rates.

m. In case of Imported Items, we have quoted Free On Board value (at nearest foreign Airport/ Sea port) & Also CIF Value at Sahar International Airport, Mumbai or JNPT Navaseva Seaport, Mumbai (whichever applicable). We have specified the freight charges & Insurance Charges separately and also specified the packing dimension, Nos. of Box/Carton & gross weight of each Box/Carton along with the name of the port & country, from where the goods will be dispatched.

Date-

Authorised Signatory (Tenderer )

Designation

(Seal and stamp)



WITNESS 1

Signature

ADDRESS

Name

DATE

WITNESS 2

Signature

ADDRESS

Name

DATE

**APPENDIX – TF**

<b>Sr.No.</b>	<b>Particulars</b>	<b>Remarks</b>
1	Validity of Tender	240 days from the date of opening of tender
2	Address, date and time of submission of the Tender Documents.	Wool Research Association, Kolshet Road, P.O.SandozBaug, Thane (W) 6 400607 Last date of submission of tender at WRA : <b>04.07.2017(5.00 pm)</b>
3	Supply of the machinery etc.	Within 3 months from the date of placement of order or advance paid, failing which order may be cancelled, unless the period is extended by WRA, in writing, in exceptional circumstances.
4	Installation and commissioning of the machinery.	Within 2 weeks after the delivery of the ordered item at WRA, installation and commissioning should be carried out satisfactorily by the supplier. In case, installation & commissioning is delayed by the supplier, penalty of 1% per day of the cost of machine/equipment will be charged unless relaxation in this regard is accorded by WRA, in writing, in exceptional circumstances, subject to maximum penalty of 20% of machine/equipment value. However, the delay should not be more than 3 weeks from the stipulated period of installation & commissioning.
5	Period of warranty of machines.	3Years(comprehensive) warranty* from the date of commissioning of the machine/ equipment.
6	Performance guarantee of machines.	3 Years performance guarantee from the date of commissioning of the machine/ equipment unless and until it has been agreed by WRA, in writing, for lesser period.
7	Submission of the detail schedule for delivery.	Within 21 days from the date of the acceptance of the order placed.

\*warranty terms and condition for Instruments Index S.No. 21 to 25- refer respective specification pages

**SEAL AND SIGNATURE OF TENDERER**

**PART - III**  
**TERMS AND CONDITIONS**

1. Before submissions of the tender, the prospective bidders are expected to examine Technical Specifications of the equipment/machineries allied items required, terms and conditions, etc., given in the Tender Documents. Failure to furnish all information required by the Tender documents may result in the rejection of the bid. Detailed specifications of the items tendered and other accessories should be given, in the bid.

2. The descriptive leaflet (English Version) giving the technical details of the equipment/machineries allied items should be supplied along with the quotation.

3. Minimum required essential spare parts for next 3 years operation are to be supplied along with the equipment/machinery. The list of such essential spare parts shall be submitted along with the tender.

4. All accessories required for using the main equipment/machinery to make it fully operational are to be specified.

5. The suppliers of the machinery / equipment should provide both theoretical and practical training to at least 2 technical personnel per equipment/ machinery of each of WRA, Thane in two phases as described below. Training is to be imparted after commissioning the machinery or at an appropriate stage.

**Phase I: Training at the Principals' Factory:** - All expenses of the trainees viz. Travel (domestic or abroad), Boarding, Lodging, Local Conveyance etc shall be provided by the equipment/machinery manufacturer/Supplier/tenderer.

**Phase II: Training at site:** Hands on training at the time of installation and commissioning of the machinery inside the WRA, Thane premises.

6. The price quoted should be exclusive of duty, Service Tax, installation etc., which should be shown separately in the bid, if applicable. Freight and Insurance charges are to be indicated separately and the same will be paid at actual against supporting documents produced. Packing, forwarding and other charges as applicable are to be indicated separately in the tender.

7 (a) The terms of payment in case of indigenous equipments/ machineries & accessories shall be as under:

- i) An advance amount of 20% of the machine/instrument cost (ex-factory) may be paid against Bank Guaranty of same amount on confirmation of acceptance of the order.
- ii) 20% payment will be paid on the delivery of the machine/instrument at WRA, Thane, along with the release of Bank Guaranty of advance amount.
- iii) 50% payment will be paid on the successful Installation & Commissioning of the equipment, within a period of 2 weeks after delivery, followed by imparting of training to consignee's technicians. Any delay will invite penalty as mentioned in Appendix-TF.
- iv) Balance 10% payment will be retained as performance security and released after successful completion of Performance guarantee period as mentioned in Appendix-TF. Alternatively, Bank Guarantee (BG) of the equivalent amount (10%) valid for a period mentioned in Appendix-TF will have to be submitted by the tenderer/ supplier/ manufacturer as performance security (Please refer to Annexure II).

7 (b) In case of Imported Items, 100% Payment will be made through irrevocable Letter of Credit. LC money will be released by our bank only after inspection and successful installation and commissioning of machine/instrument at WRA premises, installation and commissioning should be made within a period of 2 weeks after delivery of the machine/equipment. Any delay will invite penalty as mentioned in Appendix-TF. The firm on whom order will be placed or his local supplier/agent will be responsible for installation, commissioning, demonstration of satisfactory performance of the machine/instrument and imparting training to the technical personnel of WRA. However, involvement of the respective principals will be preferable. An undertaking to this effect along with the bank guarantee form of 10% value of the ordered amount will be required from the supplier/agent to WRA for a period mentioned in Appendix-TF as performance guarantee, from the date of commissioning of the machine/ equipment.

**7 (c). Earnest Money Deposit**

Tender must be accompanied by Earnest Money Deposit (EMD) as indicated in Annexure-I for each item being supplied in the form of Demand Draft or Banker's cheque in favour of **Wool Research Association - COE for Sportech** Payable at Thane. EMD shall be paid in Indian

currency only. In case of receipt of EMD in Indian currency from abroad, same shall be refunded in Indian currency only. WRA will not be responsible for refunding the EMD in foreign currency. The EMD deposit by the successful bidders shall be held back towards the security deposit and will be refunded after successful installation, trial and training. EMD should remain valid for a period of forty five days beyond the final bid validity period. The EMD of the unsuccessful bidder will be returned within one week from the date of opening of the technical bids.

8. Delivery of the equipment/machineries should be as per the commitment from the date of receipt of initial payment against acceptance of order in case of indigenous machinery and should not be extended.

**9. The pre-installation requirements including space, nature of civil work, powerpoint, power requirement etc. are to be mentioned clearly in the technical bid.**

10. Separate bid for each of the items should be submitted in an envelope superscribed with the name of the item at the top, **NAME, ADDRESS OF THE BIDDER AND DATE OF SUBMISSION.**

The sealed envelopes shall be marked in the name of **“Director, Wool Research Association (WRA), Thane - 400607.**

11. The list of organizations (with full addresses, telephone / fax no., e-mail addresses etc.) in India and abroad to which the equipment/machinery were supplied is to be provided in the bid for our reference. Preference will be given if the supplies are made to internationally reputed test houses both in India and other countries particularly for the bided equipment (evidence of such supplies to reputed test houses may be enclosed.)

12. Validity of the tender should be 240 days from the date of opening of tender. The tender may be rejected if the validity is not given accordingly.

13. The supplier should take responsibility for delivering, installing and commissioning of the machinery inside the premises of WRA, Thane at designated site.

14. Annual Servicing / Maintenance charges for the next 3 years after the expiry of warranty period should be indicated separately in the tender.

15. Late / delayed tender offers will not be considered at all.
16. Any non-fulfillment of the stipulation given above will make the bid invalid.
17. If the tenders received are not sealed properly, they will not be considered at all.
18. **Wool Research Association (WRA), Thane reserves the right to accept or reject any or all the bids either in full or part without assigning any reason thereof at any stage.**
19. The local supplier shall be entirely responsible for all taxes, duties, license fees etc., incurred until delivery of the contracted goods (to the purchaser) up to place of delivery.
20. The delivery, installation & commissioning period of the equipment/machinery as agreed should not be extended under normal conditions. Suitable penalty for non execution of the order may be enforced **refer- Appendix-TF.**
21. The equipment/machinery & accessories should be delivered, installed and commissioned at WRA, Thane. Service / operation / instruction / calibration manuals (in English) tool kit and gauges must also be supplied along with the machinery and accessories.
22. During the guarantee / warrantee period, servicing / maintenance should be undertaken regularly, subsequently Servicing/maintenance should be undertaken by the manufacturer or authorized agency of the manufacturer.
23. **Warranty and performance guarantee period of three years as mentioned in Appendix TF (points 5 & 6) should be given in respect of all the machinery and accessories supplied. Terms for service contract after the expiry of said warranty period are to be quoted separately.**
24. The manufacturer / supplier may indicate the Status of the Manufactured Product / or of the performed services as regards to ISO quality system.
25. List of servicing centers in India has to be indicated with detailed address, telephone no. / fax no. / e-mail address etc.
26. All pre-installation requisites such as Cables, Plugs etc. should be provided by the supplier along with the equipment/ machinery. WRA, Thane concerned will provide adequate space,

electricity & water, as the case may be, for the successful installation and commissioning of the equipment/ Machinery.

27. The Capacity statement of equipment, plant and past performance details should be provided.

28. In case of Imported Items, Please quote Free On Board value (at nearest foreign Airport/ Sea port) & Also CIF Value at Sahara International Airport, Mumbai or JNPT Navaseva Seaport, Mumbai (whatever applicable). Please specify the freight charges & Insurance Charges separately. Also specify the packing dimension, Nos. of Box/Carton & gross weight of each Box/Carton. Please specify the name of the port & country, from where the goods will be dispatched.

29. Any dispute shall subject to Jurisdiction of Thane, Maharashtra.

**NOTE:** The bidder has to specifically state that the clauses one to all as above has been read and understood and agree to comply all the above mentioned clauses individually.

**Annexure I**

**Technical Specifications of the Machineries / Equipments**  
**(Including EMD)**

<b>S. No.</b>	<b>Name of the Instruments</b>	<b>EMD* to be paid (In Rs.)</b>	<b>PAGE NO</b>
1	Braiding Machine for Carbon Fiber	70,000	17
2	Vacuum Pump	10,000	19
3	UTM of 100KN Capacity with all Accessories	1,80,000	20

**\* EMD amount may change subject to approval from Office of Textile Commissioner, Mumbai**



## MACHINERIES AND EQUIPMENTS

### 1. Braiding Machine for Carbon Fiber

	<b>EMD, to be paid (Amount in INR ) Rs70,000/-</b>
A	<b><u>Braiding Machine</u></b> <b>General Specifications :</b> <ul style="list-style-type: none"><li>▪ Carrier positioning unit should have easy bobbin exchange.</li><li>▪ All yarn guides should be particularly suitable for carbon as well as glass fiber yarns.</li><li>▪ Capable for connection to appropriate Take off systems like:<ul style="list-style-type: none"><li>• Multi roller take-off</li><li>• Caterpillar</li><li>• Robot</li></ul></li><li>▪ Machine should be individually motor driven.</li><li>▪ Require Hand wheel for manual movement of carriers.</li><li>▪ IP65 protection is mandatory for electrical systems.</li><li>▪ Capable for introduction of zero axis carbon/ glass yarn</li></ul>
	<b>Technical Specifications :</b> <b>Machine Related :</b> <ul style="list-style-type: none"><li>▪ No. of carriers - 48</li><li>▪ Required diameter of horn gear or pitch size 110mm accordingly.</li><li>▪ Horn gear should be operated at variable speed.</li></ul>
	<b>Power supply Related :</b> <ul style="list-style-type: none"><li>▪ 220 V single phases 50 HZ.</li><li>▪ Machine should be provided with adequate protection against power fluctuations and surges.</li><li>▪ Control box should be a minimum size of 400 x 500 x 200mm.</li></ul>
	<b>Carriers &amp; Bobbin Related :</b> <ul style="list-style-type: none"><li>▪ Individual carrier tension control using a horizontal torsion spring mounted in the carrier body.</li><li>▪ The carrier release tension must be capable of being adjusted by the horizontal torsion spring.</li><li>▪ The carrier to be fitted with rollers and eyelets manufactured in brass.</li><li>▪ The carrier to use a flanged bobbin of 150mm traverse length x 65 mm flange diameter.</li></ul>

	<p><b>Safety &amp; Anomaly detection Related :</b></p> <ul style="list-style-type: none"> <li>▪ The machine should be capable of detecting the following anomalies:</li> <li>▪ Opened safety shield door</li> <li>▪ Empty bobbin Electrical surge</li> <li>▪ Overload of drive mechanism</li> </ul>
	<p><b>Machine should be equipped with :</b></p> <ul style="list-style-type: none"> <li>▪ 48 Braiding bobbins (2 set)</li> <li>▪ 48 tension spring (2 set)</li> <li>▪ Round polished Braiding rings with holders (Quantity : 02)</li> <li>▪ Vibration motor on braiding ring for a perfect laying of fibers (Quantity:02)</li> </ul>

## 2. Vacuum Pump

Sr no	EMD, to be paid (Amount in INR) Rs 10,000
1	<p><b>Technical Specification</b></p> <p>Oil lubrication Rotary Vane Vacuum pump ó 01</p> <p>Pump Speed ó 100 M<sup>3</sup>/hr</p> <p>Ultimate Total Pressure less than 1.6 Torr.</p> <p>Noise Level: less than 80 db.</p> <p>Type of protection: 55 F or better</p> <p>Receiver Tank: 200 Liter. SS 304 Thickness 3.00 mm</p> <p>Digital Vacuum Gauge with timer</p> <p>Inlet, Outlet with connection by 1 inch SS pipe and limit valve for Receiver tank</p> <p>Manifold: 8 opening, Ball valves ½ Inch, vacuum dial gauge.etc.</p> <p>Vacuum Gauge, Receiver tank and manifold are connected in line with 1 inch ID SS 304 pipe.</p> <p>Digital vacuum display with timer, control Panel with Volt meter, Ampere meter MCB. Separately control for each pump.</p> <p>Ball Valve between Pump to Receiver tank and Receiver tank to Manifold.</p> <p>Power supply: 230/415 AC, Frequency: 50 Hz.</p> <p>Electrical circuit diagrams and maintenance manual must be supplied with equipment</p> <p>Basic Spare part Kit</p>

### 3. UTM of 100 KN capacities with All Accessories

Sr no	EMD, to be paid (Amount in INR) Rs 1,80,000
	<p><b>Technical specifications</b></p> <ol style="list-style-type: none"> <li>1) Capacity: 100kN</li> <li>2) Static tension/compression load cell: 100kN</li> <li>3) Testing speed range: 0.001 to 500mm/min</li> <li>4) Crosshead return speed: 0.001 to 600mm/min</li> <li>5) The machine shall have total crosshead travel of min 1500mm or more (higher travel preferred)</li> <li>6) Load cell and extensometer transducers available for the system shall include self- identification electronic in the connector directly attached to these transducers which automate the calibration of these devices. For safety and data integrity issues operators should not have to select the capacity of a load cell from a list or type in a value in order to calibrate different load cells (extensometers). Manually calibrated load cells or extensometers requiring calibration weights or calibration micrometer fixture are not acceptable.</li> <li>7) The load frame shall be floor standing, shall have servo motor and low-backlash ball screws and offer high frame stiffness (specify value, high stiffness preferred)</li> <li>8) The load frame shall be able to communicate through an Ethernet interface to computer</li> <li>9) The load frame shall have standard features like limit switches, emergency stop, T-slots on side covers, built-in ruler scale, 4 or more Ethernet ports for connecting external devices</li> <li>10) Machine shall conform to all relevant European CE health and safety directives</li> <li>11) Data acquisition rate at the PC:             <ol style="list-style-type: none"> <li>a) 1000Hz simultaneous on load or better, extension, and strain channels</li> <li>b) Position measurement accuracy:                 <ol style="list-style-type: none"> <li>i. <math>\pm 0.02</math>mm or 0.05% of displacement (whichever is greater) or better</li> <li>ii. Crosshead speed accuracy (Zero or constant load): <math>\pm 0.2\%</math> of set speed or better</li> </ol> </li> </ol> </li> <li>12) Load measurement:             <ol style="list-style-type: none"> <li>a) Through pancake/shear web type loadcell of 100kN capacity</li> <li>b) Shall meet or exceed requirements of ASTM E4, ISO 7500-1</li> <li>c) Load range and accuracy: 0.5 to 100% of the loadcell capacity with accuracy of <math>\pm 0.5\%</math> of measured value</li> <li>d) Mechanical overload protection of 150% or better</li> </ol> </li> <li>13) Strain and extension measurement:</li> </ol>

	<p>Shall meet or exceed requirements of ASTM E83, ISO 9513</p> <p>14) Latest material testing software with data acquisition and analysis tools</p> <ol style="list-style-type: none"> <li>a) Compatibility with latest Windows OS</li> <li>b) Free software upgrades for next 3 years</li> <li>c) Closed loop control with position, strain, stress or load rate modes</li> <li>d) Tabbed navigation for simple user interface</li> <li>e) Built-in library of test methods as per various ASTM and ISO standards including but not limited to ASTM D4632, ASTM D4533, ASTM D5035, ASTM D4595, ASTM D4833, ASTM D6241, ISO 12236, ASTM D6637</li> <li>f) Installation engineer shall be able to create new test methods as desired</li> <li>g) Advanced 3-level Windows style password security</li> <li>h) Auto and manual data backup facility</li> <li>i) Multiple graphs like Stress vs Strain, Force vs Position, Force vs Strain, Stress vs Time, Strain vs Time etc. on same screen should be available</li> <li>j) Curve regeneration and post-test analysis should be possible</li> <li>k) Real time display of data, curves and modulus values</li> <li>l) Fully customizable report format</li> <li>m) Fully customizable test screen layout</li> <li>n) Unit conversion to SI, metric or Imperial should be possible</li> <li>o) Loadcell overload and crosshead over-travel protection through software</li> <li>p) Built-in results like force, stress, strain, position, time, tensile strength (force/width), %elongation @ specified load, elongation at max, load @ specified %elongation, ultimate stress, ultimate strain, tear strength, compression strength etc.</li> <li>q) New result generation module to create results with or without formula</li> <li>r) Recall module to see historic data should be available</li> <li>s) Raw data in .csv format should be available</li> <li>t) Free online technical support</li> <li>u) Complete set of statistics to be available</li> </ol> <p>15) Jaws and Fixtures:</p> <ol style="list-style-type: none"> <li>a) Hydraulic wide-width grip with flat or serrated faces for testing of high strength multifilament material 500kN/m strength (ASTM D4595), sample width 200mm, sample thickness upto 10mm. It shall be possible to cascade other fixtures on top of hydraulic grips.</li> <li>b) Capstan (Roller type) grip with 200mm width for testing of high strength textile material as per ASTM D 6637-11.</li> <li>c) Hydraulic/pneumatic/mechanical grips with suitable faces for testing as</li> </ol>
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	<p>per ASTM D5053, ASTM D5034, ASTM D4632,ASTM D4533</p> <p>d) Fixture for index puncture: ASTM D4833</p> <p>e) Fixture for CBR puncture: ASTM D 6241 &amp; ISO 12236</p> <p>f) Pyramid puncture tester as per ASTM D5494 including secondary frame, ASTM D1578 fixtures, 5kN and100N capacityloadcells, single bollard grips and dedicated analysis software</p> <p>g) Fixtures for analysis of Polymer Gabion, Geomembrane</p> <p>16) Non-contact Video extensometer with following accessories to be offered.</p> <p>a) It should work on pattern recognition technology to measure point to point strain in real time.</p> <p>b) Should be capable to achieve ASTM E83 class B1, ISO 9513 class 0.5</p> <p>c) Variable gauge length should be possible</p> <p>d) Suitable for testing variety of materials</p> <p>e) Direct measurement without any calibration procedures</p> <p>f) GigE PoE camera, 30fps, 1624 x 1234 or better</p> <p>g) Cool LED light source with suitable stand</p> <p>h) Lens for 40x30mm FOV (field of view), 0.2μm or better resolution</p> <p>i) Lens for 250x250mm FOV, 1μm or better resolution</p> <p>j) Lens for 100x100mm FOV, 0.4μm or better resolution</p> <p>k) Suitable sturdy tripod or mounting bracket</p> <p>l) Dedicated high end controller with data rate of 2000Mbits/s or better, 4x GigE PoEcameraports, usable 300GB or higher for data storage</p> <p>17) Basic spares kit with support for 3 years</p> <p>18) Installation, commissioning and training of the machine to be included free of cost</p> <p>19) Demonstration of testing of high strength multifilament fabric has to be arranged before supply of machine. Purchaser reserves the right to reject any incomplete or incompetent bid partially or totally.</p> <p>Optional Accessories:</p> <ol style="list-style-type: none"> <li>1. <b>Wedge Grip with 100kN capacity</b>  Sample Width : 50mm  Thickness : Up to 10mm  For Round Specimens: Diameter up to 15mm</li> <li>2. <b>Environmental Chamber including digital controller</b>  Temp Range : -70<sup>0</sup>c to 300<sup>0</sup>c  Internal Dimensions: Suitable for supplied grips  Glazed Window for optical measurement  Support Roller and Rail mechanism  Liquid Nitrogen Dewar  Suitable tie-rod set</li> </ol>
	<p><b>Necessary accessories for performing abovementioned tests</b></p>

## Annexure II

### **FORMAT OF BANK GUARANTEE OF 10% OF CONTRACT VALUE (ON NON-JUDICIAL STAMP PAPER OF RS.100/-)**

Bank guarantee no. \_\_\_\_\_ Date:

This deed of guarantee made this \_\_\_\_\_ day of \_\_\_\_\_  
2017 (Name and address of the Bank) hereinafter referred to as 'the Bank') which expression shall where successors and assignees of the Bank and the Wool Research Association (WRA), Thanewhich expression shall unless repugnant to the context of the meaning thereof include its legal representatives, successors and assignees.

WHEREAS the Wool Research Association (WRA) has placed its Purchase Order bearing No. \_\_\_\_\_ dated \_\_\_\_\_ on (name and address of the party) (hereinafter called 'the supplier' for the supply of \_\_\_\_\_ (name of the machine/equipment).

AND WHEREAS the Wool Research Association (WRA), Thanehas agreed to pay to the supplier final 10% of the value of the equipment on submission of a Bank Guarantee of equal amount, which will be kept valid upto \_\_\_\_\_ being the period of 36 calendar months from the date of Bank Guarantee.

In consideration of the Wool Research Association (WRA), Thanehaving agreed to pay to the supplier Rs. \_\_\_\_\_ Rupees \_\_\_\_\_ only) being the last 10% of the value of the equipment, we (name of the Bank) hereby undertake and guarantee to make repayment to the of the said 10% amount or any part thereof which does not become payable to the supplier by the Wool Research Association (WRA), Thaneyin accordance with the subject to the terms and conditions of the said order within \_\_\_\_\_ days from the date of dispatch / from the date of receipt of the material at site. The Bank further undertakes not to revoke this guarantee during its currency except with the previous consent of the Wool Research Association (WRA), Thaneyin writing and this guarantee shall be a continuous and irrevocable guarantee up to a sum of Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only)

The Bank shall not be discharged or released from this guarantee by any arrangement between the supplier and the Wool Research Association (WRA), Thanewith or without the consent of the Bank or any alterations in the obligation of the parties or by any indulgence, forbearance

shown by the Wool Research Association (WRA), Thaneto the supplier and the same shall not prejudice or restrict remedies against the Bank nor shall the same in any event be a ground of defence by the Bank against the Wool Research Association (WRA), Thane. We (name of the Bank) do hereby undertake to pay an amount equal to 10% of the order value being the amount due and payable under this guarantee without any demur, merely on demand from the Wool Research Association (WRA) stating that the amount claimed is due to the Wool Research Association (WRA). In case the Wool Research Association (WRA) puts forth a demand in writing on the Bank for the payment of the amount in full or in part against this Bank guarantee, the Bank shall considered that such demand by itself a conclusive evidence and proof that the supplier has failed in complying with the terms and conditions stipulated by the Wool Research Association (WRA) in the purchase order and payment shall be made to the Wool Research Association (WRA) without raising any dispute regarding the reasons for any such lapse/failure on the part of the supplier.

This guarantee shall be in addition to and without prejudice to any other securities or remedies which the Wool Research Association (WRA) may have to hereinafter possess against the supplier and the Wool Research Association (WRA) shall be under no obligation to marshal in favour of the Bank any such securities or fund or assets that the Director, WRA may be entitled to receiving or have a claim upon and the Wool Research Association (WRA) at its absolute discretion may vary, exchange renew, modify or refuse to complete or enforce or assign any security or instrument.

The Bank agrees that the amount hereby guaranteed shall be due and payable to the Wool Research Association (WRA) on the Director, WRA serving with a notice requiring the payment of the amount and such notice shall be deemed to have been served on the bank either by actual delivery thereof to the Bank or by dispatch thereof to the Bank by Registered Post shall be deemed to have been duly served on the Bank notwithstanding that the notice may not in fact have been delivered to the Bank.

In order to give full effect to the provisions of this guarantee, the Bank hereby waives all inconsistent with the above provisions and which the Bank might otherwise as guarantor be entitled to claim and enforce.



NOTWITHSTANDING anything contained herein before, the liability under this guarantee is restricted to Rs. \_\_\_\_\_ (Rupees \_\_\_\_\_ only). The guarantee shall remain in force till the \_\_\_\_\_ and unless the guarantee is renewed or a claim is preferred against the Bank within three months from the said date all rights of the Wool Research Association (WRA) under the guarantee shall cease and Bank shall be released and discharged from all liability hereunder.

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(SIGNATURE)

PLACE:

DATE:

SEAL

CODE NO.

**NOTE: SUPPLIERS SHOULD ENSURE THAT SEAL AND CODE NO. OF THE SIGNATORY IS PUT BY BANKER, BEFORE SUBMISSION OF THE BANK GUARANTEES.**