No.CSB/CSTRI/35(1)/2019-Stores.    Date : 03.02.2020

To

Sir,

Sub: Inviting Quotations for procurement of Textile Testing Equipment.-Reg.

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With reference to the subject cited above, I am to inform that this Institute invites quotation for supply of following textile testing equipment as mentioned below:-

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<th>NAME OF THE EQUIPMENT</th>
<th>QTY</th>
<th>Specification</th>
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<td>1</td>
<td>Fabric Thickness Tester</td>
<td>1 No.</td>
<td>Enclosed</td>
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<tr>
<td>2</td>
<td>Perspiration Fastness Tester</td>
<td>1 No.</td>
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<tr>
<td>3</td>
<td>Wash Fastness Tester (Launderometer)</td>
<td>1 No.</td>
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<tr>
<td>4</td>
<td>Elmendrof Tearing Strength Tester</td>
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<td>5</td>
<td>Motorised Crock Meter (Rubbing Fastness Tester)</td>
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<td>6</td>
<td>Draper Meter (Fabric Drape Meter)</td>
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<td>7</td>
<td>Digital Pick Counter</td>
<td>2 Nos.</td>
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<td>Pilling Tester</td>
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<td>11</td>
<td>Fabric Stiffness Tester</td>
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<td>12</td>
<td>Fabric Crease Recovery Tester</td>
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<td>13</td>
<td>Hydro Extractor 12 Kg. Capacity</td>
<td>1 No.</td>
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TERMS & CONDITION:

1. The quotation in two bid (Technical Bid & Financial Bid) system should be uploaded in e-procurement only. (website www.eprocure.gov.in). The last date for upload the bid is 24.02.2020 upto 1 P.M.. and the bill will be opened on 25.02.2020 at 2 P.M.

2. The rates quoted should be valid for 120 days. The equipment should be supplied within 30 days from the date of purchase order.
3. The equipment should be supplied to DIRECTOR, CENTRAL SILK TECHNOLOGICAL RESEARCH INSTITUTE, CENTRAL SILK BOARD COMPLEX, BTM LAYOUT, BANGALORE-560068


5. The EMD equal to 2% of the total contract value should be sent by post in the form of Demand Draft drawn in favour of the Director, CSTRI, Bangalore. A scanned copy of the Demand Draft should be uploaded along with the technical bid. The EMD does not carry any interest. Please note that cheques will not be accepted. Quotation received without EMD will summarily be rejected. For claiming exemption of EMD, the necessary MSME/NSIC certificate should be uploaded along with the technical bid.

6. The Supplier shall provide Warranty/Guarantee valid for a minimum period of 12 months from the date of installation of the equipment/machineries. Any defects noticed in the equipment/machineries which is unintentional shall be set right by the supplier free of cost for good performance of the equipments.

7. The equipment should be supplied strictly in conformity of the above specifications, failing which, the equipment has to be taken back at your own cost.

8. For delay & non-supply of the item within the stipulated time, liquidated damages @ 0.5% per week will be deducted from the bill subject to a maximum of 10% of the total cost of the equipment.

9. The performance security equivalent to 5% of the total contract value in the form of Bank Guarantee issued by any Nationalized Bank which shall be valid till three months after the expiry of the Warranty period should be furnished to this Institute within 10 days from the date of receipt of purchase order in the prescribed format.

10. No advance payment will be made. The payment will be released only after delivery of the equipment in good condition as per our specification, Erection and commissioning.

11. The bidders should submit the Bank Details i.e. Bank A/c. No., Bank Name, Branch, IFSC code, Mobile No., eMail ID, Etc. along with quotation.

Yours faithfully,

Sd/-
DIRECTOR
### Specifications of Textile testing Equipments

<table>
<thead>
<tr>
<th>Name of the Equipment</th>
<th>Fabric Thickness Tester – 1 NO.</th>
<th>Perspiration Fastness Tester – 1 NO.</th>
<th>Wash Fastness Tester (Laundrometer) – 1 NO.</th>
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</thead>
<tbody>
<tr>
<td><strong>Standards to meet</strong></td>
<td>- ISO 5084 / IS 7702</td>
<td>- ISO 105 E04 / AATCC 15 / IS 971</td>
<td>- IS/ISO 105 C 10 (part 1 to 5)</td>
</tr>
<tr>
<td><strong>Certification of calibration</strong></td>
<td>- Calibration certificate with NABL logo</td>
<td>- Calibration certificate with NABL logo for weights</td>
<td>- Calibration certificate with NABL logo for speed and Temperature.</td>
</tr>
<tr>
<td><strong>Technical Specifications</strong></td>
<td><strong>Instrument:</strong>&lt;br&gt;The confirmation system for the thickness tester shall comply with ISO 10012-1.&lt;br&gt;<strong>Interchangeable Pressure feet:</strong> A circular presser-foot of diameter of 11.28±0.05 mm, 50.5±0.2 mm, 112.84±0.5 mm&lt;br&gt;<strong>Variable Pressure:</strong> Instrument should be capable of applying pressures of 1±0.01 kPa and 0.1±0.001 kPa can be applied to a test specimen.&lt;br&gt;<strong>Reference plate:</strong> Plane upper surface of at least diameter 50 mm more than the pressure feet.</td>
<td><strong>Stainless steel setup</strong> to house 21 acrylic plats of size 11.5 cm X 6cm and thickness of 0.15 cm between stainless steel base plate and SS upper plate. The loads provided should meet all the standards mentioned above.</td>
<td>**Suitable mechanical laundering device, consisting of water bath containing a rotatable shaft which supports, radially, stainless steel containers [(75 mm ± 5 mm diameter) x (125 mm ± 10 mm high)] of capacity (550 ± 50) ml. the bottom of the containers being (45 ± 10) mm from the centre of the shaft. The shaft/container assembly is rotated at a frequency of (40 ± 2) rpm. The temperature of the water bath is thermostatically controlled to maintain the test Solution at the prescribed temperature ± 2°C. <strong>Steel Balls:</strong> Stainless steel balls of approximately 6 mm dia. <strong>Steel Discs:</strong> Stainless steel balls of 30 ± 2 mm (dia) x 3 ± 0.5 mm (thick), smooth and free from rough edges of mass 20 ± 2 g.</td>
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</tbody>
</table>
Name of the Equipment: - Elmendorf Tearing strength Tester – 1NO.
Standards to meet: - IS 6489 / ISO 9290
Certification of calibration: - Calibration certificate with NABL logo

Technical Specifications:

Instrument:
The apparatus essentially consists of a frame, mounted on a rigid base, carrying a pendulum and pointer assembly. It shall also satisfy the details as given below with respect to various parts.

a. Pendulum, preferably formed by a sector of a circle, suitably mounted, free to swing about a horizontal axis from bearings of very low frictional resistance.

b. Augmenting mass: the apparatus shall have provision of augmenting masses that may be attached to the pendulum sector for further increasing the working capacity of the apparatus.

c. Jaws: a pair of jaws each 16 mm ± 0.5 mm deep and 37 ± 0.5 mm wide, one stationary jaw, fixed with respect to the base, and the other movable jaw, fixed with respect to the pendulum. When the pendulum is in the initial position, ready for the test, the jaws shall be separated by a distance of 2.8 mm ± 0.4 mm and so aligned that the test sample when clamped lies in a plane perpendicular to the plane of oscillation of the pendulum sector with the edges of the jaws gripping the test specimen in a horizontal line, a perpendicular to which through the axis of suspension of the pendulum sector is 104 ± 1 mm long. The angle made by this imaginary line and the vertical shall be 27.5 ± 5°.

d. Pendulum-sector release mechanism, for holding the pendulum-sector in a raised position, and for releasing it without imparting shock.

e. Pointer and pointer-stop, for registering the maximum arc through which the pendulum-sector swings when released: The pointer is mounted on the same axis as the pendulum-sector, there being constant friction just sufficient to stop the pointer at the highest point reached by the swing of the pendulum-sector. The adjustable pointer-stop provides a means for setting the zero of the apparatus.

f. Leveling screws, for leveling the apparatus.

g. Cutting die (specimen size), having essentially the shape and dimensions shown in figure 1. The die is used to cut out the basic rectangular test specimen that is 100 ± 2 mm long and 63 ± 1 mm wide, plus an additional 8 mm of fabric at the top edge of the specimen to ensure that the last portion of the fabric is torn (not ravelled) and 4 mm of fabric at the bottom edge as an aid to centring it in the jaws.

h. Means of making a slit of 20 mm ± 0.5 mm in the centre of the bottom edge of the specimen to initiate the tear. The slit may be cut by the cutting die (as in g.) or, alternatively, the initial cut may be made by a knife (that is mounted on the apparatus) when the specimen is in place.

Figure 1.
**Name of the Equipment**  - Motorised Crock meter (Rubbing fastness Tester) - 1 NO.
**Standards to meet**  - IS 766
**Certification of calibration**  - Calibration certificate with NABL logo for length, Finger dia and Applied pressure on finger.

**Technical Specifications**
- **Instrument:**
  Such a device has one or two alternative sizes of rubbing finger, depending upon the type of textile to be tested as follows.
  a) For Pile Fabrics, Including Textile Floe; Covering - A rubbing finger of 3.2 cm diameter and flat area of 2.5 cm diameter with a circular transition of 0.32 cm radius shall be used. The rubbing finger exerts a downward force of 22 N, moving to and fro in a straight line along a 10 cm track.
  b) Other Textiles - A rubbing finger comprising a cylinder of 1.6 cm diameter moving to and fro in a straight line along a 10.0 cm track on the specimen with a downward force of 9 N shall be used.
  c) Motorised operation and automatic stop function should be available in the equipment.

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**Name of the Equipment**  - Drape meter (Fabric Drape Tester) 1 NO.
**Standards to meet**  - IS 8357
**Certification of calibration**  - Calibration certificate with NABL logo

**Technical Specifications**
- **Instrument** Consisting of:
  a) A pair of horizontal discs of 12.3 cm diameter between which the specimen is held; the lower disc has a central pin for positioning on a holder.
  b) An electric source of light placed directly above the centre of the discs with suitable attachment to give a parallel beam of light.
  c) Arrangement to place a sheet of ammonia process paper horizontally below the draped specimen.
  d) Timer and other devices to aid exposure for prescribed time.
  e) An enclosed box for developing the drape pattern in ammonia vapour.
  4.2 Circular Template - A metal template of 25.0 cm diameter and with a central hole for marking and cutting specimens for drape test.

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**Name of the Equipment**  - Digital Pick Counter – 2 NOS.
**Standards to meet**  - IS 1963
**Certification of calibration**  - Calibration certificate with NABL logo

**Technical Specifications**
- **Instrument:**
  1. Should able to measure ppi or ppm.
  2. Measuring range 20 to 500 per inch.
### Name of the Equipment
- **Pilling tester – 1 NO.**
  - Standards to meet: IS 10971 / ISO 12945-1
  - Certification of calibration: Calibration certificate with NABL logo
  - **Technical Specifications:**
    - **Instrument:**
      - **Pill testing box:** Cubic, with internal dimensions, before lining, of 235 mm. All internal surfaces of the box shall be lined with cork jointing material of 3.2 mm thickness.
      - No. of Boxes: Two.
      - Testing Speed: 60 ± 2 rpm
      - **Rubber tube:** Diameter of Ø 31.5 ± 1 mm x 140 ± 1 mm in length
      - Thickness: 3.2 ± 0.5 mm
      - Hardness: 42 ± 5 degree
      - Tube Weight: 52.25 ± 1g
      - Number of Tubes: 8
      - Accessories: Accessories for preparation of tubing

### Name of the Equipment
- **Motorised Twist tester – 1NO.**
  - Standards to meet: IS 832
  - Certification of calibration: Calibration certificate with NABL logo for length & counter
  - **Technical Specifications:**
    - **Instrument:**
      - Gauge length / Clamp Distance: 10 – 500 mm
      - Twist speed: 0 – 500 rpm or more
      - Yarn count range that can be tested: 1 to 499 tex
      - Yarn tensioning: 1 to 90 grams
      - Units: TPI / TPM
      - Twist range: 1 to 9999
      - Instrument should be capable of testing both filament (singles and ply yarns) and spun yarns.

### Name of the Equipment
- **Fabric Shrinkage Apparatus 1NO.**
  - Standards to meet: ISO 6330 / AATCC 135&150 / IS 2977
  - Certification of calibration: Calibration certificate with NABL logo for Template and Scale
  - **Technical Specifications:**
    - It should consists of
      1) Water tight tray / container (Not needed)
      2) Shrinkage Template
      3) Shrinkage Scale
      4) Two pieces of flat glass plates of 6mm thickness and 600 mm X 600 mm size.

Shrinkage Template:
Calibrated Acrylic template to mark the datum points on the fabric.

Shrinkage Scale:
Calibrated Acrylic / Metallic Scale to measure the shrinkage percentage directly.

### Name of the Equipment
- **Fabric Stiffness Tester - 1NO.**
  - Standards to meet: IS 6490
  - Certification of calibration: Calibration certificate with NABL logo for scale and angle.
  - **Technical Specifications:**
    - **Instrument:**
      Stiffness Tester - having the following parts:
a) Horizontal Platform - It shall have a minimum area of 40 X 200 mm and a flat smooth and low friction surface, such as polished metal. It shall be preferably equipped with spirit level for leveling.
b) Indicator - It shall be inclined at an angle of 41.5° below the plane of the platform surface from the edge of the platform.
c) Scale - It shall be of 25 x 200 mm weighing 10 ± 2 g/cm with rough bottom surface to grip the specimen and graduated in centimeters and millimeters.

Name of the Equipment - Fabric Crease Recovery Tester 1 NO.
Standards to meet - IS 4681
Certification of calibration - Calibration certificate with NABL logo of weight and Dial angle.
Technical Specifications - Crease Recovery Tester - The instrument shall consist of the following essential parts:
   a) A circular scale in the vertical plane, graduated in degrees along its periphery and capable of being read to an accuracy of ± 0.5° without parallax error.
   b) Specimen clamp to hold one limb of the specimen in such a way that the fold lies in a horizontal line on the axis of the circular scale, while the distance between the edge of the grip and the axis shall be about 2 mm. The clamp shall be rotatable so as to adjust the free limb of the specimen in the vertical or horizontal position, depending upon the type of instruments used.
   c) Means for leveling the apparatus.
   d) Loading Arrangement - It shall be capable of applying a load of 1 kg uniformly over 15 x 15 mm area of the folded specimen.
   e) Two set of accessories to hold the sample under 1 kg pressure.

Name of the equipment: Hydro extractor- 12Kg – 1NO.
Stainless steel Top load horizontal drum type hydroextractor of 12kg capacity. 12kg of material can be loaded per batch. No grouting required. Warranty on motor and equipment should be one year minimum. Should work on three phase power supply 50 Hz with Working voltage >= 400Volts. Should have BEE star rating of 3 or more. Installation should be inclusive in the scope of supply. Noise level should be less than 80 decibel. Suitable braking system is to be provided for stopping the machine.