# NIRMA UNIVERSITY Institute of Technology Civil Engineering Department

Annexure- II/2

# **Specifications of Equipment for Tender Bid cum Quotation**

Name of Equipment/ Assembly  Related Standards to be accorded  Features/capabilities /Specifications  The equipment shall consist loading frame with the following characteristics:  Clamping systems for 200 mm wide sample with mechanical jaws in accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration  Provide separate quantations for equipment to facilitate (i) testing for
Related Standards to be accorded  Features/capabilities /Specifications  The equipment shall consist loading frame with the following characteristics:  Clamping systems for 200 mm wide sample with mechanical jaws in accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration
Features/capabilities /Specifications  The equipment shall consist loading frame with the following characteristics:  Clamping systems for 200 mm wide sample with mechanical jaws in accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration
Features/capabilities //Specifications  The equipment shall consist loading frame with the following characteristics:  Clamping systems for 200 mm wide sample with mechanical jaws in accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration
characteristics:  Clamping systems for 200 mm wide sample with mechanical jaws in accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration
<ul> <li>Clamping systems for 200 mm wide sample with mechanical jaws in accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)</li> <li>The gauge length of the sample shall be 200 mm.</li> <li>Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.</li> <li>Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)</li> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
accordance with ASTM D5262, for geotextiles, geogrids, geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration
geomembranes, and geocomposites (with thickness up to 10 mm)  The gauge length of the sample shall be 200 mm.  Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.  Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  Vibration isolator shall be provided at the bottom of the frame.  Data Acquisition System with data logging for atleast 10 sets of tests  Digital display for individual displacements  System password to be provided for calibration
<ul> <li>The gauge length of the sample shall be 200 mm.</li> <li>Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.</li> <li>Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)</li> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
<ul> <li>Each sample shall have a facility to provide dead weight from 1 kN to 250 kN.</li> <li>Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)</li> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
<ul> <li>250 kN.</li> <li>Mechanical system(s) for measurement of elongation for the length of 75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)</li> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  • Vibration isolator shall be provided at the bottom of the frame.  • Data Acquisition System with data logging for atleast 10 sets of tests  • Digital display for individual displacements  • System password to be provided for calibration
75 mm and 100 mm for each specimen at the centre of the sample. The measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  • Vibration isolator shall be provided at the bottom of the frame.  • Data Acquisition System with data logging for atleast 10 sets of tests  • Digital display for individual displacements  • System password to be provided for calibration
measurement system shall be capable of measuring elongation using the digital dial gauge or LVDT having 25 mm capacity and 0.01 mm least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  • Vibration isolator shall be provided at the bottom of the frame.  • Data Acquisition System with data logging for atleast 10 sets of tests  • Digital display for individual displacements  • System password to be provided for calibration
least count, i.e. one can use either digital dial gauge or LVDT at his/her will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)  • Vibration isolator shall be provided at the bottom of the frame.  • Data Acquisition System with data logging for atleast 10 sets of tests  • Digital display for individual displacements  • System password to be provided for calibration
<ul> <li>will in the system. (In case the Digital dial gauge is used, the sleep time shall be avoided for continuous monitoring of data)</li> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
<ul> <li>shall be avoided for continuous monitoring of data)</li> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
<ul> <li>Vibration isolator shall be provided at the bottom of the frame.</li> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
<ul> <li>Data Acquisition System with data logging for atleast 10 sets of tests</li> <li>Digital display for individual displacements</li> <li>System password to be provided for calibration</li> </ul>
<ul><li>Digital display for individual displacements</li><li>System password to be provided for calibration</li></ul>
System password to be provided for calibration
* *
Drovida congrete quotations for agricument to facilitate (i) testing for
Provide separate quotations for equipment to facilitate (i) testing for
a single sample and (ii) testing for 02 samples simultaneously.
Make • Clear mention <b>Make</b> in the bid
Electrical Supply • Electricity supply requirements (voltage and phase) shall be clearly
Requirement mentioned
Mention in case of Requirement of UPS (Uninterrupted Power Supply)
with capacity
Size and weight  • Detachable/ Assemblable Units: The equipment shall be dismantlable
as placed in the available infrastructure. The maximum dimensions of
the door are given below.
• The dimension of any unit/ part of the apparatus shall not exceed 2.7
meters (L) x 1.5 meters (W) x 1.9 meters (H).
Mention area required for positioning of equipment.
Mention total weight of the equipment.
Mention specific requirement of foundation/pedestal for resting the
equipment, if any.
Mention need of vibration isolated, if needed
Water and air supply  • Mention the requirement to supply compressed air, if any.
requirements • Mention the requirement and arrangement of water supply, if any.
Compatibility of  • In case of accessories from make differing to the make of equipment,
parts compatibility shall be checked and certified by the bidder.
Calibration • The calibration certificates shall be provided with equipment and
Certificates, accessories.
technical manual and • Validity of calibration certificate for all devices shall not be less than
SOP one year.

### NIRMA UNIVERSITY

# Institute of Technology

### Civil Engineering Department

Technical manual and Standard Operating Procedure documents shall be provided.