

Tender document

Department of Civil Engineering
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Quotations (*both technical and financial*) are invited for the "**Multi-speed loading frame with DAQ**" satisfying the following technical requirements (**Quantity - 01**). The detailed Specification of the Multi-speed loading frame with DAQ is described below.

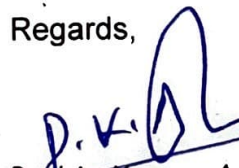
Technical Specification for Multi-Speed Loading Frame

- ❖ Vertical clearance for performing experiments shall be minimum 798 mm.
- ❖ Horizontal clearance available for performing experiments shall be at least 324 mm.
- ❖ Platen diameter of the loading frame shall be at least 149 mm.
- ❖ The machine shall be capable of applying loading in displacement (or deformation) control mode with a loading rate (i.e., platen speed) between 0.0001 to 100 mm/min.
- ❖ The load cell capacity of the loading frame should be at least 50 kN. Some of the other details on the load cell are as follows:
 - Type: S-shaped
 - Non-Linearity: $< \pm 0.026\%$ FSO
 - Hysteresis: $< \pm 0.021\%$ FSO
 - Non-Repeatability: $< \pm 0.011\%$ FSO
 - Creep (30 Minutes): $< \pm 0.031\%$ FSO
 - Zero Balance: $\leq \pm 1.0\%$ FSO
 - Safe Overload value shall be above 145% of the rated capacity
 - Ultimate Overload value shall be above 240% of the rated capacity
 - The operational temperature range for the load cell: 0°C to 60°C
 - The temperature effect on output should be less than 0.0015% FSO/°C
 - The temperature effect on zero should be less than 0.0020% FSO/°C
- ❖ The displacement sensor capacity shall be a minimum of ± 19 mm. Some of the other details on the displacement sensor are as follows:
 - The linearity deviation shall be within $\pm 1\%$ of the rated capacity.
 - The repeatability shall be within $\pm 0.1\%$ of the rated capacity.
 - The hysteresis value shall be within $\pm 0.5\%$ of the rated capacity.
 - The safe temperature range is from 0°C to 50°C.
- ❖ The loading frame should have a microprocessor-based touch panel digital display for changing the testing parameters and showing real-time experimental data.
- ❖ Data acquisition (DAQ) system: The DAQ system should be robust in such a way that it can record the load-deformation data. The DAQ should have the functionality to collect the data using an external storage device (e.g., a typical USB).
- ❖ The DAQ should be capable of recording load data with the least count of minimum 0.005 kN.

Additional Terms and Conditions

- ❖ The bidder should be a registered OEM or must have valid authorization from a particular OEM.
- ❖ The bidder should have a valid ISO certificate – ISO 9001:2015, ISO 37001:2016 and ISO 45001:2018.
- ❖ AFFIDAVIT ON RUPEES 100 STAMP PAPER stating that the bidder is not under liquidation & blacklisted by any State Govt. or Central Govt. Organization or any Govt. undertaking department or any PSU's.
- ❖ Bidder must have dedicated service team for the after sales service. Bidder should have Escalation Matrix and all the details must be attached along with the bid documents.
- ❖ Min. 10 years spare support on cost basis by bidder after warranty period.
- ❖ Bidder should supply instruments with NABL calibration certificates wherever applicable.
- ❖ Warranty should be a minimum of one year.
- ❖ Delivery should be within 4 weeks.

Regards,



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