

CHAPTER - 4

ELIGIBILITY CONDITIONS, SPECIFICATIONS AND ALLIED TECHNICAL DETAILS

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4.1 Minimum Eligibility Criteria for Participation in Tender

The bidder should have supplied and commissioned 2 Nos of same or similar capacity machine/instrument during the last 05 years (as on date of bid opening) in Govt institutes/ Govt. research organizations/ Public funded Universities/National Testing laboratories/Reputed private firms in India. The bidder / supplier should provide the PO copies, Installation reports and Performance Certificate of the same POs.

(Note: Firms not meeting the minimum eligibility conditions will not be considered for technical evaluation.)

Technical Specifications of Drop Test Machine

S. No	Feature	Specifications
	DROP TEST MACHINE	
1.	Payload Capacity	Maximum 250 kgs
2.	Maximum Specimen Size Accommodation	W2000 mm x D2000 mm x H1000 mm
3.	Drop Height Range	Adjustable from 2.5cm to 180 cm
4.	Base Dimension	Minimum 3000 mm x 3000 mm
5.	Main Assembly Release Mechanism/Holding mechanism	Electric/motorized/Hydraulic/pneumatic system
6.	Main Assembly drop height adjustment	Automatic
7.	Drop Options	System designed for flat, edge and corner drops
8.	Base Plate	Heavy-duty fabricated welded steel inertia base designed for dynamic impact loads generated by a 250 kg payload dropped from heights up to 180 cm. The complete foundation details and requirements shall be provided.
9.	Fixtures	Edge and corner drop fixtures
10.	Safety Features	Emergency stop button, and protective barriers
11.	Standard compliance	IS7028, JIS Z 0200, JIS Z 0202, ISO 2248, ISTA, ETSI, ASTM and IEC
12.	Interconnecting cables	At least 7m
13.	Accessories & others	It is the responsibility of the supplier/ bidder/OEM to include all the essential accessories required for proper functioning of the drop test machine at CSIR-SERC. List of accessories to be given. Any special tools required for routine/ preventive & Breakdown maintenance should be provided. Training necessary for operating the machine should be provided – Onsite 3 days for 5 personnels.
14.	Acceptance at CSIR-SERC	Bidder shall conduct the acceptance test as per Annexure-A for the Drop test machine after installation at CSIR-SERC.
	COMPUTER SPECIFICATIONS	
15.	Preferred Make	Reputed Make
16.	Processor	Intel Core i910900 X 3.7GHz 2933MHz 10C165WCPU or better
17.	RAM	32GB nECC, DDR42933MHz memory support to 256GB; Total 8 DIMM Slots or better
18.	Hard Disk	1TBM.22280 PCIe NVMe TLC Solid State Drive &1TB SATA7200RPM HDD. Option for future expansion of additional up to 4SATA/SSD Hard drives or better
19.	Graphics Card	NVIDIA Quadro P2200 5 GB GDDRS dedicated or RadeonProW5500 or better

S. No	Feature	Specifications
20.	Keyboard and Mouse	Minimum USB Keyboard and USB Optical Scroll Mouse of reputed make
21.	Audio	High-Definition Integrated Audio with internal Speaker
22.	Operating System	Windows Professional- latest version with MS Office preinstalled (Perpetual license validity). Bidders should ensure all the software are compatible with the controller provided
23.	Warranty for Desktop	3 years minimum from the date of installation and acceptance of the system
24.	Display	Minimum 27 inch FHD Monitor IPS with LED backlight of reputed make
	CONTROLLER AND DATA ACQUISITION SYSTEM	
25.	Control System	Computer-controlled system with user-friendly interface to monitor, analyze and acquire acceleration waveform in all channels simultaneously with external PC with software control it.
26.	No of channels:	Min 4 with at least 16-bit resolution
27.	Sampling Rate	Up to 1 MHz per individual channel, which has the ability to capture the drop waveform accurately.
28.	Controller	Digital interface with real-time display of drop height and system status. Programmable drop height, home and drop count input selections. The controller has to be latest model/ version. Specify the model no and year. The machine shall be capable of operating independently through the HMI. The provision shall be made for control and operation via a PC.
29.	No of sensors	4 with minimum 20 Meters Low Noise Cables shall be provided
30.	Type of sensors	Shock rated acceleration sensor ICP type with Sensitivity: ≥ 1 mV/g and Measurement Range: ± 5000 g pk
31.	Voltage Range	± 10 V
32.	Power Requirement	415V AC $\pm 10\%$, Three Phase, 50 Hz or 220 V AC $\pm 10\%$, Single Phase, 50 Hz.
33.	Eligibility Criteria for Participation in tender	The bidder should have supplied and commissioned 2 Nos of same or similar capacity machine/ instrument during the last 05 years (as on date of bid opening) in Govt institutes/ Govt. research organizations/ Public funded Universities/National Testing laboratories/Reputed private firms in India. The bidder / supplier should provide the PO copies, Installation reports and Performance Certificate of the same POs.
34.	Warranty	Three-year comprehensive on-site warranty for the complete system including all the equipment, sub systems etc. from the date of installation and acceptance of the system. All spare parts required for the trouble-free

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		operation of the complete system during the warranty period, needs to be supplied by the bidder, without extra cost. Fault should be resolved on-site within 2 working days of fault reporting.	
35.	List of Installations	The bidder should submit a list of these installations giving details of commissioning & contact details (including email and phone numbers) along with the quote. Offer without this information is liable to be rejected without any further reference.	
36.	Requirement of AMC for the period of 3 years after the expiry of warranty period.	AMC is also required for the maintenance of the complete system including hardware, software, third party items, components etc. after the expiry of warranty period.	
	Note: The bidder should necessarily quote separately for the AMC as detailed below: But, CSIR-SERC will avail the service towards AMC at its discretion. The quoted charges towards AMC will be considered for the evaluation of the bids.		
	Details of Years after the warranty period	Charges towards AMC	Remarks
	1 st year		
	2 nd year		
	3 rd year		

Annexure A: Acceptance Criteria

S. No	Test Name	Test Method	Acceptance Criteria
1	Load & Structural Performance	Apply 250 kg load and perform drops at minimum, mid and maximum heights	Machine shall safely lift, hold and release load without instability, abnormal vibration, or structural deformation
2	Drop Height Accuracy & Repeatability	Conduct drops at 2.5 cm, 100 cm, and 180 cm (5 repetitions at one height)	Achieved height within $\pm 2\%$ tolerance and repeatability within $\pm 2\%$ variation
3	Drop Mode Functionality	Perform flat, edge, and corner drops using appropriate fixtures	Correct orientation of impact achieved consistently for all drop modes
4	Data Acquisition Performance	Acquire acceleration data using 4 sensors simultaneously during drop	All channels shall record valid data simultaneously with required sampling range and no signal loss