



INDIAN INSTITUTE OF TECHNOLOGY BOMBAY
MATERIALS MANAGEMENT DIVISION
Powai, Mumbai 400076.

Ref. PR No. 1000054012

Rfx. No. 6100002760

Item Description – **Instrumented Impact Tester (Qty: 1 No)**

Suitable for testing metallic materials using Charpy V-notch specimens as per ASTM E23 and ISO 148-1 standards or its equivalent

Sr. No	Item Description	Detailed Technical Specification*	Technical Compliance (Yes / No)	Additional Information (if any)
1.	System and Accessories	<ol style="list-style-type: none">1. The system should have a Motorised hammer lifting mechanism including an electromagnetic release and braking for the pendulum. System should feature automatic start after closing the door for faster testing.2. The Pendulum impact should run in any selectable modes – automatic / motorized mode, service and calibration mode.3. The machine should be delivered with hammers of 150J and 300 J.4. Automatic start after closing the door.5. The machine should have impact energy in the range of 15 – 360J (10-80%) or better.6. The system should have a continuous setting of drop height through a digital display with automatic drop height adjustment from 52° to 150° or better in stepless		

		<p>manner.</p> <ol style="list-style-type: none"> 7. The velocity of the striker on the point of impact shall be adjustable over a wide range; (a) min velocity 2.6 m/s or lower to (b) max velocity 5.5 m/s or higher. 8. The system should have a provision for a digital display of the fracture energy. 9. The machine's total friction and windage losses during the swing in the striking direction while performing the Charpy test shall not exceed 0.5 % of the scale range capacity. 10. Strikers of 2mm and 8mm and anvils to carry out impact Charpy tests on full-size (10x10x55) mm and sub-size specimens (7.5 x 10 x 55; 5 x 10 x 55; 2.5 x 10 x 55) complying with international standards to be supplied. 11. One specimen handling tong for Charpy V-notch specimens shall be included. 12. The system must be CE-compliant. Safety guard with acryl-glass with safety interlock-switch according to the safety regulations, according to DIN 51233, EN ISO 12100-1 and 2, EN ISO 13849 -1/-2, EN IEC 62061 or its equivalent <p>Machine should be compatible with Indian power conditions.</p>		
2.	Instrumented Charpy Tests	<ol style="list-style-type: none"> 1. The instrumented 2mm and 8mm striker assemblies for the Instrumented Charpy test should be attached with an integral force transducer. 2. The instrumentation should be equipped with integrated software and hardware packages for plotting, overlaying and analyzing 		

		<p>the results.</p> <p>3. Application Software Package for Instrumented Impact Testing according to ASTM E2298-15 and ISO 14556 should be supplied along with standard impact testing package (impact parameters and data acquisition parameters). or its equivalent</p> <p>4. High-Speed Data Acquisition System with latest OS for instrumented striking edges (strikers), acc ISO14556, should include an amplifier and 2 MHz/channel or better and a high-speed A/D converter, including an interface for the Software package or its equivalent</p> <p>5. The system should include a non-contacting displacement measurement system.</p>		
3.	Installation and Training	Installation and training shall be done by the supplier/authorized agent at IIT Bombay		
4.	Warranty	Two-year comprehensive warranty from the date of commissioning and installation.		
5.	Spares	Supplier shall assure the spares availability for at least 7 years from the end of warranty period.		
6.	Experience	1. Supplier should have at least 5 purchase orders of identical or similar equipment to IIT's/Research Institution/other organization. Under development, made against specifications etc. type models will not be entertained. Proof of supply to be included in technical bid. Purchaser may contact the end users to seek clarifications on		

		<p>performance of supplied systems.</p> <ol style="list-style-type: none">2. IIT reserves the right to accept or reject any bid not meeting above criteria.3. The contact of 5 users who have purchased and used the machine within India or outside India needs to be given.		
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