



**Department of Aerospace Engineering
IIT Kanpur**

Sep 18, 2013

Quotation request notice

Sealed quotations are invited from dealers/distributors by the undersigned for 'Drop weight impact tester for metals and composites' of following specifications. The technical and commercial bids should be submitted in separate envelopes to the Department of Aerospace Engineering, IIT Kanpur by 27.09.2013.

Enquiry No.: IITK/AE/R_Kitey/18
Opening date: 0900hrs, 18.09.2013
Closing date: 1800hrs, 27.09.2013

Drop weight impact tester for metals and composites specifications

Drop height 30 mm to 1100 mm
Impact velocity ≥ 4.5 m/s
Dropping mass ≥ 35 kg
Potential energy ≥ 400 J
Impact and rebound velocity optical detector
Microprocessor instrumented automated pneumatic clamping device (with clamping plate)
Quick striker lifting with digital encoder for accurate crosshead positioning

Detailed specifications of load frame and equipment accessories are attached.

Terms & Conditions of the quotations are as under:

1. The quotations should be submitted in the properly sealed envelop, addressed to the undersigned. The enquiry no., technical/commercial quote and date should be mentioned on the top of the envelope.
2. The time allowed for carrying out the above note work is 10 days.
3. The quoted price should be inclusive of sales tax and other taxes including freight charges (if any).
4. The quotations shall remain valid for two months from the date of opening.
5. Commercial quotes will be opened only if the technical specifications mentioned in this tender are fulfilled. The Institute reserves the right of accepting or rejecting any quotations without assigning any reason thereof.

Your early response in this matter would be highly appreciated.

Sincerely,
Dr. Rajesh Kitey
Assistant Professor
Department of Aerospace Engineering, IIT Kanpur
Email – kitey@iitk.ac.in, Ph# +91-512-259-7060

Detailed Specification:

Drop height 30 mm to 1100 mm

Impact velocity ≥ 4.5 m/s

Dropping mass ≥ 35 kg

Potential energy ≥ 400 J

There should be an impact and rebound velocity detector

Microprocessor instrumented automated pneumatic clamping device (with clamping plate)

Quick striker lifting with digital encoder for accurate crosshead positioning

Operational requirement

Anti vibration feet

Completely automated impact cycle

Microprocessor based controller with auto-check features

User friendly operation to enter test parameters and to recall test results

Nonvolatile memory to store up to 25 sets of test parameters

Real time display during test execution

RS232 port for pc connection

Safety protection according to the ec health and safety directive

CE certificate

Electrical supply: 230 v 50/60 Hz single phase

Calibration Certificate for Impact Tester and Height Encoder with:

List of reference standards

List of inspection procedures

List of measurement instrumentation and related calibration certificates

Standard Impact Tester Falling Mass

Pneumatic anti-rebound device to avoid a second impact on unbroken specimens

Fixtures and Supports

Fixed and adjustable height stand to support the specimen

Test fixtures should be suitable to test films, metal and composite plates/tubes

Adjustment stroke 100 mm with options to test specimens of thickness ≥ 190 mm

Fixture to align striker with Charpy and IZOD Inserts

Clamps: toggle type, manually operated

Clamps capacity: more than 1100 N

Clamps position: adjustable

Data Acquisition

At least 4 acquisition channels for strain gauges, strikers, piezoelectric strikers, load cell and accelerometers

At least 700 KHz bandwidth with 2 MHz sampling rate and storage upto 65000 data points

Fully programmable and digitally controlled working parameters (sampling rates, gains and trigger levels)
PC connection via USB port

Features of interface software

Supporting following impact test standards of metal plates, on films and on tubes according to,
ISO 6603, ISO 7765, ASTM D3763, ASTM D5628, ASTM D2444
Supporting Charpy, IZOD and tensile impact test standards ISO 1791, ISO 1792, ISO 180, ISO 8256,
ASTM D256, ASTM D6110 ASTM E23
Programming, management and storage of unlimited number of tests
User friendly environment for test parameters input, management and storage
Database of international standards, including specimens dimensions and graphical representation to guide the
test parameters input
Management of customized list of strikers, filtered by standards
Real time display of impact energy, falling mass, falling height and impact speed
Real time graphical display of the impact curves
Real time display of instrument status
Discarding wrong or unwanted results and to retrieve them immediately or later
Automatic calculation of the failure type based on ISO 1792 (Charpy test)
Automatic filtering the results according to the type of break
Calculation and graphical display of statistical values, based on the whole lot or on filtered subsets
Extended graphical capability, including, multiple axis diagrams, zoom, pan, scale management
Automatic location of characteristic points (start, peak, break, total)
Manual correction of the characteristics points
Facility to define customized points and manual points
Customize measurement units according to international system
Standard reports to print out test results, statistics and diagrams
Customizable format and selection of fields to be exported, suitable for connection with lms systems
Automatic report printout and data export after each impact or at the end of each lot
Management of three operator access levels, protected by passwords
Exporting test data and parameters to excel worksheets and text files
Compatible with Windows XP, Vista, 7

Charpy test fixture specifications

Insert according to ASTM D6110 Charpy Test (for all interchangeable strikers)
Insert for Charpy Tests on Metals According to ASTM E23 and ISO 148
Insert for ISO179 Charpy Test
Adapter 20 mm diameter for interchangeable heads, 8 mm striker head
Support for Charpy Tests on Polymers and Metals according to ISO 179, ASTM D6110 and ASTM E23
Specimen centering device with adapters to mount supports at variable height

Adjustable height stand for plates, films, Charpy, IZOD and other tests
Shoulders to support 4 mm x 10 mm x 80 mm size specimen according to ISO 179 flat Charpy specimens
Shoulders to support specimens according to ASTM D6110 Charpy specimens (specimen dimension,

3.17 mm x 12.7 mm x 127 mm, 6.35 mm x 12.7 mm x 127 mm, 12.7 mm x 12.7 mm x 127 mm)
Shoulders to support 10 mm x 10 mm x 55 mm size specimen according to ASTM E23 and ISO 148 Charpy specimens
Radius of anvils, 1mm (span 42mm)