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From: Director, CSIR-NPL

No. 14-VI/VNS(1190-GTE)26PB/T-38

Dated: 02.09.2026

03

CORRIGENDUM

With reference to NPL's Open Tender ID: **2026_CSIR_848630_1** for "**Charpy Impact Tester**". All the prospective bidders are hereby informed that some changes have been made in the technical specification of captioned tender. Revised specifications are as follows:

Original Specifications	Final Specifications
As tendered	As tendered (Annexure 2) only serial number changed

Revised Technical specifications (Annexure-I) is also ATTACHED with this Corrigendum. Accordingly, all the interested bidders may submit their Offer as per revised technical specification.

Please also note that bids submitted without taking these changes into consideration will be rejected summarily.

All other terms will remain the same. The same is also available on CSIR-NPL official website <http://www.nplindia.org> under Tender link.

Sr. Controller of Stores and Purchase

[Signature]
03/09/26

FORM TO BE FILLED BY IO WHILE CONVENING PRE-BID MEETING OF TSC

File No.: 14-VI/VNS (1190-GTE)26-PB

Date:10-08-2026

Pre-bid Meeting (25-08-2026)

Name of Indentor: Dr. Vidya Nand Singh

Indent No.: PR502321111026

Item Description: Charpy Impact Tester

No. of Budgetary Quotes: One

(1) A pre-bid meeting of TSC was held on 25.08.2026.

(2) Following queries were raised by participating Bidders:

Name of the Firm	Queries Raised	Remarks, if any
M/s. Complete Instrumentation Solutions Private Limited, Gurgaon- 122002, representing IBERTEST, Spain.	Our Impact Tester does not have a continuous variable angle setting. In addition, there are several other specifications in the tender that our equipment does not meet.	We will not be able to participate in this tender
M/s. ZwickRoell Private Limited, Germany	The instrumentation with a High-speed Data acquisition system allows us to measure force, displacement, and energy: is this really required to measure displacement by sensors?	As we use a different and better method i.e. measuring Force by time. We do not measure the displacement (bending of the specimen by break) directly. We use the force by time curve and calculate by mathematic the bending of the specimen at the moment of break.
M/s. Aimil Ltd, representing Walter+ Bai	1.The usable range of the 450 J Charpy tester may kindly be revised to 10%–80% of total capacity, i.e., 45–360 J.	
	2.We request deletion of this clause since the critical parameter specified by applicable standards is impact velocity rather than drop angle. Alternatively, the drop angle range may be revised to 50° or lower to 150° or higher.	
	Clarifications: Clause 1(Scope of supply and testing): The impact tester must also be compatible with ISO 148-3.	Kindly clarify whether compliance with this requirement will be verified through testing of one set of CRM standards after installation at NPL, Delhi, with another set of CRM standards to be sent to an NMI (National Metrology Institute)

		for independent verification.
	Clause 6 (Instrumented Charpy) Sub Clause 6: The instrumentation with a High-speed Data acquisition system allows us to measure force, displacement, and energy	Kindly clarify that the bidder must provide a displacement measurement mechanism along with the high-speed data acquisition system. Without displacement measurement, the required force–displacement/energy curve cannot be generated. This point was also highlighted by one of the participants during the pre-bid meeting.

Indentor's recommendation

1. The comments, as received from bidders during PBC, and our response is as follows:

Tender Specification and its number	Comment of bidder	Response of Indentor	Revised specification	Justification for non-acceptance
Clause 6 (Instrumented Charpy) Sub Clause 6	<u>M/s ZwickRoell Private Limited, Germany:</u> The instrumentation with a High-speed Data acquisition system allows us to measure force, displacement, and energy: is this really required to measure displacement by sensors? As we use a different and better method i.e. measuring Force by time. We do not measure the displacement (bending of the specimen by break) directly. We use the force by time curve and calculate by mathematic the bending of the specimen at the moment of break.	No change required	NA	Our purpose will be served as they are offering similar/better options.
Clause 2 (System & Accessories), Sub-Clause 5	<u>M/s. Aimil Ltd, representing Walter+Bai</u> The usable range of the 450 J Charpy tester may kindly be revised to 10%–80% of total capacity, i.e., 45–360 J.	Not accepted	NA	The purpose of the instrument is to test BND samples. Materials such as standard carbon steel, low-alloy steel, high-carbon steel, ductile cast iron, aluminum alloys, brass, polycarbonate, and reinforced glass fiber, which have impact

				energy in the range of 5-35 joules. Thus, by changing the impact energy starting from 45 J, our purpose will not be served
Clause 2 (System & Accessories), Sub-Clause 6	<u>M/s. Aimil Ltd, representing Walter+ Bai</u> We request deletion of this clause since the critical parameter specified by applicable standards is impact velocity rather than drop angle. Alternatively, the drop angle range may be revised to 50° or lower to 150° or higher.	Not accepted	NA	As mentioned in the point above, we also need impact energy in the lower range; therefore, to accomplish this, the drop angle should be low. Changing the lower drop angle to 50° will not serve the purpose.
	<u>M/s. Aimil Ltd, representing Walter+ Bai</u> Clarifications: Kindly clarify whether compliance with this requirement will be verified through testing of one set of CRM standards after installation at NPL, Delhi, with another set of CRM standards to be sent to an NMI (National Metrology Institute) for independent verification.	Not accepted	NA	ISO 148-3 (on page 5, table 2) specifies the geometrical characteristics of the instrument and the sample. The vendor's point regarding CRM is covered in point 7.
	<u>M/s. Aimil Ltd, representing Walter+ Bai</u> Clarifications: Kindly clarify that the bidder must provide a displacement measurement mechanism along with the high-speed data acquisition system. Without displacement measurement, the required force-displacement/energy curve cannot be generated. This point was also highlighted by one of the participants during the pre-bid meeting.	Not accepted	NA	Either this or an equivalent/better technology will also do.

Final recommended specifications are as attached at Annexure 1 and signed by I/O: No change

Corrigendum to Tender may be issued/ may not be issued.

Recommended Revised Date of Tender submission (if any) is ____

The specifications are generic and broad based.

Submitted to TSC for necessary approvals.

FORM TO BE USED BY TSC FOR FINALISING PRE-BID MINUTES

File No.: 14-VI/VNS (1190-GTE)26-PB

Date:10-08-2026

TSC Minutes (25-08-2026)

Based on the Pre-bid meeting and recommendation of I/O, following changes have been made in the specifications:

Original Specifications	Final Specifications
As tendered	As tendered (Annexure 2): only serial number changed

The file is forwarded to Purchase Section for uploading the final specifications and TSC minutes on the website and CPPP Portal.

Declaration: We hereby declare that we have no conflict of interest with any of the bidder in this tender

SPECIFICATIONS FOR CHAPRY IMPACT TESTER

	Description	Specification
1.	Scope of supply and testing	Supply, installation, commissioning, demonstration, and user training for the Motorized Impact testing system suitable for testing metallic materials using standard Charpy V-notch specimens as per ASTM E23, ISO 148-1,2,3 & EN 10045-2 standards in the temperature range -80 °C to +180 °C to evaluate the toughness of the material, evaluate fracture toughness, and estimate the Ductile Brittle Transition Temperature (DBTT)/ Fracture Assisted Transition Temperature (FATT). The impact tester must also be compatible with ISO 148-3.
2.	System and accessories	I. The system should have a Motorised hammer lifting system, including a brake for the pendulum. II. The Pendulum impact should run in any selectable modes, viz, automatic/motorized mode III. The machine should have hammers of 150, 300, and an additional weight of 450 Joule potential energy. IV. Fin to ISO 148-3 (not instrumented, interchangeable), tolerance fin $2 \pm 0.2 \text{ mm}$ - Made of tool steel, hardness HRC 60 ± 1 - For testing of specimens made of non- or low-alloyed steel, including calibration certificate. Geometric characteristics as per table 2 of BE EN ISO:148-3: 2016 V. The machine shall provide impact energy in the range of 5 - 360 Joules or better on both sides with a resolution better than or equal to 0.1 J for digital display. VI. The system should have a continuous setting of drop height through a digital display with automatic drop height adjustment from 5° or lower to 150° or higher to meet the required angle of fall both for Charpy and Izod. VII. The velocity of the striker on the point of impact shall be adjustable over a wide range; (a) min velocity 2.8 m/s or lower to (b) max velocity 5.00 m/s or higher VIII. The system should have a provision for a digital display of the fracture energy. IX. The machine's total friction and windage losses during the swing in the striking direction while performing the Charpy or Izod test shall not exceed 0.5 % of the scale range capacity. It should be capable of conducting impact Charpy tests on full-size (10 x 10 x 55 mm) and sub-size (7.5 x 10 x 55; 5 x 10 x 55; 2.5 x 10 x 55 mm) specimens, in compliance with international standards. X. Two specimen handling tongs for carrying out impact tests with Charpy V-notch specimens, ensuring smooth transfer from the cooling and/or heating chamber. XI. The offer should include a Steel Reinforcement Frame for the Foundation. XII. The system must be CE-compliant. Safety guard with acryl-glass with safety interlock-switch according to the safety regulations, according to EN ISO 12100-1 and 2, EN ISO 13849 -1/-2
3.	Environmental chamber / cryobath	I. Temperature control range -80 °C or lower to +180 °C or higher II. Temperature control: $\pm 0.02^\circ\text{C}$ or better. III. Bath Volume of 8 L or higher for coolant.
4.	Motorized Charpy	I. The motorized Charpy broaching machine should be capable of making a 2 mm Charpy V-notch as per ASTM E23 standard on 10 mm x 10 mm x 55 mm type of samples.

	Broaching Machine	II.	Broaches should be capable of broaching samples with hardness levels of 45 HRC or better
5.	Power supply		As per the Indian standard
6.	Instrumented Charpy	I. II. III. IV. V. VI.	The instrumented striker assembly for the instrumented Charpy test should be attached with an integral force transducer. The instrumentation should be equipped with integrated software and hardware packages for plotting, overlaying, and analyzing the results. The system shall include a signal conditioning unit, an impact velocity measuring system with a digital display unit, and a triggering unit. Application Software Package for Instrumented Impact Testing according to ASTM E2298-15 and ISO 14556 should be supplied along with the standard impact testing package (impact parameters and data acquisition parameters) Charpy tup 2 mm must be according to ISO 148-3 with Tolerance fin 2 ± 0.2 mm. Made of powder metallurgical steel (PM), HRC 62 ± 1, Instrumented for ISO 14556, for testing samples from higher alloyed steels. High-Speed Data Acquisition System with the latest OS for instrumented striking edges (strikers), acc ISO 14556, should include an amplifier and 4 MHz/channel or better, and a high-speed A/D converter, including an interface for the Software package. The instrumentation with a High-speed Data acquisition system allows us to measure force, displacement, and energy.
7.	NMI Standard specimens with certificates		Calibration with CRMs shall be done after installation, using NMI standard specimens covering the high-energy (88J to 133J) (10 Pieces) and super-high-energy (176J to 244J) (10 Pieces) levels for conducting Charpy testing.
8.	Safety procedures required for the equipment	I. II.	Adequate safety enclosure must be present to prevent access to the specimen and test area using electric/magnetic/electromechanical interlock or any other built-in safety mechanism (should be mentioned clearly in detail). Clear visibility should be provided for easy viewing of the specimen during testing. The impact testing equipment must have safety-encompassing and safety regulations and must be CE-compliant.
9.	Installation and Training of Machines	I. II.	Installation shall be done by the supplier/authorized agent at the customer's site. Advanced onsite training on the operation of the system, including the use of the various software of the system by Company personnel, to at least 5 persons.
10	Warranty		One-year comprehensive warranty from the date of commissioning
11	Spares		Supply of spares should be ensured for at least 10 years from the warranty period.-