

CC NO. 2026-27/351

September 22, 2026

TEST AND CALIBRATION CERTIFICATE

PRODUCT : ULTRASONIC FLAW DETECTOR
MODEL/SR.NO. : ARJUN-30 / AJ0459-9140
MANUFACTURER : MODSONIC INSTRUMENTS MFG. CO. (P)
LTD., AHMEDABAD
CUSTOMER'S NAME : M/S MG CONTRACTORS PVT.
LTD., AMBALA
VALID UPTO : 21-09-2027

We certify that the above machine was tested and calibrated by us on 22-09-2026 in accordance with the **ASTM-E317-21** using Ultrasonic Block (V1 Block) identified as 696-1-2009 calibrated/certified by NPL, New Delhi (vide Certificate No. **25070427/D1.06/C-072** Dtd. 24-07-2025, valid up to 24-07-2027).

Following are the values of the important parameters evaluated by us:

1. **Horizontal Linearity** : Non-Linearity within $\pm 1\%$ (Plus/Minus one Percent)
For 0% to 100% Full Screen Range.
2. **Vertical Linearity** : Non-Linearity within $\pm 3\%$ (Plus/Minus Three Percent)
For 0% to 100% Full Screen Range.
3. **Resolution** : Machine checked for Resolution on IIW Block found
Resolution less than 6mm.
4. **Sensitivity** : Machine could distinctly detect drill hole on IIW Block
with probe type MM4SN with Gain reserve of 42 db.
5. **Penetration** : More than five full-scale reflections found ON Perspex
In IIW V1 block with Noise level about 10% with probe
type M2SN (2MHz X 24MM dia.)

TATVA MARKETING & SERVICES PVT. LTD





सी एस आई आर - राष्ट्रीय भौतिक प्रयोगशाला
CSIR-NATIONAL PHYSICAL LABORATORY

(वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्)

(Council of Scientific and Industrial Research)

(राष्ट्रीय मापकी संस्थान (एनएमआई), सदस्य बीआईपीएस एवं हस्ताक्षरकर्ता सीआईपीएम - एमआरए)
(National Metrology Institute (NMI), Member BIPM and Signatory CIPM - MRA)

डॉ. के. एस. कृष्णन् मार्ग, नई दिल्ली-110012, भारत
Dr. K. S. Krishnan Marg, New Delhi-110012 INDIA

दूरभाष/Phone : +91-11-4560, 8441, 8610, 9447, फैक्स/Fax : 91-11-4560 8448

ई-मेल/E-mail : cfct@nplindia.org, वेबसाइट/Website : www.nplindia.org



अंशांकन प्रमाण पत्र
CALIBRATION CERTIFICATE

Ultrasonic Step Wedge Block

प्रमाण पत्र संख्या / Certificate No.

26070480/D1.06/C-088

दिनांक/ Date	अगले अंशांकन हेतु अनुशंसित तिथि Recommended date for next calibration	पृष्ठ / Page	पृष्ठों की संख्या / No. of Pages
31-07-2026	31-07-2028	1	2

- Calibration for : TATVA MARKETING & SERVICES PVT. LTD. 1st Floor,
SBC Plaza, Plot No. 6, Sector- 15, Vasundhara, Ghaziabad,
Uttar Pradesh, India, PIN – 201 012
Customer's Ref.: Letter No.: TMS/403(VW)
Dated: 08/07/2026
- Description and identification of instrument : Name of Item: Ultrasonic Step Wedge Block
Make: NIL
Model No.: Step Block (1-10 mm)
S No.: 1494-12-2009
- Environmental conditions : Temperature: 25 ±2°C
Humidity (RH): 55 ±10%
- Standards used and associated measurement uncertainty : i. Digital Storage Oscilloscope:
Uncertainty in Voltage ±2%, time ±2 ns.
ii. Ultrasonic Flaw Detector with 5 MHz Probe:
Uncertainty in distance ±10 µm.
- Metrological Traceability of Standard(s) used : The standard(s) used for calibration is (are) traceable to the National Standard, which realize the units of quantities according to the International System of Units (SI)
- Principle /methodology of calibration and calibration procedure number : As per relevant clauses of IS 4904:2006
- Results: See Page 2

The reported uncertainty is at coverage factor k=2 which corresponds to a coverage probability of approximately 95% for a normal distribution. Uncertainty in dimensional measurement of this block was ±0.03 mm

अंशांकनकर्ता:

Calibrated by:

Ravinder Kumar

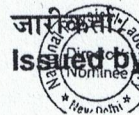
जाँचकर्ता:

Checked by:

P K Dubey

प्रभारी वैज्ञानिक: Nita Dilawar
Scientist-in-charge:

Nita Dilawar



जाँचकर्ता
Issued by

डॉ. श्रीनिवास राव रागम
Dr. Srinivasa Rao Ragam





सी एस आई आर – राष्ट्रीय भौतिक प्रयोगशाला
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31-07-2026	31-07-2028	2	2

RESULTS

Calibration of Ultrasonic Step Wedge Block, S No.: 1494-12-2009

7.1 Calibration for Thickness of Steps

Nominal Thickness of Step a (mm)	Measured Thickness by NPLI b (mm)	Difference a & b (mm)
1	1.01	0.01
2	2.02	0.02
3	3.04	0.04
4	4.00	0.00
5	5.00	0.00
6	6.02	0.02
7	7.00	0.00
8	7.97	0.03
9	8.98	0.02
10	9.98	0.02

7.2 Time of travel of longitudinal ultrasonic wave at step of 10 mm : 1.689 μ s

7.3 Longitudinal ultrasonic velocity used in block material : 5900 m/s

8. Date(s) of calibration: 30-07-2026

9. Remarks (if any): The deviations of the measured thickness values are within the acceptable limits specified in IS. Uncertainty in thickness measurement of this block was ± 0.04 mm

अंशांकनकर्ता:

Calibrated by: Ravinder Kumar

जाँचकर्ता:

Checked by: P K Dubey

प्रभारी वैज्ञानिक: Nita Dilawar

Scientist-in-charge: Nita Dilawar



डॉ. श्रीनिवास राव रागम
Dr. Srinivasa Rao Ragam

RSL

