

East Central Railway

Office of the
General Manager (Engg)
Hajipur

Comp. No.: 116237

File No.: ECR-HQ0ENGG (TK)/15/2021-O/o Dy.CE/TO/HQ/ECR Dated: 08.07.2025

**Sr. DEN/Co-ord
East Central Railway
DDU**


Sub:-Extended trials for measurement/determination of Stress free temperature for LWR/CWR track using technology namely 'VERSE' based on the mechanical method.

Ref: - i) Rly Bd's letter no. 2024/Track-I/10/Rail Stress equipment dt. 16.06.2025.
ii) RDSO letter no. CT/IM/LWR/RSM (Dev.) dt.07.01.2025.

The subject trials are to be conducted in GC section of DDU division, selecting 10 such LWRs as mentioned in reference (ii) above. The identified LWRs may immediately be communicated to HQ & PCE desires that tender be called expeditiously within next 10 days.


8/7/25
(Mukesh Kumar)
Chief Track Engineer

Signature Not
Verified


Digitally signed by
SWATI RAJ
Date: 2025.08.29
17:45:32 +05'30'
Reason: IREPS-CRIS
Location: New Delhi

भारत सरकार (GOVERNMENT OF INDIA)
रेल मंत्रालय (MINISTRY OF RAILWAYS)
रेलवे बोर्ड (RAILWAY BOARD)

सं/No.2024/Track-I/10/Rail Stress equipment

दिनांक /Dated: 16.06.2025

Principal Executive Director/Infra-I,
RDSO
Lucknow.


Principal Chief Engineer,
ECoR, SER, ECR, SECR.

विषय/Sub: Extended trials for measurement/determination of Stress free temperature for LWR/CWR track using technology namely 'VERSE' based on the mechanical method.
संदर्भ/Ref.: RDSO's letter No. CT/IM/LWR/RSM/Dev. dated 11.06.2025.

Vide reference letter above, RDSO has submitted the proposal with the request to nominate additional Zonal Railways for extended trial of the measurement of Stress-Free Temperature (SFT) of LWR/CWR using the equipment/system namely 'VERSE', prior to its standardisation for regular adoption on Indian Railways and sought approval of Railway Board.

The above proposal of RDSO has been considered in Railway Board and Board (MI) has approved the nomination of ECoR, SER, ECR and SECR (Heavy goods traffic and critical temperature Zone III & IV railways) for the trial of Verse technology.

The trials shall be conducted in each of the nominated Zonal Railways using the specification/scheme proposed by RDSO. These trials are to be carried out expeditiously in coordination with RDSO.


(Alok Kumar) 16/6/25

Executive Director/Track (P&P)
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भारत सरकार - रेल मंत्रालय
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Government of India-Ministry of Railways
Research Designs & Standards Organisation
Lucknow - 226 011
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No. CT/IM/LWR/RSM(Dev.)

Date: As signed

Principal Chief Engineer
ECoR, ECR, SER & SECR

Sub: Extended trials for measurement/determination of stress free temperature for LWR/CWR track using technology namely 'VERSE' based on the mechanical method.

Ref: Railway Board's letter no. 2024/Track-I/10/Rail Stress equipment dated 16.06.2025

1. Railway Board, vide letter under reference has approved the nomination of ECoR, SER, ECR and SECR (Heavy goods traffic and critical temperature Zone III & IV railways) for extended trial of VERSE Technology in each of the nominated Zonal Railways using the specification / scheme proposed by RDSO. These Zonal Railways are nominated for extended trial of the measurement of Stress-Free Temperature (SFT) of LWR/CWR using the equipment/system namely 'VERSE' prior to its standardisation for regular adoption on Indian Railways. These trials are to be carried out expeditiously in coordination with RDSO.
2. In this connection, "Technical Specification of Equipment/System for Measurement/Determination of Stress Free Temperature of LWR/CWR (Provisional, March-2025)" for the proposed equipment/system for measurement of SFT of LWR/CWR non-destructively based upon mechanical method namely 'VERSE' is attached as **Annexure-I** for general guidance of Zonal Railways to explain the technique and technical requirement for measuring SFT of LWR. The tender document received from NER (presently trial of this equipment is undergoing in BSB division NER) is attached as **Annexure-II**, however, the final tender document shall be formulated by the concerned Zonal Railways as per the extant policy.
Also, field trial scheme and proforma for measurement of stress free temperature for monitoring of the trials are attached as **Annexure-III A** and **Annexure-III B** respectively. For carrying out measurement of SFT, 10 LWRs shall be identified which are recently de-stressed as per provisions of IRPWM preferably using rail tensor in each nominated Zonal Railway. Monthly measured SFT report as per proforma (**Annexure-III B**) to be submitted to this office.
3. Zonal Railways are advised to associate suitable officials during validation trial of equipment/system for measurement of SFT so as to learn the methodology of calibration, measurement and its hands on practice on LWR track so that their learning experience may be utilized in future, if required.

DA: As above

Digitally signed by VINAY
TAK
Date: 2025.07.01 18:37:43
+05'30'
(Vinay Tak)
Executive Director/ Track-I

Copy to: Principal Executive Director/Civil Engineering (Planning), Railway Board, Rail Bhawan, New Delhi-110001

भारत सरकार
Government of India
रेल मंत्रालय
MINISTRY OF RAILWAYS



सत्यमेव जयते

TECHNICAL SPECIFICATION OF EQUIPMENT/SYSTEM FOR
MEASUREMENT/DETERMINATION OF STRESS FREE TEMPERATURE
OF LWR/CWR

(PROVISIONAL)

MARCH - 2025



अनुसंधान, अभिकल्प एवं मानक संगठन, लखनऊ -11
Research, Designs and Standards Organisation, Lucknow-11

**TECHNICAL SPECIFICATIONS OF EQUIPMENT/SYSTEM FOR
MEASUREMENT/DETERMINATION OF STRESS FREE TEMPERATURE
OF LWR/CWR ON INDIAN RAILWAYS**

1.0 SCOPE

- 1.1** Indian Railway is a large network comprising majority of track on Broad Gauge. Broad Gauge (1676mm) track mostly comprises of UIC 60kg/IRS 52kg long/continuously welded rails laid on pre-stressed mono-block concrete sleepers on stone crushed ballast bed. The measurement/determination of stress free temperature is considered essential for taking preventive action against Rail Breaks and Track buckling.
- 1.2** This specification covers the description, function and performance parameters of equipment/system for measurement/determination of stress free temperature of Long/Continuous Welded Rails. The equipment/system must be able to measure/determine stress free temperature Non-Destructively without traffic block or with traffic block not exceeding 45 min with an accuracy of $\pm 3^{\circ}\text{C}$ under different environmental and traffic conditions on Indian Railways. In case, opening of fittings/fastenings is required then it would not involve any destruction to rail or any other components of track. The equipment/system is required to measure/determine stress free temperature in LWR/CWR for taking maintenance decisions to ensure safety.
- 1.3** Manufacturer/supplier shall supply the complete equipment/system along with source of power as per requirement and execute the work of measurement/determination of stress free temperature of 10 identified LWRs/CWRs recently de-stressed as per provisions of IRPWM preferably using rail tensor and further analysis for taking maintenance decisions for a period of six months preferably covering extreme winter and summer seasons of the year or 500 track kilometers whichever is more and to provide training to sufficient number of Indian Railway officials to make them competent to operate the equipment/system thereafter.

2.0 DEVIATIONS

The manufacturer/supplier shall furnish compliance or deviations, if any, for each clause and sub clause of the specifications along with technical explanations/details. The manufacturer/supplier shall also furnish technical and financial implications of the deviations, if any.

3.0 FUNCTIONS

The equipment/system should be able to measure/determine stress free temperature in digital forms and recording in reproducible electronic forms for taking maintenance decisions.

4.0 SERVICE CONDITIONS

- 4.1** Equipment/system should be able to work satisfactorily under following service conditions:
- (i) Ambient temperature: 0°C to 50°C
 - (ii) Rail temperature: $(-) 5^{\circ}\text{C}$ to $(+) 60^{\circ}\text{C}$
 - (iii) Humidity: 100%

- (iv) Rain fall: Fairly heavy
- (v) Atmospheric condition: Very dusty and heavy fog
- (vi) Electrified traction: Overhead electric (25KV AC or 1500 V DC)
- (vii) Permissible rail wear: As per Para 4.3.

The equipment should not get affected by induction effect of electric traction and signaling system and should not interfere with Indian Railways' signaling system.

- 4.2 On Indian Railways network, the electrified traction consists of over head electric system of either 25000V AC or 1500V DC with residual return current passing through one of the rails in the track.

The voltage for track circuits for signaling purpose is up to 12 Volts and the corresponding current up to 1 Amp passes through the other rail.

The equipment/system and its accuracy of measurement shall not get affected in any manner due to induction or any other effect of above stated electric traction and signaling systems.

- 4.3 The Broad gauge track on Indian Railways is laid with 60 Kg (UIC)/60E1/IRS 52 Kg rails welded into Long/Continuously welded Rails. The in-service wear of Rails permitted is laid down in Indian Railway Permanent Way Manual (IRPWM). The permissible wear on Rail as stipulated in Para 702 (1) (b) of IRPWM, June-2024 is reproduced as under:

Vertical Rail Wear

Gauge	Rail Section	Vertical Wear
B.G.	60 Kg/metre 52 Kg/metre	13.00 mm 8.00 mm

Lateral Rail Wear

Section	Gauge	Category of track	Lateral wear
Curves	B.G.	Group 'A' & 'B' Routes	8 mm
		Group 'C' & 'D' Routes	10 mm
Straight	B.G.	Group 'A' & 'B' Routes	6 mm
		Group 'C' & 'D' Routes	8 mm

The equipment/system and its accuracy of measurement shall not get affected in any manner on Rail with wear up to limits indicated above.

5.0 ELIGIBILITY CRITERIA

- (i) The firm shall be manufacturer of portable equipment/system for non-destructive measurement/determination of stress free temperature.
- (ii) The firm should offer proven technology, with equipment/system supplied by the firm and working satisfactorily in any reputed Railway system of the world. Certificates in this regard from relevant Railway

system shall be furnished.

- (iii) The firm shall possess sound technical and R&D credentials.
- (iv) The firm shall possess necessary infrastructure namely manpower, machinery for undertaking execution of work of measurement/determination of stress free temperature of 10 identified LWRs/CWRs recently de-stressed as per provisions of IRPWM preferably using rail tensor and further analysis for taking maintenance decisions for a period of six months preferably covering extreme winter and summer seasons of the year or 500 kilometers whichever is more and provide training to sufficient nos. of Indian Railway officials as per Para 11 of this specification.

Firms shall submit documents in support of fulfillment of above mentioned eligibility criteria along with tender offer.

- (v) The firms shall submit documents in support of turnover for last five years.

6.0 SYSTEM DESCRIPTION AND PERFORMANCE PARAMETERS

- 6.1 The equipment/system must be a proven system and should be functional in all climatic conditions prevailing in India. Performance certificate for satisfactory working of the system/equipment in any reputed railways systems of world shall be furnished.
- 6.2 The equipment/system should be able to measure/determine stress free temperature non-destructively without traffic block or with traffic block not exceeding 45 min. In case, opening of fittings/fastenings is required then it would not involve any destruction to rail or any other components of track.
- 6.3 The equipment/system should be able to measure/determine stress free temperature in degree Centigrade on screen in digital form and should provide relevant record in reproducible electronic form giving details of location, rail temperature for further analysis and reporting.
- 6.4 Data Analysis and Data Reduction should be performed automatically.
- 6.5 The equipment/system shall be portable and along with the source of power it should be able to be carried on manually operated trolley, which could be taken off track to the safe distance on train being sighted or should be able to be carried in self-propelled rail car/mounted on locomotive. Total weight of the equipment/system along with source of power/batteries shall be furnished by the firm.
- 6.6 The trolley mounted equipment/system should be able to be taken off the track manually on train being sighted and should be able to start quickly for continuing measurements on trolley being mounted on track after passage of train. Switching off and switching on time should be about a minute. Manually operated trolley suitable for working on Indian Railways shall be provided by the firm for execution of work.
- 6.7 The recording trolley/car/locomotive should not influence the measuring results.

- 6.8 The measuring system should be compatible with rails carrying return currents and track circuits currents.
- 6.9 The equipment/system should be capable of taking measurement/determination of stress free temperature with permissible rail wear as per Indian Railway Permanent Way Manual (IRPWM) as amended time to time and curved track up to 5° curvature.
- 6.10 The equipment/system should be suitable for use on rails of all grades mentioned in Specification for Flat Bottom Rails (IRS-T-12: 2009 with latest amendment).
- 6.11 The equipment/system shall be battery/generator operated.
- 6.11.1 If equipment/system is battery operated, rechargeable battery should have sufficient capacity to be able to work for 16 hrs. continuously without need for recharging and charging time should be about 4-6 hrs. with 220V 50Hz supply. Also, built in type of separate battery charger shall be provided. Automatic cut off for battery charger and battery shall be provided to protect the battery from overcharging. Also, automatic cut off switch to be provided to protect against deep discharging of battery below the workable voltage.
- 6.11.2 If equipment/system is generator operated, generator should be able to produce the power which is compatible to the requirement of equipment/system.
- 6.12 The system should be able to compare the computed Stress Free Temperature (SFT) with the original installed value/de-stressing temperature (t_d).
- 6.13 It should be able to give absolute and accurate values within a tolerance of ($\pm 3^{\circ}\text{C}$).
- 6.14 The equipment should be sufficiently robust and weather proof to withstand the normal track and vehicle environment.
- 6.15 The equipment must be inherently stable.
- 6.16 The system should be insensitive to temperature changes.

7.0 TESTS FOR EQUIPMENTS FOR ROBUSTNESS AND TROPICALISATION:

7.1 BUMP TEST

In packed condition the equipment should be able withstand 40g, 4000 bumps.

7.2 RESITANT TO VIBRATION

The unit should be able to give normal performance after being subjected to 1g, 10 to 100 Hz vibration for 30 minutes.

7.3 TROPICALISATION & HUMIDITY TEST

The equipment should be tropicalised to suit Indian climatic conditions for damp cycle test as per IS 9000 Part 5 (Sec. 1 & 2):1981. The equipment shall be properly packed to prevent corrosion and damages during transit.

Individual units of the equipment/system should have been subjected and passed the bump, resistance to vibration and tropicalisation & humidity tests.

8.0 DETAILS TO BE PROVIDED BY MANUFACTURER:

Apart from clause wise compliance to Performance Parameters indicated in Para 6 above, the following details shall be submitted by manufacturer:

8.1 Working principle of the equipment/system.

8.2 Detailed description, function and weight of each unit of the equipment/system.

8.3 Technical literature, drawing and specification of each unit of the equipment along with details of relevant codes, if applicable.

8.4 Method of calibration of equipment and detailed methodology for validation of the equipment/system

8.5 Inspection and test Plan of equipment.

The offered equipment will be evaluated keeping above in view. The Inspection and test plan as decided based on information provided by manufacturer will be applicable for inspection of equipment.

9.0 INSPECTION

9.1 The inspection of equipment/system for measurement/determination of stress free temperature of LWR/CWR shall be carried out by RDSO at manufacturer's or his Indian agent premises in India. The equipment/system shall be inspected for supply as per inspection and test Plan finalized after evaluation of offer indicated in Para 8.0 above. The validation of equipment will be done against the stipulations of this specification as per the methodology submitted by the firm and approved by RDSO.

9.2 The Main Acceptance criteria for finalization of Inspection and test Plan will be as under:

(a) The equipment/system should be able to measure/determine stress free temperature non-destructively without traffic block or with traffic block not exceeding 45 min. In case, opening of fittings/fastenings is required then it would not involve any destruction to rail or any other components of track.

(b) It should be able to give absolute and accurate values within a tolerance of ($\pm 3^{\circ}\text{C}$).

(c) It should satisfactorily meet the requirements of tests as per Para 7.

10.0 COMMISSIONING OF EQUIPMENT:

The equipment on supply after inspection will be commissioned in India. The equipment will be deployed for measurement/determination of stress free temperature on two CWRs located at different locations. These CWR will either be newly laid or de-stressed in order to have known values of Stress free temperature. The measured stress free temperature values should be within a tolerance of ($\pm 3^{\circ}\text{C}$) of known values. The required De-stressing will be done by Railways with its own resources.

11.0 TRAINING

- 11.1 The Manufacturer/supplier shall clearly specify the requirement of training to Indian Railway officials indicating Training need at "Manufacturer's works/locations where similar equipments are already working" and "On the site Training".
- 11.2 The Manufacturer/supplier should provide training to eight (08) officials of Indian Railways for two weeks in calibration, operation, installation, troubleshooting, repair and maintenance on the equipment/system to be supplied to Indian Railways. This Training shall be completed before installation/commissioning of system in the field at suitable time mutually agreed by RDSO and the firm.
- 11.3 Training notes and training material shall be provided to each trainee before commencement of training.
- 11.4 The charges for providing training shall be quoted by the manufacturer/supplier on man days basis and payment for the training shall be based on actual training period. The cost of traveling, boarding and lodging during the training for the officials will be borne by the Indian Railways.
- 11.5 In case any training is required abroad, the same should be specifically mentioned giving details.

12.0 MEASUREMENT/ DETERMINATION OF STRESS FREE TEMPERATURE:

On each nominated Zonal Railway, measurement of Stress Free Temperature (SFT) using subjected system/equipment shall be undertaken on 10 identified LWRs recently de-stressed as per provisions of IRPWM preferably using rail tensor.

Entire LWR/CWR shall be divided in equal stretches of approximately one kilometer and measurement of SFT shall be carried out on these equally divided stretches every month for a period of six months which will cover extreme summer and extreme winter season of the year so that consistency in measured SFT may be ascertained.

For measurement/determination of Stress Free Temperature, the length of LWR/CWR will be taken as linear length for Track Km. and measurements will have to done particularly in following manner:

1. At a particular location of the LWR/CWR track, measurement shall be taken on both left and right rails opposite to each other.

2. In a particular LWR/CWR, measurements shall be taken at following locations-

- a) At the end of breathing lengths
- b) At the center of central portion of LWR/CWR
- c) At every 1 km distance in the non-breathing length of LWR/CWR subjected to minimum two locations (excluding locations covered by (a) & (b) above)

13.0 DOCUMENTATION

13.1 Documentation of the equipment/system for measurement/determination of stress free temperature of LWR/CWR should be supplied with equipment/system comprising of details of diagram, electrical and electronic designs with descriptions, component materials/part number, equivalent international part number, component specification etc. along with explanatory notes and comments wherever necessary.

13.2 The manuals should be prepared in detail to the satisfaction of purchaser and supplied in six copies each with the equipment/system.

13.3 Following Manuals shall be supplied with Equipment/ System:

- i. Calibration & Operating Manual
- ii. Maintenance Manual
- iii. Service Manual
- iv. Parts Manual

14.0 SPARE PARTS

14.1 Expected life of components should be listed along with their condemning limits. The component should be detailed in a separate list indicating description, part number, quantity and whether imported or indigenous.

14.2 The manufacturer/supplier should furnish list of components/spare parts which are expected to be required for trouble free operation and maintenance of the system for a period of 03 years after the warranty period indicating their description, part number, equivalent international part number, quantity and price. The price so quoted shall be valid for at least two years after the expiry of warranty period. The purchaser reserves the right to purchase these spares along with system and/or after expiry of warranty period. The manufacturer/supplier shall also guarantee availability of all required spare components to ensure trouble free service for at least ten years after warranty. For parts to be procured from the market, imported or indigenous, the sources and details should be provided.

15.0 TOOLS

All tools including measuring equipments required for diagnostics/fault finding and normal maintenance/repair should be supplied with the equipment as a complete kit. The list of such tools and equipments

proposed to be supplied with system should be furnished as a part of maintenance/repair manual.

16.0 WARRANTY

- 16.1 The manufacturer/supplier should ensure that system supplied including all parts, components etc. used are free from manufacturing defects and faults in design, material, workmanship and should be of the highest quality and in conformity with the contract specifications.
- 16.2 The warranty shall expire after 24 (twenty four) months from the date of issue of commissioning certificate which shall be issued by RDSO/Lucknow after satisfactory commissioning of the equipment for execution of work as per Para 10 above.
- 16.3 Any part of the equipment/system for measurement/determination of stress free temperature of LWR/CWR unit failing or proving unsatisfactory in service due to defective design, material or workmanship within warranty period shall be replaced by the manufacturer/supplier at his own expense. In the event of immobilization of equipment/system for measurement/determination of stress free temperature of LWR/CWR owing to defect in design, material or workmanship, this warranty period shall be extended for the duration of the said period of immobilization. Further, should any design modification be made in any part of the equipment offered, the period of 24 months would commence from the date of modified part is commissioned in service. The cost of such modification shall be borne by the manufacturer/supplier.

17.0 SERVICE ENGINEERS

The manufacturer/supplier should provide at his own expense the services of competent engineers during the warranty period for any manufacturing and design defects. Service engineers should be available for installation and commissioning of equipment/system for measurement/determination of stress free temperature of LWR/CWR for regular service for imparting instructions in operation, repair and maintenance. They should also advise the railways on appropriate maintenance tests in operating, repair and staff training facility.

18.0 ANNUAL MAINTENANCE CONTRACT (AMC)

Annual Maintenance Contract (AMC) for a period of minimum three years after completion of warranty period will be applicable. Manufacturer/supplier will quote the cost of this AMC separately. However, Cost of AMC for next five years commencing after expiry of above mentioned 03 year AMC should also be offered separately. The AMC will be without spares. Cost of spares and other details will be applicable as per Para 14.0.

19.0 CARRYING BAGS

All the individual units of equipment shall be provided with carrying bags preferably leather or suitable moisture free bags. Adequate arrangement

shall be there to protect the screen if any against mechanical damage. The bag shall also be provided with the shoulder strap.

Field Trial scheme for Stress Free Temperature Measurement using an equipment/system based on mechanical method namely 'VERSE'

1. For carrying out measurement of SFT, 10 LWRs shall be identified which are recently de-stressed as per provisions of IRPWM preferably using rail tensor in each nominated Zonal Railway
2. Entire LWR/CWR shall be divided in equal stretches of approximately one track kilometre.
3. Measurement of SFT shall be carried out on these equally divided stretches every month for a period of six months. Measurement of SFT should also be done on stretches having curves, gradients, excessive wear of selected LWR.
4. At a particular location of the LWR track, measurement shall be taken on both left and right rails opposite to each other. It shall be considered as one set of measurement.
5. The SFT measurement shall be carried out with well calibrated equipment. Calibration of the equipment shall be done as per the requirement of subjected equipment.
6. The measured SFT values using subjected equipment should be within a tolerance limit of $\pm 3^{\circ}\text{C}$ from known de-stressing temperature (T_d).
7. After first measurement, subsequent SFT shall be measured every month on the same stretches of identified LWRs for a period of six months which will cover extreme summer and extreme winter season of the year so that consistency in measured SFT shall be ascertained.
8. Variation in measured SFT from the de-stressing temperature (T_d) beyond the tolerance limit of $\pm 3^{\circ}\text{C}$ shall be analysed by the Zonal Railway.

Measured SFT data using the equipment based on mechanical method may be recorded as per the attached proforma.

Summary of measurement of SFT of LWR/CWR using an equipment based on Mechanical method

Railway: **Division:** **Section:** **Location (at km):**

LWR No. : **Length of LWR:** **UP/DN/SL:** **Date of De-stressing:**

Temp. Zone: **De-stressing Temperature (T_d) as per record:**

SNo.	Date of Measurement	Right Rail			Left Rail			Mention, activities done on LWR which can affect the SFT variation. i.e. repair on A/c of fracture after last de-stressing, occurrence of creep, kink, loss of toe load , deficient /loose fittings or ballast deficiency etc.
		Prevailing rail temp. (°C)	Measured SFT (°C)	Variation of SFT from T_d (°C)	Prevailing rail temp. (°C)	Measured SFT (°C)	Variation of SFT from T_d (°C)	
1 st reading								
2 nd reading								
3 rd reading								
4 th reading								

5 th reading								
6 th reading								
7 th reading								
8 th reading								
9 th reading								
10 th reading								

(ADEN/P.Way/.....)

(SSE/P.Way/.....)

**VARANASI DIVN.-ENGG/NORTH EASTERN RLY
TENDER DOCUMENT**

Annexure-II

Tender No: NER-BSB-2022-10

Closing Date/Time: 11/05/2022 14:30

DRM/ENGG/BSB acting for and on behalf of The President of India invites E-Tenders against Tender No **NER-BSB-2022-10** Closing Date/Time 11/05/2022 14:30 Hrs. Bidders will be able to submit their original/revised bids upto closing date and time only. Manual offers are not allowed against this tender, and any such manual offer received shall be ignored.

Contractors are allowed to make payments against this tender towards tender document cost and earnest money only through only payment modes available on IREPS portal like net banking, debit card, credit card etc. Manual payments through Demand draft, Banker cheque, Deposit receipts, FDR etc. are not allowed.

1. NIT HEADER

Name of Work	Supply , installation and commissioning of one set of equipment / system for measurement/ determination of stress free temperature of LWR/CWR for Indian Railway and executing the work of measurement/determination of stress free temperature of LWR/CWR and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more. (In Varanasi Division)		
Bidding type	Normal Tender		
Tender Type	Open	Bidding System	Single Packet System
Tender Closing Date Time	11/05/2022 14:30	Date Time Of Uploading Tender	18/04/2022 16:51
Pre-Bid Conference Required	No	Pre-Bid Conference Date Time	Not Applicable
Advertised Value	13037454.00	Tendering Section	WORKSG
Bidding Style	Single Rate for Each Schedule Item	Bidding Unit	
Earnest Money (Rs.)	215200.00	Validity of Offer (Days)	45
Tender Doc. Cost (Rs.)	0.00	Period of Completion	12 Months
Contract Type	Works	Contract Category	Expenditure
Bidding Start Date	27/04/2022	Are Joint Venture (JV) firms allowed to bid	Yes
Ranking Order For Bids	Lowest to Highest	Expenditure Type	Capital (Works)

2. SCHEDULE

S.No.	Item Code	Item Qty	Qty Unit	Unit Rate	Basic Value	Escl.(%)	Amount	Bidding Unit
Schedule A-NS ITEMS							13037454.00	
1	NS1	1.00	Job	2546604.00	2546604.00	AT Par	2546604.00	Rs.
	Description:- Cost of one complete set of equipment/ System							
2	NS2	1.00	Job	800000.00	800000.00	AT Par	800000.00	Rs.
	Description:- Cost of training (2 weeks training for a group of 8 men) (On track in India) in calibration, operation , Installation, troubleshooting, repair and maintenance of the equipment/ system.							
3	NS3	500.00	Kilometre	14892.07	7446035.00	AT Par	7446035.00	Rs.
	Description:- Execution of work of measurement/ determination of stress free temperature of LWR/CWR and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more.							
4	NS4	1.00	Job	2244815.00	2244815.00	AT Par	2244815.00	Rs.
	Description:- Various taxes as custom duty, clearance charges, port charges, Inland transportation charges , unloading and stacking charges, GST etc.							

3. ITEM BREAKUP

No item break up added	
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4. ELIGIBILITY CONDITIONS

Standard Technical Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	(i)The firm shall be manufacturer of portable equipment/system for non-destructive measurement/determination of stress free temperature. (ii)The firm should offer proven technology, with equipments/system supplied by the firm and working satisfactorily in any reputed Railway system of the world. Certificates in this regard from relevant Railway system shall be furnished. (iii)The firm shall possess sound technical and R&D credentials. (iv)The firm shall possess necessary infrastructure namely manpower, machinery for undertaking execution of work of measurement/determination of stress free temperature and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more and provide training to sufficient nos. of Indian Railway officials as per Para 11 of this specification. Firms shall submit documents in support of fulfillment of above mentioned eligibility criteria along with tender offer.	No	No	Allowed (Mandatory)

Submission of Document Verification Certificate

**VARANASI DIVN.-ENGG/NORTH EASTERN RLY
TENDER DOCUMENT**

Tender No: NER-BSB-2022-10

Closing Date/Time: 11/05/2022 14:30

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	Please submit a certificate in the prescribed format (please download the format from the link given below) for verification / confirmation of the documents submitted for compliance of eligibility / qualifying criteria. Non submission of the certificate, or submission of certificate either not properly filled in, or in a format other than the prescribed format shall lead to summary rejection of your offer. (Click here to download the Format of Self Certificatio)	No	No	Allowed (Mandatory)

Standard Financial Criteria

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	The tenderer must have received contractual payments in the previous three financial years and the current financial year up to the date of inviting of tender, at least 150% of the advertised value of the tender. The tenderers shall submit Certificates to this effect which may be an attested Certificate from the concerned department/client or Audited Balance Sheet duly certified by the Chartered Accountant/Certificate from Chartered Accountant duly supported by Audited Balance Sheet. [As per Annexure -C attached in tender document] (Full details para 10.2 in tender documents)	No	No	Allowed (Mandatory)
1.1	Note :1- Client certificate from other than Govt Organization should be duly supported by Form 16A/26AS generated through TRACES of Income Tax Department of India.	No	No	Not Allowed
1.2	Note :2- 16A / 26AS generated through TRACES of Income Tax Department of India is a supportive documents for client certificate from other than Government Orginasation. 16A / 26AS generated through TRACES of Income Tax Department stand alone will not be considered for Financial Eligibility Criteria.	No	No	Not Allowed

5. COMPLIANCE

Commercial-Compliance

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	Any bidder from a country which shares a land border with India will be eligible to bid in any procurements whether of goods , services (Including Consultancy services) or works (Including Turnkey projects) only the bidder is registered with competent authority . The competent authority for the purpose of registration under this order shall be the registration committee constituted by the Department for Promotion of Industry and Internal Trade (DPIIT) .	Yes	Yes	Allowed (Mandatory)
2	Please submit your bank details i.e. Name of the Bank along with Bank Branch Code, Account Number, IFSC Code, PAN Number, Adhar Number, Mobile Number and e-mail address.	No	No	Allowed (Mandatory)
3	Please furnish list of personnel, organization available on hand and proposed to be engaged for the subject work. [As per Annexure -D attached in tender document]	No	No	Allowed (Mandatory)
4	Please furnish list of plant and Machinery available on hand own and proposed to be inducted own and hired to be given separately for the subject work.[As per Annexure - E attached in tender document]	No	No	Allowed (Mandatory)
5	Please furnish list of Works completed in last Seven years (Ending last day of month previous to the one in which tender is invited) giving Description of Work, Organization for whom executed, approximate value of contract at time of award, Date of award and Date of Completion. Date of actual Start, Actual Completion and Final value of Contract shall also be given. [As per Annexure -F attached in tender document]	No	No	Allowed (Mandatory)
6	Please furnish list of Works on hand indicating Description of Work, Contract Value, Approximate value of balance work yet to be done and Date of award.[As per Annexure -G attached in tender document]	No	No	Allowed (Mandatory)
7	Upload Scanned receipt copy of payment of earnest money deposit(EMD) should be accepted through net banking or payment gateway only .	Yes	No	Allowed (Mandatory)
8	At the time of submission of bid, if you have any special Condition then upload in scanned pdf copy.	No	No	Allowed (Optional)
9	Please enter the percentage of local content in the material being offered. Please enter 0 for fully imported items, and 100 for fully indigenous items. The definition and calculation of local content shall be in accordance with the Make in India policy as incorporated in the tender conditions.	No	Yes	Allowed (Optional)
10	Tenderer should be either class-I or Class - II local supplier as defined in Railway Board's letter No. 2020/RS(G)/779/2/Pt. I Dated 25.09.2020 regarding Public Procurement Policy Order 2020 dated 16.09.2020. The full details of the order can be seen at https://dpiit.gov.in/sites/default/files/PPP%20MII%20Order%20dated%2016%2009%202020.pdf	Yes	Yes	Allowed (Mandatory)
11	An undertaking should be submitted by Sole proprietary firm /HUF/Company/LLP/All the member of JV/All the partners of partnership firm, which certify that he is not blacklisted or debarred by Railways or any other Ministry / Department of Govt. of India from participation in tender on the date of opening of bids. (Full details in para 14.00 and 15.00 (Documents to be Submitted Along with Tender) in tender documents).[As per Annexure-L attached in tender document]	No	No	Allowed (Mandatory)

General Instructions

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1	For those conditions for which standard formats have been given in the uploaded document titled-Formats for uploading of various format. The informations should only be submitted in these standard formats.	No	No	Not Allowed
2	Rates are inclusive of all taxes/royalty charges etc. legally leviable by State, Central Govt. or any other local authority.	No	No	Not Allowed
3	Goods and Services Tax (GST) will be recovered as per extant instruction on the subject.	No	No	Not Allowed
4	The earnest money deposited with the tender of successful tenderer will be retained as part of security deposit which will be 5 percent of the value of work awarded. The balance amount of security deposit will recovered on account bills of the work @ 6 percent till it reaches upto 5 percent of the value including earnest money.	No	No	Not Allowed
5	Performance Guarantee :- (a) The successful bidder shall have to submit a Performance Guarantee (PG) within 21 (Twenty one) days from the date of issue of Letter of Acceptance (LOA). Extension of time for submission of PG beyond 21 (Twenty one) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21 (Twenty one) days, i.e. from 22nd day after the date of issue of LOA. Further, if the 60th day happens to be a declared holiday in the concerned office of the Railway, submission of PG can be accepted on the next working day. In all other cases, if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. In case contract is terminated railway shall be entitled to forfeit Earnest Money Deposit and other dues payable against that contract. In case a tenderer has not submitted Earnest Money Deposit on the strength of their registration as a Startup recognized by Department of Industrial Policy and Promotion (DIPP) under Ministry of Commerce and Industry, DIPP shall be informed to this effect. The failed Contractor shall be debarred from participating in re-tender for that work.	No	No	Not Allowed
5.1	(b) The successful bidder shall submit the Performance Guarantee (PG) in any of the following forms, amounting to 3% of the contract value: (i) A deposit of Cash; (ii) Irrevocable Bank Guarantee; (iii) Government Securities including State Loan Bonds at 5% below the market value; (iv) Deposit Receipts, Pay Orders, Demand Drafts and Guarantee Bonds. These forms of Performance Guarantee could be either of the State Bank of India or of any of the Nationalized Banks; (v) Guarantee Bonds executed or Deposits Receipts tendered by all Scheduled Banks; (vi) Deposit in the Post Office Saving Bank; (vii) Deposit in the National Savings Certificates; (viii) Twelve years National Defence Certificates; (ix) Ten years Defence Deposits; (x) National Defence Bonds and (xi) Unit Trust Certificates at 5% below market value or at the face value whichever is less. Also, FDR in favour of F.A & C.A.O., North Eastern Railway, Gorakhpur (free from any encumbrance) may be accepted.	No	No	Not Allowed
6	The tenderer shall upload scanned copies of mandatory credentials such as experience, Payment Certificates and any other documents as applicable.	No	No	Not Allowed
7	Offer submission period :- Fifteen days prior to opening of tender, during which tenderers can submit their offer.	No	No	Not Allowed
8	(a) One qualified Graduate Engineer where the cost of the work to be executed is Rs.200 lakh and above. (b) One qualified Diploma Holder Engineer where the cost of the work to be executed is more than Rs.25 lakh, but less than Rs.200 lakh. Technical staff should be available at site whenever required by the Engineer-in-charge to take instructions. In case the contractor fails to employ the qualified Engineer, he shall be liable to pay amount of Rs.40000 and Rs.25000 for each month or part thereof for the default period for the provisions, as contained in para (a) and (b) above respectively. The decision of the Engineer-in-charge as to the period for which the required technical staff was not employed by the contractor and as to the reasonableness of the amount to be deducted on this account shall be final and binding on the contractor.	No	No	Not Allowed
9	Bank Guarantees BGs to be submitted by suppliers/contractors should be sent directly to the concerned authorities by issuing Bank under registered Post A.D.	No	No	Not Allowed
10	(1) Price Variation Clause PVC shall be applicable only for contracts of value Contract Agreement value Rs. 5 Crore and more, irrespective of the contract completion period. The conditions will be follow with up-to-date correction slips. (2) Price Variation Clause for Annual Maintenance Contract or Zonal Contract :- The price variation Clause of General Conditions of Contract shall not apply to a works contract which is either an Annual Maintenance Contract or a Zonal Contract as per Railway Boards letter No.2013/CE/I/CT/O/10-PVC-Pt.I td.27.01.2015. (3) Price Variation Clause shall be applicable accordingly attached document.	No	No	Not Allowed
11	Care in Submission of Tenders :	No	No	Not Allowed
11.1	(a) (i) Before submitting a tender, the tenderer will be deemed to have satisfied himself by actual inspection of the site and locality of the works, that all conditions liable to be encountered during the execution of the works are taken into account and that the rates he enters in the tender forms are adequate and all inclusive to accord with the provisions in Clause-37 of the Standard General Conditions of Contract for the completion of works to the entire satisfaction of the Engineer.	No	No	Not Allowed

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11.2	(a)(ii)Tenderers will examine the various provisions of The Central Goods and Services Tax Act, 2017(CGST)/ Integrated Goods and Services Tax Act, 2017(IGST)/ Union Territory Goods and Services Tax Act, 2017(UTGST)/ respective state's State Goods and Services Tax Act (SGST) also, as notified by Central/State Govt. & as amended from time to time and applicable taxes before bidding. Tenderers will ensure that full benefit of Input Tax Credit (ITC) likely to be availed by them is duly considered while quoting rates.	No	No	Not Allowed
11.3	(a)(iii)The successful tenderer who is liable to be registered under CGST/IGST/UTGST/SGST Act shall submit GSTIN along with other details required under CGST/IGST/UTGST/SGST Act to railway immediately after the award of contract, without which no payment shall be released to the Contractor. The Contractor shall be responsible for deposition of applicable GST to the concerned authority.	No	No	Not Allowed
11.4	(a)(iv)In case the successful tenderer is not liable to be registered under CGST/IGST/UTGST/ SGST Act, the railway shall deduct the applicable GST from his/their bills under reverse charge mechanism (RCM) and deposit the same to the concerned authority.	No	No	Not Allowed
11.5	(b)When work is tendered for by a firm or company, the tender shall be signed by the individual legally authorized to enter into commitments on their behalf.	No	No	Not Allowed
11.6	(c)The Railway will not be bound by any power of attorney granted by the tenderer or by changes in the composition of the firm made subsequent to the execution of the contract. It may, however, recognize such power of attorney and changes after obtaining proper legal advice, the cost of which will be chargeable to the Contractor.	No	No	Not Allowed
12	For all details of General Condition, Please See uploaded Tender Document.	No	No	Not Allowed
13	The tenderers shall submit a copy of certificate stating that all their statements/documents submitted alongwith bid are true and factual. Standard format of certificate to be submitted by the bidder is enclosed as Annexure-1. Non submission of above certificate by the bidder shall result in summarily rejection of his/their bid. It shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested by which they/he are/is qualifying the Qualifying Criteria mentioned in the Tender Document . (As Per Railway Board's letter No. 2018/CE-I/CT/37/GCC/Policy Dt. 12.05.2020)	No	No	Not Allowed

Technical-Compliances

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	1.0 SCOPE: 1.1 Indian Railway is a large network comprising majority of track on Broad Gauge. Broad Gauge (1676mm) track mostly comprises of UIC 60kg/IRS 52kg long/continuously welded rails laid on pre-stressed mono-block concrete sleepers on stone crushed ballast bed. The measurement/determination of stress free temperature is considered essential for taking preventive action against Rail Breaks and Track buckling. 1.2 This specification covers the description, function and performance parameters of equipment/system for measurement/determination of stress free temperature of Long/Continuous Welded Rails. The equipment/system must be able to measure/determine stress free temperature Non-Destructively without traffic block or with traffic block not exceeding 45 min with an accuracy of plus minus 3 degree C under different environmental and traffic conditions on Indian Railways. In case, opening of fittings/fastenings is required then it would not involve any destruction to rail or any other components of track. The equipment/system is required to measure/determine stress free temperature in LWR/CWR for taking maintenance decisions to ensure safety. 1.3 Manufacturer/supplier shall supply the complete equipment/system along with source of power as per requirement and execute the work of measurement/determination of stress free temperature of LWR/CWR and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more and to provide training to sufficient number of Indian Railway officials to make them competent to operate the equipment/system thereafter.	Yes	Yes	Allowed (Optional)
2	2.0 DEVIATIONS: The manufacturer/supplier shall furnish compliance or deviations, if any, for each clause and sub clause of the specifications along with technical explanations/details. The manufacturer/supplier shall also furnish technical and financial implications of the deviations, if any.	Yes	Yes	Allowed (Optional)
3	3.0 FUNCTIONS: The equipment/system should be able to measure/determine stress free temperature in digital forms and recording in reproducible electronic forms for taking maintenance decisions.	Yes	Yes	Allowed (Optional)

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4	<p>4.0 SERVICE CONDITIONS : 4.1 Equipment/system should be able to work satisfactorily under following service conditions: i) Ambient temperature: 0 degree C to 50 degree C ii) Rail temperature: (-) 5 degree C to (+) 60 degree C iii) Humidity: 100% iv) Rain fall: Fairly heavy v) Atmospheric condition: Very dusty and heavy fog vi) Electrified traction: Overhead electric (25KV AC or 1500 V DC) vii) Permissible rail wear: As per Para 4.3. The equipment should not get affected by induction effect of electric traction and signaling system and should not interfere with Indian Railways' signaling system. 4.2 On Indian Railways network, the electrified traction consists of over head electric system of either 25000V AC or 1500V DC with residual return current passing through one of the rails in the track. The voltage for track circuits for signaling purpose is up to 12 Volts and the corresponding current up to 1 Amp passes through the other rail. The equipment/system and its accuracy of measurement shall not get affected in any manner due to induction or any other effect of above stated electric traction and signaling systems. 4.3 The Broad gauge track on Indian Railways is laid with 60 Kg (UIC)/IRS 52 Kg rails welded into Long/Continuously welded Rails. The in-service wear of Rails permitted is laid down in Indian Railway Permanent Way Manual (IRPWM). The permissible wear on Rail as stipulated in Para 702 (1) (b) of IRPWM, June-2020 is reproduced as under: Vertical Rail Wear Gauge Rail Section Vertical Wear B.G. 60 Kg/metre -13.00 mm 52 Kg/metre 8.00 mm Lateral Rail wear Section - Curve, Gauge - BG, Group A & B Routes -8 mm and Group C & D Routes 10 mm . Section - Straight, - Gauge - BG, Group A & B Routes 6 mm and Group C & D Routes 8 mm . The equipment/system and its accuracy of measurement shall not get affected in any manner on Rail with wear up to limits indicated above</p>	Yes	Yes	Allowed (Optional)
5	<p>5.0 ELIGIBILITY CRITERIA : (i) The firm shall be manufacturer of portable equipment/system for non-destructive measurement/determination of stress free temperature. (ii) The firm should offer proven technology, with equipments/system supplied by the firm and working satisfactorily in any reputed Railway system of the world. Certificates in this regard from relevant Railway system shall be furnished. (iii) The firm shall possess sound technical and R&D credentials. (iv) The firm shall possess necessary infrastructure namely manpower, machinery for undertaking execution of work of measurement/determination of stress free temperature and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more and provide training to sufficient nos. of Indian Railway officials as per Para 11 of this specification. Firms shall submit documents in support of fulfillment of above mentioned eligibility criteria along with tender offer. (v) The firms shall submit documents in support of turnover for last five years.</p>	Yes	Yes	Allowed (Mandatory)
6	<p>6.0 SYSTEM DESCRIPTION AND PERFORMANCE PARAMETERS : 6.1 The equipment/system must be a proven system and should be functional in all climatic conditions prevailing in India. Performance certificate for satisfactory working of the system/equipment in any reputed railways systems of world shall be furnished. 6.2 The equipment/system should be able to measure/determine stress free temperature non-destructively without traffic block or with traffic block not exceeding 45 min. In case, opening of fittings/fastenings is required then it would not involve any destruction to rail or any other components of track. 6.3 The equipment/system should be able to measure/determine stress free temperature in degree Centigrade on screen in digital form and should provide relevant record in reproducible electronic form giving details of location, rail temperature for further analysis and reporting. 6.4 Data Analysis and Data Reduction should be performed automatically. 6.5 The equipment/system shall be portable and along with the source of power it should be able to be carried on manually operated trolley, which could be taken off track to the safe distance on train being sighted or should be able to be carried in self-propelled rail car/mounted on locomotive. Total weight of the equipment/system along with source of power/batteries shall be furnished by the firm. 6.6 The trolley mounted equipment/system should be able to be taken off the track manually on train being sighted and should be able to start quickly for continuing measurements on trolley being mounted on track after passage of train. Switching off and switching on time should be about a minute. Manually operated trolley suitable for working on Indian Railways shall be provided by the firm for execution of work. 6.7 The recording trolley/car/locomotive should not influence the measuring results. 6.8 The measuring system should be compatible with rails carrying return currents and track circuits currents. 6.9 The equipment /system should be capable of taking measurement/determination of stress free temperature with permissible rail wear as per Indian Railway Permanent Way Manual (IRPWM) as amended time to time and curved track up to 5 Degree curvature. 6.10 The equipment/system should be suitable for use on rails of all grades mentioned in Specification for Flat Bottom Rails (IRS-T-12: 2009 with latest amendment).</p>	Yes	Yes	Allowed (Mandatory)

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6.1	6.11The equipment/system shall be battery/generator operated. .1If equipment/system is battery operated, rechargeable battery should have sufficient capacity to be able to work for 16 hrs. continuously without need for recharging and charging time should be about 4-6 hrs. with 220V 50Hz supply. Also, built in type of separate battery charger shall be provided. Automatic cut off for battery charger and battery shall be provided to protect the battery from overcharging. Also, automatic cut off switch to be provided to protect against deep discharging of battery below the workable voltage. .2If equipment/system is generator operated, generator should be able to produce the power which is compatible to the requirement of equipment/system. 6.12The system should be able to compare the computed Stress Free Temperature (SFT) with the original installed value/de-stressing temperature (td). 6.13 It should be able to give absolute and accurate values within a tolerance of (plus minus 3 Degree C). 6.14The equipment should be sufficiently robust and weather proof to withstand the normal track and vehicle environment. 6.15The equipment must be inherently stable. 6.16The system should be insensitive to temperature changes.	Yes	Yes	Allowed (Optional)
7	7.0 TESTS FOR EQUIPMENTS FOR ROBUSTNESS AND TROPICALISATION: 7.1 BUMP TEST :- In packed condition the equipment should be able withstand 40g, 4000 bumps. 7.2 RESISTANT TO VIBRATION :- The unit should be able to give normal performance after being subjected to 1g, 10 to 100 Hz vibration for 30 minutes. 7.3 TROPICALISATION & HUMIDITY TEST :- The equipment should be tropicalised to suit Indian climatic conditions for damp cycle test as per IS 9000 Part 5 (Sec. 1 & 2):1981. The equipment shall be properly packed to prevent corrosion and damages during transit. Individual units of the equipment/system should have been subjected and passed the bump, resistance to vibration and tropicalisation & humidity tests.	Yes	Yes	Allowed (Optional)
8	8.0 DETAILS TO BE PROVIDED BY MANUFACTURER: Apart from clause wise compliance to Performance Parameters indicated in Para 6 above, the following details shall be submitted by manufacturer: .1 Working principle of the equipment/system. .2 Detailed description, function and weight of each unit of the equipment/system. .3 Technical literature, drawing and specification of each unit of the equipment along with details of relevant codes, if applicable. .4 Method of calibration of equipment and detailed methodology for validation of the equipment/system .5 Inspection and test Plan of equipment. The offered equipment will be evaluated keeping above in view. The Inspection and test plan as decided based on information provided by manufacturer will be applicable for inspection of equipment	Yes	Yes	Allowed (Mandatory)
9	9.0 INSPECTION :- .1 The inspection of equipment/system for measurement/determination of stress free temperature of LWR/CWR shall be carried out by RDSO at manufacturer's or his Indian agent premises in India. The equipment/system shall be inspected for supply as per inspection and test Plan finalized after evaluation of offer indicated in Para 8.0 above. The validation of equipment will be done against the stipulations of this specification as per the methodology submitted by the firm and approved by RDSO. .2 The Main Acceptance criteria for finalization of Inspection and test Plan will be as under: (a)The equipment/system should be able to measure/determine stress free temperature non-destructively without traffic block or with traffic block not exceeding 45 min. In case, opening of fittings/fastenings is required then it would not involve any destruction to rail or any other components of track. (b)It should be able to give absolute and accurate values within a tolerance of (plus minus 3 Degree C). (c)It should satisfactorily meet the requirements of tests as per Para 7.	Yes	Yes	Allowed (Optional)
10	10.0 COMMISSIONING OF EQUIPMENT: The equipment on supply after inspection will be commissioned in India. The equipment will be deployed for measurement/determination of stress free temperature on two CWRs located at different locations. These CWR will either be newly laid or de-stressed in order to have known values of Stress free temperature. The measured stress free temperature values should be within a tolerance of (plus minus 3 degree C) of known values. The required De-stressing will be done by Railways with its own resources.	Yes	Yes	Not Allowed
11	11.0 TRAINING: 11.1 The Manufacturer/supplier shall clearly specify the requirement of training to Indian Railway officials indicating Training need at "Manufacturer's works/locations where similar equipments are already working and "ON the site Training " 11.2 The Manufacturer/supplier should provide training to eight (08) officials of Indian Railways for two weeks in calibration, operation, installation, troubleshooting, repair and maintenance on the equipment/system to be supplied to Indian Railways. This Training shall be completed before installation/commissioning of system in the field at suitable time mutually agreed by RDSO and the firm. 11.3 Training notes and training material shall be provided to each trainee before commencement of training. 11.4 The charges for providing training shall be quoted by the manufacturer/supplier on man days basis and payment for the training shall be based on actual training period. The cost of traveling, boarding and lodging during the training for the officials will be borne by the Indian Railways. 11.5 In case any training is required abroad, the same should be specifically mentioned giving details.	Yes	Yes	Allowed (Optional)

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12	12.0 MEASUREMENT / DETERMINATION OF STRESS FREE TEMPERATURE: For measurement/determination of Stress Free Temperature, the length of LWR/CWR will be taken as linear length for Track Km. and measurements will have to done particularly in following manner: .1 At a particular location of the LWR/CWR track, measurement shall be taken on both left and right rails opposite to each other. .2 In a particular LWR/CWR, measurements shall be taken at following locations- a) At Switch Expansion Joints (SEJs)/ on the normal rail section at the end of SEJ b) At the centre of breathing lengths c) At the end of breathing lengths d) At the centre of central portion of LWR/CWR e) At every 1 km distance in the non-breathing length of LWR/CWR subjected to minimum two locations (excluding locations covered by (c) & (d) above)	Yes	Yes	Allowed (Optional)
13	13.0 DOCUMENTATION :- 13.1 Documentation of the equipment/system for measurement/determination of stress free temperature of LWR/CWR should be supplied with equipment/system comprising of details of diagram, electrical and electronic designs with descriptions, component materials/part number, equivalent international part number, component specification etc. along with explanatory notes and comments wherever necessary. 13.2 The manuals should be prepared in detail to the satisfaction of purchaser and supplied in six copies each with the equipment/system. 13.3 Following Manuals shall be supplied with Equipment/ System: i. Calibration & Operating Manual ii. Maintenance Manual iii. Service Manual iv. Parts Manual	Yes	Yes	Allowed (Mandatory)
14	14.0 SPARE PARTS: 14.1 Expected life of components should be listed along with their condemning limits. The component should be detailed in a separate list indicating description, part number, quantity and whether imported or indigenous. 14.2 The manufacturer/supplier should furnish list of components/spare parts which are expected to be required for trouble free operation and maintenance of the system for a period of 03 years after the warranty period indicating their description, part number, equivalent international part number, quantity and price. The price so quoted shall be valid for at least two years after the expiry of warranty period. The purchaser reserves the right to purchase these spares along with system and/or after expiry of warranty period. The manufacturer/supplier shall also guarantee availability of all required spare components to ensure trouble free service for at least ten years after warranty. For parts to be procured from the market, imported or indigenous, the sources and details should be provided	Yes	Yes	Allowed (Mandatory)
15	15.0 TOOLS: All tools including measuring equipments required for diagnostics/fault finding and normal maintenance/repair should be supplied with the equipment as a complete kit. The list of such tools and equipments proposed to be supplied with system should be furnished as a part of maintenance/repair manual	Yes	Yes	Allowed (Mandatory)
16	16.0 WARRANTY: 16.1 The manufacturer/supplier should ensure that system supplied including all parts, components etc. used are free from manufacturing defects and faults in design, material, workmanship and should be of the highest quality and in conformity with the contract specifications. 16.2 The warranty shall expire after 24 (twenty four) months from the date of issue of commissioning certificate which shall be issued by RDSO/Lucknow after satisfactory commissioning of the equipment for execution of work as per Para 10 above. 16.3 Any part of the equipment/system for measurement/determination of stress free temperature of LWR/CWR unit failing or proving unsatisfactory in service due to defective design, material or workmanship within warranty period shall be replaced by the manufacturer/supplier at his own expense. In the event of immobilization of equipment/system for measurement/determination of stress free temperature of LWR/CWR owing to defect in design, material or workmanship, this warranty period shall be extended for the duration of the said period of immobilization. Further, should any design modification be made in any part of the equipment offered, the period of 24 months would commence from the date of modified part is commissioned in service. The cost of such modification shall be borne by the manufacturer/supplier.	Yes	Yes	Allowed (Mandatory)
17	17.0 SERVICE ENGINEERS: The manufacturer/supplier should provide at his own expense the services of competent engineers during the warranty period for any manufacturing and design defects. Service engineers should be available for installation and commissioning of equipment/system for measurement/determination of stress free temperature of LWR/CWR for regular service for imparting instructions in operation, repair and maintenance. They should also advise the railways on appropriate maintenance tests in operating, repair and staff training facility	Yes	Yes	Allowed (Optional)
18	18.0 ANNUAL MAINTENANCE CONTRACT (AMC) Annual Maintenance Contract (AMC) for a period of minimum three years after completion of warranty period will be applicable. Manufacturer/supplier will quote the cost of this AMC separately. However, Cost of AMC for next five years commencing after expiry of above mentioned 03 year AMC should also be offered separately. The AMC will be without spares. Cost of spares and other details will be applicable as per Para 14.0.	Yes	Yes	Allowed (Mandatory)
19	19.0 CARRYING BAGS All the individual units of equipment shall be provided with carrying bags preferably leather or suitable moisture free bags. Adequate arrangement shall be there to protect the screen if any against mechanical damage. The bag shall also be provided with the shoulder strap.	Yes	Yes	Not Allowed
20	The tenderer should go through the technical specification of equipment / system for measurement / Determination of stress free temperature of LWR/CWR of March 2021 issued by RDSO attached with tender document (Streetfreetemperature-RDSOmarch-2021.pdf).The Tenderer should submit the required document as per above specification. The offers submitted without compliance above will not be accepted.	Yes	Yes	Allowed (Optional)

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Undertakings

S.No.	Description	Confirmation Required	Remarks Allowed	Documents Uploading
1	I/We hereby Confirm that the rates, rebates and/or other financial terms, if any, quoted by us in the relevant fields of the Financial Bid page will only be the ruling terms for deciding the inter-se ranking, and any such condition having financial repercussions, if quoted by us anywhere else including attached documents shall not be considered for deciding inter-se ranking. However, Railways shall have the right to incorporate any such condition quoted by us, in the contract, at their discretion, if contract is placed on us.	No	No	Not Allowed
2	I/We have read the various conditions attached/ referred to in this tender document, and agree to abide by the said conditions.	No	No	Not Allowed
3	The amount as stipulated in tender document is herewith forwarded as Earnest Money. Full value of the earnest Money shall stand forfeited without prejudice to any other right or remedies in case my/our Tender is accepted and if :	No	No	Not Allowed
3.1	I/We do not execute the contract documents as stipulated in performance guarantee clause of IRSGCC-July-2020 as detailed in general instructions	No	No	Not Allowed
3.2	I/We do not commence the work within Fifteen days after receipt of orders to that effect.	No	No	Not Allowed
4	I/We have read the various conditions to tender attached hereto and agree to abide by the said conditions. I/We also agree to keep this tender open for acceptance for a period of 45 days (In case of two packet system of tendering 60 days) from the date fixed for opening the same and in default thereof, I/We will be liable for forfeiture of my/our Earnest Money . I/We offer to do the work for North Eastern Railway, at the rates quoted in the attached schedule and hereby bind myself/ourselves to complete the work in all respects within the period of completion stipulated in the tender document, from the date of issue of letter of acceptance of the tender.	No	No	Not Allowed
5	Until a formal agreement is prepared and executed, acceptance of this tender shall constitute a binding contract between us subject to modifications, as may be mutually agreed to between us and indicated in the letter of acceptance of my/our offer for this work.	No	No	Not Allowed
6	I/ We have visited the works site and I / We am / are aware of the site conditions.	No	No	Not Allowed
7	I/We also hereby agree to abide by the Indian Railways Standard General Conditions Of Contract-July - 2020, with all correction slips up-to-date and to carry out the work according to the Special Conditions of Contract and Specifications of materials and works as laid down by Railway in the annexed Special Conditions/Specifications, Schedule of Rates with all correction slips up-to-date for the present contract.	No	No	Not Allowed
8	I/We also submit a copy of certificate stating that they are not liable to be disqualified and all their statement/documents submitted alongwith bid are true and factual Standard format of the certificate to be submitted by the bidder is enclosed as Annexure-1. Non submission of the certificate, or submission of certificate either not properly filled in, or in a format other than the prescribed format shall lead to summary rejection of your offer and it shall be mandatorily incumbent upon the tenderer to identify, state and submit the supporting documents duly self attested by which they/he is qualifying the Qualifying Criteria mentioned in the Tender Document. It will not be obligatory on the part of Tender Committee to scrutinize beyond the submitted document of tenderer as far as his qualification for the tender is concerned.	No	No	Not Allowed

6. Documents attached with tender

S.No.	Document Name	Document Description
1	PublicProcurementPolicy.pdf	Public procure policy
2	Streefretemprature-RDSOmarch-2021.pdf	Stree free tempratureRDSOmarch2021
3	ConditionofContract.pdf	Condition of Contract

This tender complies with Public Procurement Policy (Make in India) Order 2017, dated 15/06/2017, issued by Department of Industrial Promotion and Policy, Ministry of Commerce, circulated vide Railway Board letter no. 2015/RS(G)/779/5 dated 03/08/2017 and 27/12/2017 and amendments/ revisions thereof.

As a Tender Inviting Authority, the undersigned has ensured that the issue of this tender does not violate provisions of GFR regarding procurement through GeM.

Signed By: ARUN KUMAR SINGH

Designation : DEN/G

**VARANASI DIVN.-ENGG/NORTH EASTERN RLY
TENDER DOCUMENT**

Tender No: NER-BSB-2022-10

Closing Date/Time: 11/05/2022 14:30

NORTH EASTERN RLY

**VARANASI
DIVN.-ENGG
DRM/ENGG/BSB,
Lahartara
Varanasi, 221002
Uttar Pradesh, India**

Letter No: VARANASI DIVN.-ENGG / NER-BSB-2022-10 / 01069450054451

Dated: 14/05/2022

**M/s PANDROL RAHEE TECHNOLOGIES PVT
LTD-KOLKATA**

Kemwell Manor, 5th Floor,
10/D/2, Ho Chi Minh Sarani
Kolkata- 700071
West Bengal, India

Sub: Letter Of Acceptance

- Ref:**
1. Tender No. NER-BSB-2022-10 closing date 11-05-2022 14:30 for Supply , installation and commissioning of one set of equipment / system for measurement/ determination of stress free temperature of LWR/CWR for Indian Railway and executing the work of measurement/determination of stress free temperature of LWR/CWR and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more. (In Varanasi Division)
 2. Your bid ID **13741839** dated **11/05/2022 12:04**

The Competent Authority has accepted your offered rates in connection with the subject work. The total cost of the work at the accepted rates works out to Rs. 14217453.76 (Rupees One Crore Fourty-Two Lakh Seventeen Thousand Four Hundred And Fifty-Three Rupees And Seventy-Six Paise Only)

A sum of Rs.215200 deposited as Earnest Money vide IREPS reference ID PE664915233742 has been retained towards initial Security Money for due and faithful fulfillment of the contract, and the balance Security Money will be recovered from the progressive bills @ 6 % of the bill amount till it reaches 5 % of the contract value in terms of clause 16.1 of IRSGCC.

You are requested to submit Performance Guarantee in the form as given in Clause 16.4 of IRSGCC equivalent to 3 % of the contract value amounting to Rs. 426523.61 (Rupees Four Lakh Twenty-Six Thousand Five Hundred And Twenty-Three Rupees And Sixty-One Paise Only) within 21 days from the date of issue of Letter of Acceptance, valid up to stipulated date of completion plus 60 days so that contract agreement can be executed. Extension of time for submission of PG beyond 21(Twenty one) days and upto 60 days from the date of issue of LOA may be given by the Authority who is competent to sign the contract agreement. However, a penal interest of 12% per annum shall be charged for the delay beyond 21(Twenty one) days, i.e. from 22nd day after the date of issue of LOA. if the Contractor fails to submit the requisite PG even after 60 days from the date of issue of LOA, the contract is liable to be terminated. Railway shall be entitled to forfeit Earnest Money Deposit and other dues payable against that contract. The failed Contractor shall be debarred from participating in retender for that work. The Performance Guarantee should be in form of FDR's (with a stamp "Valid for Auto Renewal facility") and Bank Guarantee etc. issued by SBI or any Nationalised Bank or Schedule Bank in favour of F.A. & C.A.O., North Eastern Railway, Gorakhpur. The Performance Bank

Guarantee Should be executed on non-judicial stamp paper of Rs. 5/- Per thousand maximum Rs. 10,000/-. A Proforma is enclosed with tender document. The Bank Guarantee should be sent to this Office directly by the issuing bank under registered post AD. The Bank Guarantee should be valid upto DOC plus 60 Days. In case, if you are depositing Performance Bank Guarantee in the form of other prescribed mode, a non-judicial stamp paper of Rs. 100/- along with an "AFFIDAVIT" shall be required to submit at the time of execution of agreement.

The entire work shall be completed within 12 month from the date of issue of Letter of Acceptance. Sr. DEN/Co-ord./BSB is Competent Authority of this subject work.

1: Rates are inclusive of all taxes/royalty charges etc. legally leviable by State, Central Govt. or any other local authority.

2: In addition to General condition of contract 2020 and Central public works department specification Volume I & II of 2019, revised upto date, special condition attached shall also apply.

3: Goods & Services Tax (GST) will be recovered as per extant instruction on the subject.

4: The successful tender will have to deposit full performance guarantee as per Railway Board letter No. 2007/CE-1/CT/18/PT-XII Dt:-31-12-10 before execution of the agreement.

5: www.shramikkalyan.indianrailways.gov.in : Contractor shall register his firm/company etc. and upload requisite details of labour and their payment in this portal.

6: Kindly contact All Assistant Divisional Engineer's of BSB Div. to start the work immediately. Till the time contract Agreement do not sign, this letter of acceptance will be binding as a contract agreement.

6: Copy to : 1) ADRM/Gen.Admin./BSB, 2) Sr. DFM/BSB, 3) All ADEN's of BSB Div., 4) Regional Labour Commissioner (Central), Shram bhawan ATI Compus, Kanpur-208022, 5) Labour Enforcement Officer, Motihari, 6) OS/Bill, 7) GM/Vigilance/Gorakhpur and 8) SSE/Esstt./Varanasi

1 : The rate of Item No. 2 & 4 of Schedule-A (NS Items) should not be utilized for comparison or treated as LAR in any future tender/Estimate.

All Other terms and conditions, as stipulated in the tender documents shall be applicable.

ARUN KUMAR SINGH
DEN/G
Digitally Signed
[View Signature Details](#)

Awarded Quantities And Rates

Item Sno.	Item Desc	Item Code	Item Qty	Qty Unit	Unit Rate (Rs)	Escl. (%)	Advt.Value (Rs)	Bid Rate/ Unit Rate	Bid Amount (Rs)
Schedule A-NS ITEMS (Item Directory - Not Applicable)							13037454.00		
1	Cost of one complete set of equipment/ System	NS1	1	Job	2546604.00	At Par	2546604.00	2546603.91 Rs/Unit	2546603.91
2	Cost of training (2 weeks	NS2	1	Job	800000.00	At Par	800000.00	1800000.00 Rs/Unit	1800000.00

	training for a group of 8 men) (On track in India) in calibration, operation , Installation, troubleshooting, repair and maintenance of the equipment/ system.								
3	Execution of work of measurement/ determination of stress free temperature of LWR/CWR and further analysis for taking maintenance decisions for a period of one year which will cover all seasons of the year or 500 kilometers whichever is more.	NS3	500	Kilometre	14892.07	At Par	7446035.00	14892.07 Rs/Unit	7446035.00
4	Various taxes as custom duty, clearance charges, port charges, Inland transportation charges , unloading and stacking charges, GST etc.	NS4	1	Job	2244815.00	At Par	2244815.00	2424814.85 Rs/Unit	2424814.85
Schedule Totals							14217453.76		
Total Value							13037454.00		14217453.76
							Rebate on Total Value (%)		0.00
							Net Bid Value		14217453.76

Item Breakup

No break up item added
