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CORRIGENDUM

Tender Reference No. :- PUR/395/SKP/DB/EQM/25-26

Tender ID :- 2025_CSIR_245952_1

Item Name :- Supply, Installation & Commissioning of HIGH TEMPERATURE EROSION-CORROSION TEST RIG

Consequent to the Pre-Bid Meeting held on 03.09.2025, the revised technical specification are attached at Annexure-A.

Further, the following TECHNICAL EVALUATION CRITERIA are incorporated in the relevant sections of the tender document.

- **CONCEPT DRAWING OF THE EQUIPMENT NEED TO BE APPROVED BY CSIR-NML, JAMSHEDPUR (APPLICABLE TO SELECTED SUPPLIER ONLY) TO ENSURE GREATER CLARITY DURING EVALUATION**.

The above amendments and technical evaluation criteria may be read with the relevant sections and clauses of the tender document.

Bidders are requested to submit their quotations after going through the above amendments.

All other terms and conditions of the tender document shall remain unchanged.

Stores & Purchase Officer,
CSIR-NML, Jamshedpur

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ANNEXURE-A

Technical Specifications of High temperature Erosion-Corrosion Test Rig

High temperature erosion-corrosion test rig is required to evaluate the erosion resistance of materials in normal air/inert gas/flue gas containing abrasive particles. The test rig should have facility for high temperature testing in normal air/inert gas/flue gas environment, varying the angle of incidence on the sample, particle velocity and flux density. The test rig should be capable of using different particles such as silica, alumina in normal/inert/corrosive (i.e., flue gases) atmosphere. The system should be as per guidelines of ASTM G76 and ASTM G211 standards.

Detailed technical features are highlighted below:

A. Erodent/Particle

(i) Material: Alumina, Silica
(ii) Size: 40-60 micron or greater range
(iii) Feed rate: min. 2gm/min and higher
(iv) Impact velocity: 30 to 150 m/sec or greater
(v) Velocity measurement: Rotating double disc methods
(vi) Suitable arrangement for preheating/Provision for free flow of erodent

B. Fluid (Air, Inert/Flue gas)

(i) Dry compressor (Moisture and dust filters for compressed air supply)
(ii) Air pressure: Min. 6 bar or higher
(iii) Nozzle material: Alumina/Tungsten carbide or equivalent material (high resistant to wear/tear and hot oxidation/corrosion) (**04 Nos. Nozzle**)
(iv) Nozzle size: 1.5 mm and 4 mm diameter
(v) Nozzle holder (**02 Nos.**)
(vi) Air pressure and flow control: suitable air pressure controller and pressure gauge/valve
(vii) Air out let temperature from the Nozzle: Ambient to 1000 ^{0}C

C. High Temperature Test Chamber

(i) Material: IN 625 or better (resistant to wear/tear and hot oxidation/corrosion)
(ii) Temperature: Ambient to 1000 ^{0}C
(iii) Chamber should be leak-proof and well insulated

D. Erodent Reservoir

(i) Suitable hopper to hold erodent particles
(ii) Erodent reservoir capacity: 2 kg or higher
(iii) Suitable arrangement for erodent/particle collection (**2 Nos.**)
(iv) Suitable arrangement for preheating/provision for free flow of erodent should be ensured

E. Sample/Sample holder

(i) Sample holders to hold specimen size of 25 x 25 x 5mm (as per ASTM G -76) (**02 Nos.**) and 25 x 75 x 5mm (as per ASTM G- 211) (**02 Nos.**)

(ii) Specimen to Nozzle Stand of distance: 10 mm to 50 mm with provision to vary the distance
(iii) Angle of impingement: 15 to 90^0, angle of increment in step of $10/15^0$
(iv) Standard test specimen as per ASTM G-76 **(25 Nos.)** and Standard test specimen as per ASTM G-211 **(25 Nos.)**

F. Normal air/Inert gas/Flue gas inlet/outlet system
(i) Provision for normal air/inert gas/flue gas purging into chamber to ensure specimen exposure to the same and for outgoing/outlet flue gas from the chamber

G. Control system
(i) Electronic controlled to adjust velocity, feed rate and time
(ii) Data acquisition software
(iii) Should be able to store and analyze the input and output data

Technical Evaluation Criteria:

- Supplier should have supplied similar high temperature erosion/corrosion test rig within India to govt. research labs/organization. Evidence of the same with purchase order details should be submitted.
- Repeatability and reproducibility of erosion rates at high temperatures should be established using supplier provided reference materials. The coefficient of variation should not exceed 15% at 750 ^{0}C and above.
- The committee retains the right to request a demonstration of the quoted instrument during technical evaluation, either offline or online as necessary. The committee will communicate the appropriate date and time for the demonstration to the bidders.
- Concept drawing of the equipment need to be approved by CSIR-NML, Jamshedpur (applicable to selected supplier only).

Warranty:

- 03 years onsite comprehensive warranty for whole system from the date of successfully installation, commissioning and acceptance as certified by CSIR-NML's user.

NML scope:

Required space and electrical power will be provided by CSIR-NML, Jamshedpur.

Stores & Purchase Officer,
CSIR-NML, Jamshedpur