

TENDER DOCUMENT – GLOBAL (Non- Committal)

FOR

Fabrication of Special Purpose Customized heating system

सीएसआईआर – राष्ट्रीयधातुकर्मप्रयोगशाला

CSIR - NATIONAL METALLURGICAL LABORATORY

(वैज्ञानिक एवं औद्योगिक अनुसंधान परिषद) / (Council of Scientific & Industrial
Research)

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Email: gvs@nmlindia.org Website: www.nmlindia.org

CSIR- National Metallurgical Laboratory (CSIR-NML), Jamshedpur, India is one of the premier laboratories under Council of Scientific and Industrial Research, an autonomous body under Department of Scientific and Industrial Research (Government of India), NewDelhi.

Research and developments at National Metallurgical Laboratory focuses on Minerals, Metals and Materials. Through an arsenal of state of the art facilities and infrastructure, and on the strength of its expertise, NML has evolved into a premier Indian organization in the stated areas. NML has the largest creep testing facility in India and one of the largest in Asia. Its materials evaluation and characterization facilities compare with the best in the world. NML has strong presence in Magnetic materials, Rapidly solidified alloys, Surface Coatings, Metallic Foams, and many others. Advanced materials processing and post-processing carried out include Mechanochemical activation, Semi-solid processing, Biomimicry, Thermo-mechanical treatments, High Temperature Synthesis, Advanced Joining, Grain boundary engineering, High strain rate forming, and several other techniques.

With this mandate, An Expression of Interest (EoI) is initiated at CSIR-NML with the prospective manufacturers, their authorized channel partners or agents/suppliers and system integrators to discuss with the Technical Committee on the aspects of utility, technology, feature, literature, design, technical parameters, clientele and other related issues of the equipment and material for the following items to be procured for CSIR- NML.

File No. NML/MTE/BRK/Ek-06/21

Item Description: Request for special purpose heating system fabrication.

1. Address for submission of document and for obtaining further information:

HEAD, Research Planning and Business Development Division, CSIR- National Metallurgical Laboratory, Burmamines, Jamshedpur -831007 Tel: 0657- 2345205/206

Fax: 0657- 2345213 Electronic mail address: skp@nmlindia.org/gvs@nmlindia.org

2. The Bidding document can be downloaded free of cost directly from Central Public Procurement Portal (CPPP) of Government of India website:

<https://etenders.gov.in/eprocure> and CSIR-NML website www.nmlindia.org.

3. **Schedule for submission:** The prospective bidders should adhere to due dates specified in Tender Details corresponding to this Tender. The Schedule for Submission of proposals and Opening of proposals is as follows:-

Bidding Document Publishing Date and Time	06/10/2021	6.00 PM
Document Download Start Date and Time	06/10/2021	6.00 PM
Seek Clarification Start Date and Time	07/10/2021	6.00 PM
Seek Clarification End Date and Time	20/10/2021	6.00 PM
Bid Submission Start Date and Time	21/10/2021	9.00 AM
Bid Submission End Date and Time	27/10/2021	3.00 PM
Bid Opening Date and Time	27/10/2021	5.00 PM

4. **Date and Time for receipt of e-proposals:** Email proposal may be forwarded to gvs@nmlindia.org. Fax responses will not be entertained. Late/delayed proposals will not be considered.. In case the last date and time is declared a holiday at a later date, then the due date and time for receipt and opening will be shifted to the next working date and time automatically. No corrigendum will be issued in this regard.
5. For evaluating the responses, CSIR-NML may call vendors for further presentations of their cases in person or Presentation can be considered via Skype/Video Conferencing also.
6. The Director, CSIR- National Metallurgical Laboratory, Jamshedpur, India reserves the right to accept or reject any or all offers or withdraw the Notice at any stage of processing without assigning any reason whatsoever, such an event would not cause obligation of any kind to CSIR-NML.

INTRODUCTION

CSIR NML plans to fabricate a special purpose heating system for component annealing. The said device component needs to be fabricated, assembled and commissioned at our works at Vishakhapatnam by the vendor as per CSIR-NML technical inputs that have been provided in the present document. Vendors are expected to provide their inputs / modifications to technical specifications mentioned in the current document.

Special Purpose Heating System

Description of Requirement

The proposed heat system is meant for heat treating a large size component as provided in the drawing. The system should be capable of maintaining a prescribed thermal profile along the

marked section/walls of the component. The thermal profile will be programmed as per the requirement.

Technical specifications: (Drawing no: NML/ENG/GSF/SK-01 is attached)

1. The heating system should be **programmable** as per the user need.
2. The heating arrangement should be **split type with the top and bottom parting** as indicated in the drawing.
3. The component should be fixed on a **loading arrangement (fixture)** for the ease of placing on the furnace for heating purpose and withdrawing from the furnace after a programmed duration of heating. A schematic drawing of the component for heat treatment is shown in the drawing attached. (NML/ENG/GSF/SK-03).
4. The component fixing/holding arrangement should be suitable so as to remove it from the furnace in hot condition.
5. Heating arrangement should be resistance heating type.
6. **Multi temperature thermal profile zones** should be possible. A minimum of **three thermal profile zones** of different temperatures; high, medium and low, are envisaged. One example of thermal profile of different zones of component is 1) 1100°C, 2) 1000°C, and 3) 600°C. A type example is given in the drawing. (NML/ENG/GSF/SK-02).
7. The heating rate to achieve the programmed thermal profile should be 30°C per minute.
8. The highest hot zone temperature is 1150°C for continuous operation of 10 hours.
9. Each zone's temperature profile required to be monitored with two to **three thermocouples**.
10. The power control panel should be **programmable with HMI interface**. All temperatures of the three thermal profile zones should be **displayed in real-time on HMI display**. Dual display of set temperature and actual temperature is mandatory. Any other controllers/ devices/fittings required for smooth functioning of the furnace for long hours may be provided
11. **RS 232/RS 485** digital or suitable communication port to record the furnace data (HMI)
12. Power rating of power supply should be as per the thermal profile requirement
13. Outside **skin temperature should not exceed 50°C** when operating at maximum temperature.
The insulation material should be of light weight since the furnace is split type. This is to allow ease of handling it.
14. **Long lasting heating** elements with setup easy for maintenance and replacement
15. Over temperature **control & protection** in the event of primary control failure
16. The minimum delivery period is 5 weeks at our **works at Vishakhapatnam**.
17. One year warranty from the date of installation and commissioning at CSIR-NML's works at Vishakhapatnam along with Necessary **spares, fuses** and accessories for one year
18. A detailed drawing of the heating system will be shared only with the interested parties because of its confidentiality.
19. A drawing of the component to be heat treated is provided in drawing no: NML/ENG/GCF/SK-03 is attached.
- 20.** A detailed technical drawing of the heating system should be supplied with the technical bid for CSIR-NML's endorsement.

1. GENERAL TERMS & CONDITIONS

:

- 1.1 The job will be taken up on turnkey basis. IPR will be retained with CSIR-NML.
- 1.2 The party should have prior experience in developing such equipment.
- 1.3 List of items and instruments as described is not exhaustive.
- 1.4 The system should be complete in all respects with all associated electrical, controls etc.
- 1.5 The system should be supplied as ready for use (only power and adequate space will be provided).
- 1.6 All the components of the experimental set-up are to be designed for continuous operation.
- 1.7 The system should have proper shielding for elimination of all electronic noises and mechanical vibrations affecting instrument performance.
- 1.8 Proper care is to be taken for the ease of operation and maintainability.
- 1.9 Operation and maintenance manuals are to be supplied.
- 1.10 The supplier to provide detailed drawing.

7.12 Settlement of Disputes

The Purchaser and the supplier shall make every effort to resolve amicably by direct informal negotiation any disagreement or dispute arising between them under or in connection with the Contract.

If, after twenty-one (21) days, the parties have failed to resolve their dispute or difference by such mutual consultation, then either the Purchaser or the Supplier may give notice to the other party of its intention to commence arbitration, as hereinafter provided, as to the matter in dispute, and no arbitration in respect of this matter may be commenced unless such notice is given. Any dispute or difference in respect of which a notice of intention to commence arbitration has been given in accordance with this Clause shall be finally settled by arbitration. Arbitration may be commenced prior to or after delivery of the Goods under the Contract.

The dispute settlement mechanism/arbitration proceedings shall be concluded as under:

- a.) In case of Dispute or difference arising between NML and a domestic supplier relating to any matter arising out of or connected with this agreement, such disputes or difference shall be settled in accordance with the Indian Arbitration & Conciliation Act, 1996, the rules there under and any statutory modifications or re-enactments thereof shall apply to the arbitration proceedings, The dispute shall be referred to Delhi International Arbitration Centre (DIAC), Delhi High Court, New Delhi as per section 12(5) of Arbitration and Conciliation (amend.) Act, 2015 whose award shall be final, conclusive and binding on all parties to this order.

b.) The venue of the arbitration shall be New Delhi.
Notwithstanding, any reference to arbitration herein,

c.) The parties shall continue to perform their respective obligations under the Contract unless they otherwise agree; and the Purchaser shall pay the Supplier any monies due to the Supplier.

7.13 Governing Language

The contract shall be written in English language which shall govern its interpretation. All correspondence and other documents pertaining to the Contract, which are exchanged by the parties, shall be written in the English language only.

7.14 Applicable Law

The Contract shall be interpreted in accordance with the laws of the Union of India and all disputes shall be subject to place of jurisdiction viz., Jamshedpur, Jharkhand, India.

7.15 Liquidated Damages

The penalty shall be 0.5% per week or part of a week towards late delivery and towards delay in installation and commissioning. The maximum amount of penalty shall be 10%.

2. PAYMENT TERMS & CONDITIONS

Payment will be 70% of the order value issued to the successful bidder upon delivery at site and duly certified by the user personnel after inspection by the user personnel in the presence of the vendor/supplier. Remaining 30% after successful installation & commissioning by the party. For the release of the remaining 30% of the order value, the successful bidder will be required to furnish a bank guarantee for an amount of 3 % of the total cost, valid for a period of one year from the date of successful installation & commissioning.

3. SUPPLIERS SCOPE

The supplier has to execute the job on turnkey basis. The scopes include the supply, installation and commissioning with reliability of total system based on conceptual design and know-how provided by NML. Supply of all the materials including probe materials (excluding sensor core material) is the scope of the supplier. The supplier should stand responsible for proper functioning of the system supplied.

4. ITEMS UNDER NML'S SCOPE OF SUPPLY:

Conceptual design of the system.

5. MODUS OPERANDI

- 5.1 The party may visit NML for technical discussions, if needed.
- 5.2 The delivery and installation will be at our works in Visakhapatnam at the cost of the supplier.
- 5.3 The system is to be guaranteed for one year after successful commissioning and handing over to NML.
- 5.4 CSIR-NML will have the right to accept any part of the quotation or rejecting totally without assigning any reason.

Eligibility Criteria

Bidders should have 5 years of experience in customized furnace fabrication and should have executed at least one single order of value not less than 10 (Ten) Lakhs.

Detailed Technical Specifications

Detailed specifications of various machinery / instruments involved supported by technical brochures/datasheets in English. The Bidder shall provide the complete technical information (without any IP related material) with specific OEM name, Model Number etc.

Installation and Commissioning

1. **The supply time is 4-5 weeks only after the issues of a firm work order.**
2. Additional Pre-Installation requirements at site should be communicated after receiving Purchase order / MoU.
3. Trials for proofing the fabricated furnace will be carried out.

Documents to be furnished in the Bid

- (i.) Bidder Information Form. (Annexure- 1)
- (ii.) Performance Statement Form. (Annexure- 2)
- (iii.) **Self certified** letter about holiday listing /blacklisting in bidder letterhead.

In addition to above forms following details should be provided by the bidder-

- (i) **Copies** of Purchase orders/contracts of similar work done in the last 5 years of value of a single order not less than Rs. 10 Lakhs and the performance certificate from the respective clients.
- (ii) The Bidder shall indicate the **timelines** necessary for supply/installation/ commissioning of the items under Scope of Work.

Other Terms and conditions:

- (i) CSIR-NML at its discretion may extend the due date and the decision of CSIR-NML in this respect would be final and binding on the respondents. In the event of changes in the time schedule, CSIR-NML shall notify the same only through its CSIR-NML website

www.nmlindia.org. Interested Bidders are advised to check the above website regularly for corrigendum/addendum, if any, which will be published only in the website.

- (ii) No oral modification or interpretation of any provisions shall be valid. Written communication shall be issued by CSIR-NML when changes, clarifications or amendments to the EOI document are deemed necessary by CSIR-NML at its sole discretion.
- (iii) Submission should be in English language and response should be free from correction, over writing, erasures etc. Duly authorized representative of the Applicant shall sign on each page of the documents. Documents should be prepared in such a way so as to provide a straight forward, concise description of Applicant and capabilities to satisfy the requirements of this tender.
- (iv) If at any time during the examination, evaluation and comparison of responses received for this tender, CSIR- NML at its discretion can ask the Bidder for the clarification of its offer. The request for clarification and the response shall be in writing.
- (v) Canvassing by respondents in any form, including unsolicited letters on EOI submitted or post corrections shall render their EOI response liable for summarily rejection.
- (vi) No respondent shall be entitled for the cost or charges incurred in preparation and submission response.
- (vii) Conditional offers will be summarily rejected. Offer which is found to be incomplete in content and / or attachments and/or authentication etc. is liable to be rejected.
- (viii) No Agent/Agents or third party/parties are engaged by CSIR-NML in this process.
- (ix) CSIR-NML is not responsible for any firm/agency expression or representing to express himself/herself/themselves to be the agent or third party representing CSIR- NML in this process.
- (x) It is advised to deal directly with CSIR-NML representative who is the signatory to this document.
- (xi) Disregard of any instruction may result in offer being ignored.
- (xii) Offers that are incomplete in any respect or those that are not consistent with the requirements as specified in this document may be considered non-responsive and may be liable for rejection and no further correspondence will be entertained with such Bidders.
- (xiii)** All cost and expenses associated with submission of EOI shall be borne by the Bidder while submitting the EOI. CSIR-NML shall have no liability, in any manner in this regard, or if it decides to terminate the process of short listing for any reason whatsoever.

Head, RPBD, CSIR-NML

Bidder Information Form*(Refer para 5.1.2 (ix)(a) of the CSIR Manual)*

- (a) *The Bidder shall fill in this Form in accordance with the instructions indicated below. No alterations to its format shall be permitted and no substitutions shall be accepted. This should be done of the letter head of the firm]*

Date: *[insert date (as day, month and year) of Bid Submission]*

Tender No.: *[insert number from Invitation for bids]*

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01.	Bidder's Legal Name <i>[insert Bidder's legal name]</i>
02.	In case of JV, legal name of each party: <i>[insert legal name of each party in JV]</i>
03.	Bidder's actual or intended Country of Registration: <i>[insert actual or intended Country of Registration]</i>
04.	Bidder's Year of Registration: <i>[insert Bidder's year of registration]</i>
05.	Bidder's Legal Address in Country of Registration: <i>[insert Bidder's legal address in country of registration]</i>
06.	Bidder's Authorized Representative Information Name: <i>[insert Authorized Representative's name]</i> Address: <i>[insert Authorized Representative's Address]</i> Telephone/Fax numbers: <i>[insert Authorized Representative's telephone/fax numbers]</i> Email Address: <i>[insert Authorized Representative's email address]</i>
07.	Attached are copies of original documents of: <i>[check the box(es) of the attached original documents]</i> Articles of Incorporation or Registration of firm named in 1, above.

Signature of Bidder _____

Name _____

Business Address _____

PERFORMANCE STATEMENT FORM

(Refer para 5.1.2 (ix)(e) of the CSIR Manual)

(For a period of last 3 years)

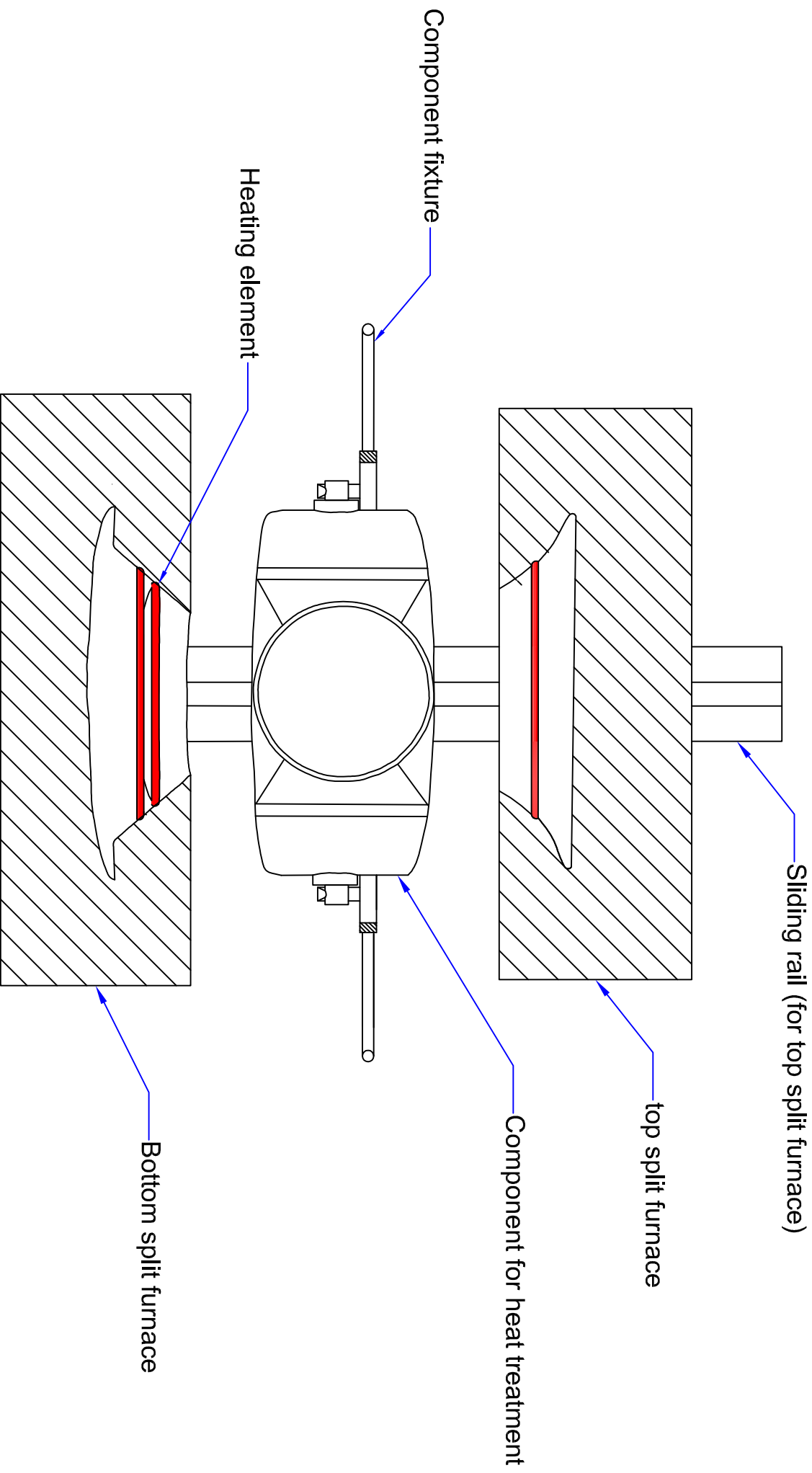
Name of the Firm.....

Order Placed by (full address of Purchaser)	Order No. and date	Description and quantity of ordered equipment	Value of order	Date of completion of deliver as per Contract	Date of actual completion of delivery	Remarks indicating reasons for late delivery, if any	Has the equipment been installed satisfactorily? (Attach a certificate from the purchaser/Consignee)	Contact person along with Telephone No., FAX No. and e-mail address

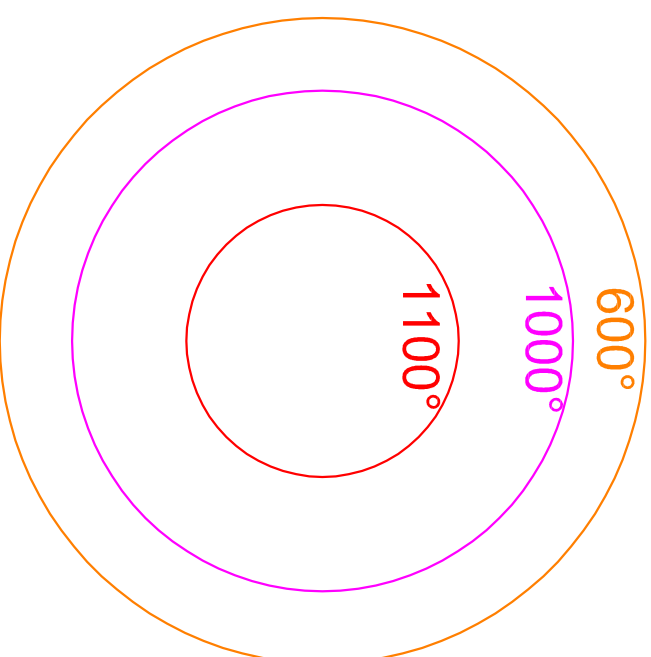
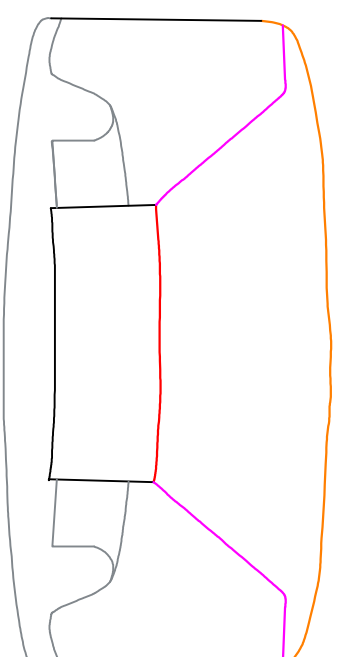
Signature and Seal of the manufacturer/Bidder

Place :

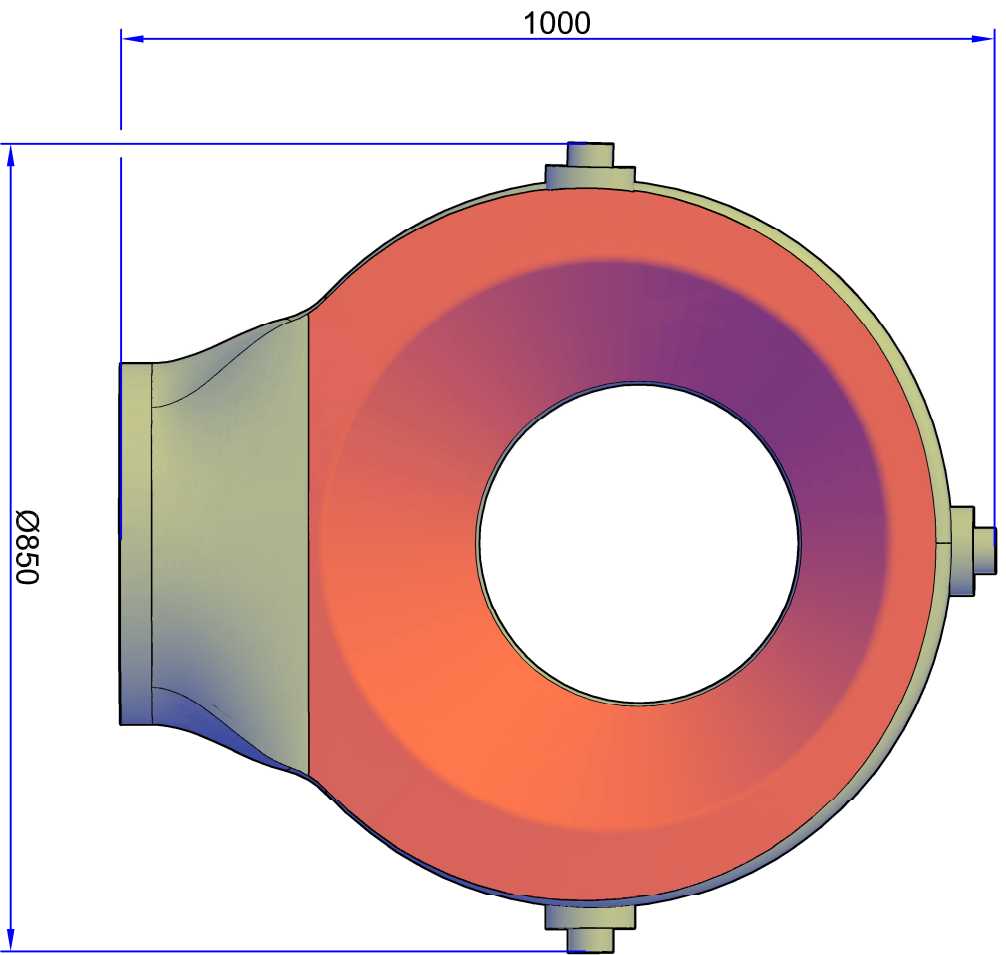
Date :



Sectional Front view of Proposed heating system

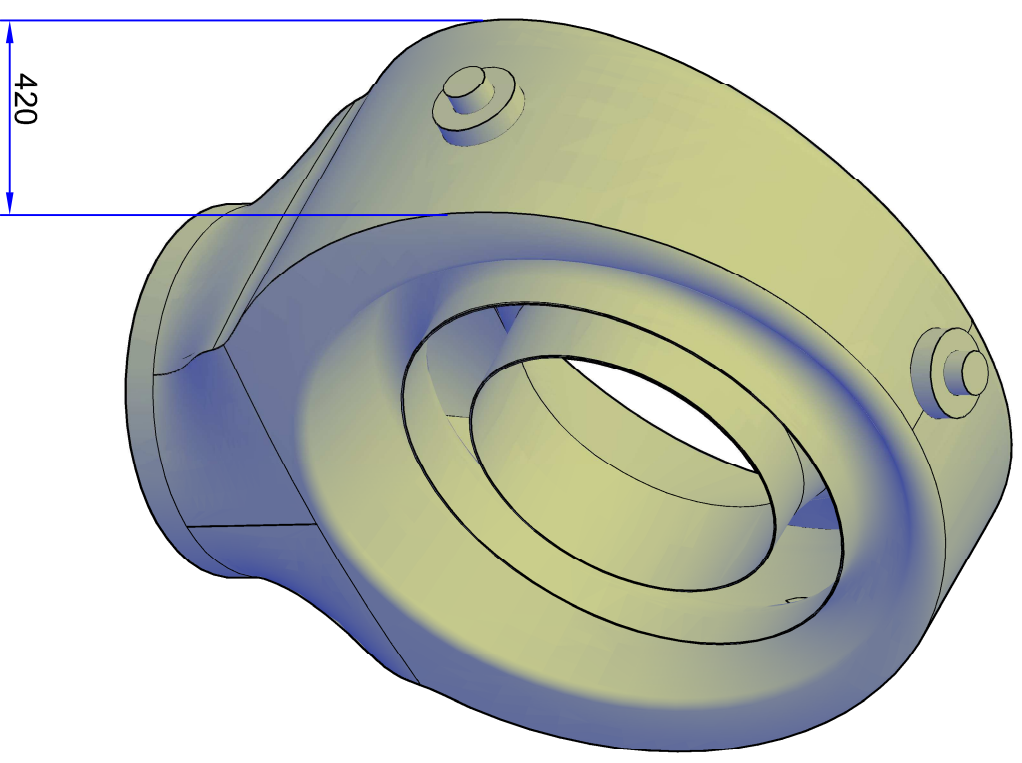


Multi temperature thermal profile zone



Component for heat treatment

Date - 06-10-2021



All dimensions are in mm

Dwg no. - NML/ENG/GCF/SK-03