



वैज्ञानिक तथा औद्योगिक अनुसंधान परिषद्  
Council of Scientific & Industrial Research  
राष्ट्रीय वांतरिक्ष प्रयोगशालाएं  
National Aerospace Laboratories

**INVITATION FOR TENDERS**

**Tender No. NAL/PUR/ACD/276/22-Y**

**Dated: 24/05/2023**

CSIR - National Aerospace Laboratories (NAL), Bengaluru, Republic of India, is one of the premier research laboratories under aegis of Council of Scientific and Industrial Research (CSIR), an autonomous body under the Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organisation. It is internationally known for its excellence in Scientific Research in Aerospace Engineering.

The Director, CSIR-NAL invites online quotation for procurement of the following item(s) for day to day research work.

Sl. No.	Description of Item(s)	Unit	Quantity
1	Fabrication of Mould HT Inter Spar Box. (Please refer annexure for detailed specification and list of items)	Set	01

<b>Single / Double Bid</b>	Two	<b>Tender Type</b>	Open
<b>Bid Security (EMD) (in INR)</b>	Bid Security Declaration should be enclosed with quotation	<b>Performance Security</b>	<b>3% of the Purchase Order value</b>

1. Tender document(s) may be downloaded from the Central Public Procurement Portal i.e., <https://www.etenders.gov.in>. Aspiring Bidders' who have not registered in the portal can do the same at free of cost before participating in our tendering process. Bidders are advised to go through instructions provided at 'Instructions for Online Bid Submission', in the portal.
2. Tenderer's can access tender document(s) on the website (for searching in the NIC site <https://www.etenders.gov.in>, kindly go to "Tender Search", option, select tender type and select 'Council of Scientific and Industrial Research', in organisation tab and select NAL-Bengaluru-CSIR in department type. Thereafter, Click on "Search", button to view all CSIR-NAL, Bengaluru tenders). Select the appropriate tender and fill them with all relevant information and submit the completed tender document online in the website as per the schedule given in the next page.
3. The Interested bidders should submit/upload Non-Disclosure Agreement (NDA) on E-Tender portal <https://etenders.gov.in> as scheduled below and the bidders who have submitted NDA only will be able to submit / participate in the tender. The other bidders will be rejected, if submitted. NDA to be printed/executed on company's letter-head and signed by the bidders on both sides of each page.



## CSIR-National Aerospace Laboratories, Bengaluru-560 017, INDIA

4. Successful Bidder should submit NDA duly registered as per Stamp Act of India before placement of Purchase Order.

NDA submission date	07-Jun-2023 10.00 Hrs	Bid submission end date	15-Jun-2023 10.00 Hrs
NDA Approval date	07-Jun-2023 18.00 Hrs	Bid opening date	16-Jun-2023 11.00 Hrs

5. a. Global Tender Enquiry: Either the Indian Agent on behalf of the Foreign Principal or the Foreign Principal can bid directly in a tender but **not** both. However, the offer of the Indian Agent should also accompany the authorisation letter from their principal. To maintain sanctity of tendering system, one Indian Agent **cannot** represent **two** different Foreign Principals in **one** tender
- b. Open Tender Enquiry: Only Local supplier's with prescribed local content as detailed in Department for Promotion of Industry and Internal Trade (DPIIT) Order No. P-45021/2/2017-PP (BE-II), dated 16<sup>th</sup> Sep, 2020, and subsequent orders issued by the Ministry of Finance, Government of India from time to time, are eligible for bidding. Bidders' must enclose the certificate declaring their local content of supplies as per our standard form.

**Note:** Kindly, refer to the first page of Notice Inviting Tender for tender type i.e. Open Tender Enquiry / Global Tender Enquiry and submit your bid accordingly.

6. Unsolicited / Conditional / Unsigned Quotations/Quotations received after the due date and time shall be summarily rejected. The Bidder should comply with the terms and conditions of the tender, failing which, their offer will be liable for rejection.
7. The bids' failing to comply with the following clauses will be summarily rejected.
- a. The Bidders' proposing to supply finished products directly/indirectly from vendors' of countries sharing the land border with India should submit a copy of registration done with DPIIT.
- b. If the products supplied are not from vendors of countries sharing land border with India, the Bidders' have to enclose a declaration to that effect.
8. As per Government of India procurement policies,
- a. The purchaser intends to give purchase preference to local supplies (preference to Make in India) in case the cost of procurement is up to Rs. 50 (fifty) lakhs.
- b. The procuring entity intends to give purchase preference to products/goods manufactured by Micro, Small and Medium Enterprises.




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9. Bidders' are requested to refer to the instructions regarding Procurement Policies for "Make in India", issued by Ministry of Commerce and Industry, Department of Industrial Policy and Promotion dated. 28-May-2018, and 4-Jun-2020 and guidelines as and when issued.
10. Kindly, note CSIR-NAL **GST No. 29AAATC2716R1ZB**. And, the bidders' are requested to furnish their GST No. in their invoice failing which we will **not** be able to make timely payment.
11. Printed conditions, if any, submitted along with your quotation will not be binding on us.
12. The prospective bidders' are requested to refer to the Standard Terms and Conditions available on NAL Internet ([www.nal.res.in](http://www.nal.res.in)) under the icon Tender-Purchase before formulating and submitting their bids'.
13. The Director, CSIR- National Aerospace Laboratories, Bengaluru, reserves the right to accept any or all the tenders either in part or in full or to split the order without assigning any reason(s) thereof.

Thanking you,

Yours faithfully

  
**Stores & Purchase Officer**  
**For and on behalf of CSIR-NAL**



## Specifications and Allied Technical Details for Horizontal Stabilizer Tool

1. **End Use:** Fabrication of horizontal stabilizer components under autoclave moulding conditions of 180°C to 200°C with external pressure of 7bar under full vacuum.
2. **Detailed Specifications:**

Fabrication & supply of steel tool assembly as per the drawing and CAD Model listed below

Sl No.	Description	Tool DWG No.	Qty
1.	MOULD – HT INTER SPAR BOX	25-A-T-55-10-150-000-000	01

*Note: Refer detailed drawing for standard parts, type of finish and tolerances.*

- i. Drawing and 3D model in .STP/IGS format of mold will be provided by CSIR-NAL for quotation purpose after Submitting NDA in the prescribed format.
- ii. Mould Material and build quality requirements has to meet the requirements mentioned against each item as per the drawing.
- iii. Material for faceplate and Ribs: SA 516 Gr.70. Material for all other items as per drawing.
- iv. Use single / two piece faceplate at the mould contour region. Before machining of the mould contour, form the faceplate to the near net profile to ensure final thickness consistency in the faceplate.
- v. Mold support structure consisting of longitudinal ribs, transverse ribs, support brackets, connecting plates etc. are to be welded locally with faceplate as per the drawing. Entire welded structure should be stress relieved prior to machining operations.
- vi. Typical Faceplate thickness is 6<sup>-0.0/+2.0</sup> mm.
- vii. All flange plates should be welded together with the formed faceplate for the dimensional stability of the mold without any vacuum leaks. For leak proof joints between the faceplate and flange plate typical grooves/chamfers shall be made and filled properly as shown in Fig.1.

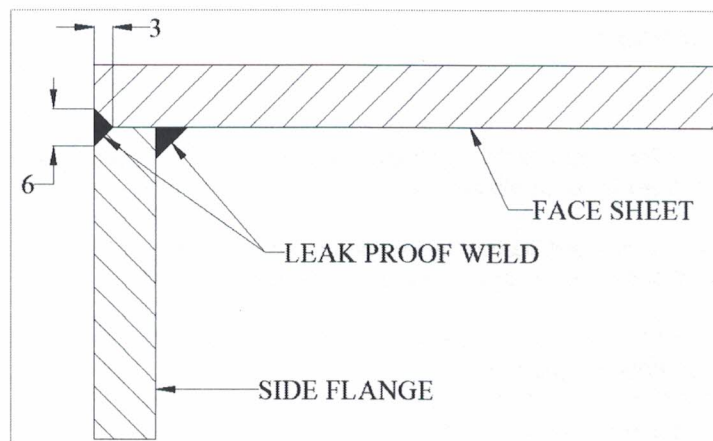


Fig.1: Typical leak proof welds between Faceplate and Flange plate

- viii. Material for mold backup structure: Steel hollow tubes confirming IS 4923 standards.

- ix. Tooling hole coordinates as per drawing have to be engraved legibly and labelled at the non-working area of mould at the respective locations. Tooling holes should be used as references for inspection of moulds w.r.t CAD model.
- x. Tolerance for distance between Tooling Holes: +/- 0.10 mm
- xi. Contour to be machined to 2 triangle ( $\nabla\nabla$ ) surface finish standard.
- xii. Mould's Contour tolerance with respect to the Tooling holes: +/-0.70 mm.
- xiii. Mould edge boundary has to be checked at every 50mm and report to be submitted. The tolerance on the mold edge boundary is  $\pm 1.0$  mm
- xiv. Part boundary/Station marking/ Cutout markings has to be scribed / V-grooved about 0.5mm depth and should be within  $\pm 1.0$  mm w.r.t tooling holes / CAD model.
- xv. Few modifications in the mold backup structure frame is allowed without affecting the mould functionality in order to facilitate accessibility for welding (if any) in concurrence with NAL and modifications (if any) to be approved by NAL without any additional cost escalation.

### 3. List of Deliverables (BoQ):

Sr. No.	Item Description	Tool DWG No.	Unit	Quantity
<b>I Horizontal Stabilizer Tool</b>				
1	MOULD – HT INTER SPAR BOX	25-A-T-55-10-150-000-000	Nos.	One
<b>II Documents/CAD data/Reports</b>				
1	Dimension and CMM/ Laser Tracker Report of mold contour as per the drawing			
2	Raw Material CoC & Heat treatment /Stress relieve Report			
3	Surface Finish/Treatment Report			
4	NDT reports of welding ensuring defect free face sheet and welded joints			
5	Certificate to ensure Trolley's Wheel capacity: 900 Kgs (Minimum)			

### 4. Scope of Supply and incidental works:

#### Scope of Supply includes the following:

- (i) Supply of the equipment / system along with the accessories as per detailed specifications mentioned in section (2) above.
- (ii) Acceptance as per section 5.4
- (iii) On site comprehensive Warranty as per section 5.5.
- (iv) Delivery Schedule as per section.5.6.

### 5. Inspection & Tests

#### 5.1 General

1. The Supplier should at its own expense and at no cost to the Purchaser carry out all such tests and/or inspections of the Goods and Related Services as are specified here.
2. The inspections and tests may be conducted on the premises of the Supplier or its subcontractor(s), at the point of delivery and/or at the Goods final destination.
3. Whenever the Supplier is ready to carry out any such test and inspection, it should give a reasonable advance notice, including the place and time, to the Purchaser. The Supplier should obtain from any relevant third party or manufacturer any necessary permission or consent to enable the Purchaser or its designated representative to attend the test and/or inspection.
4. Should any inspected or tested Goods fail to conform to the specifications, the Purchaser may reject the goods and the Supplier should either replace the rejected Goods or make alterations necessary to meet specification requirements free of cost to the Purchaser.



5. The Purchaser's right to inspect, test and, where necessary, reject the Goods after the Goods' arrival at final destination should be in no way be limited or waived by reason of the Goods having previously been inspected, tested and passed by the Purchaser or its representative prior to the Goods shipment.
6. The Supplier should provide the Purchaser with a report of the results of any such test and/or inspection.
7. With a view to ensure that claims on insurance companies, if any, are lodged in time, the bidders and /or the Indian agent, if any, should be responsible for follow up with their principals for ascertaining the dispatch details and informing the same to the purchaser and he should also liaise with the Purchaser to ascertain the arrival of the consignment after customs clearance so that immediately thereafter in his presence the consignment could be opened and the insurance claim be lodged, if required, without any loss of time. Any delay on the part of the bidder/ Indian Agent would be viewed seriously and he should be directly responsible for any loss sustained by the purchaser on the event of the delay.
8. Before the goods and equipment are taken over by the Purchaser, the Supplier should supply operation and maintenance Manuals together with Drawings of the goods and equipment built. These should be in such details as will enable the Purchase to operate, maintain, adjust and repair all parts of the works as stated in the specifications.
9. The Manuals and Drawings should be in the ruling language (English) and in such form and numbers as stated in the Contract.
10. Unless and otherwise agreed, the goods and equipment should not be considered to be completed for the purposes of taking over until such Manuals and Drawing have been supplied to the Purchaser.
11. On successful completion of acceptability test, receipt of deliverables, etc. and after the Purchaser is satisfied with the working of the equipment, the acceptance certificate signed by the Supplier and the representative of the Purchaser will be issued. The date on which such certificate is signed should be deemed to be the date of successful commissioning of the equipment.

## 5.2 Manufacturer's Inspection Certificate`

After the goods are manufactured and assembled, inspection and testing of the goods should be carried out at the supplier's plant by the supplier, prior to shipment to check whether the goods are in conformity with the technical specifications. Manufacturer's test certificate with data sheet should be issued to this effect and submitted along with the delivery documents. The purchaser reserves the options to be present at the supplier's premises during such inspection and testing.

## 5.3 Pre Dispatch Inspection (delete if not applicable) or elaborate

1)	Location	At Vendor location
2)	Number of persons	03
3)	Period of Pre Dispatch Inspection	02 day
4)	Nature of Pre Dispatch Inspection	Mold Contour and Dimensional Inspection.

### Note:

- i. *Travel expenses of CSIR-NAL personnel for pre-dispatch will be borne by CSIR-NAL.*
- ii. *Vendor to share complete inspection reports prior to pre-dispatch inspection including raw material CoC, NDT ensuring no cracks and stress relieving / heat treatment*

## 5.4 Installation, Commissioning and Acceptance Test

The acceptance test will be conducted by the Purchaser, their consultant or other such person nominated by the Purchaser at its option after the equipment is installed at Purchaser's site in the presence of supplier's representatives. The acceptance will involve trouble free operation. There should not be any additional charges for carrying out acceptance test. No malfunction, partial or complete failure of any part of the equipment is expected to occur. The Supplier should maintain necessary log in respect of the result of the

test to establish to the entire satisfaction of the Purchaser, the successful completion of the test specified.

On the event of the ordered item failing to pass the acceptance test, a period not exceeding two weeks will be given to rectify the defects and clear the acceptance test, failing which, the Purchaser reserve the right to get the equipment replaced by the Supplier at no extra cost to the Purchaser.

Successful conduct and conclusion of the acceptance test for the installed goods and equipment should also be the responsibility and at the cost of the Supplier.

The acceptance tests at the final destination (NAL) include the following:

a)	Mold NMG/surface Contour and Dimensional measurements, checks and Inspection as per the supplied drawings. Deviations if any, to be corrected by vendor without any additional costs to NAL.
b)	Vacuum Integrity and leak test: Mold will be subjected for heating cycle (176°C for 2 hours under full vacuum and 7bar pressure) to check for vacuum leaks. Vacuum leaks if any, vendor need to correct the mold without any additional costs to NAL.
c)	Functionality checks on transporting wheels for mold to ensure trouble free movement of the mold

5.5 Incidental Services

- On site Comprehensive Warranty: 2 Years from the date of acceptance.

5.6 Delivery Schedule (including supply, installation, commissioning, training & acceptance)

Delivery of the Item		Installation & Commissioning		Training At CSIR_NAL, if any	Acceptance of the item
Days/ Weeks/Months	Location	Days/ Weeks/Months from the date of receipt of equipment	Location	Days/ Weeks/Months from the date of Installation & Commissioning	Days/ Weeks/Months from the date of Installation, Commissioning & Training
16 Weeks	CSIR-NAL, Bengaluru	Not Applicable		Not Applicable	10 Days

*Completed*  
24/05/2023