

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



CSIR - NAL Estd. 1959
ISO 9001 : 2015
Certified Organization

INVITATION FOR BIDS/NIT

Tender No. NAL/PUR/ACD/513/19-Y

Dated: 10-Feb-2020

CSIR- National Aerospace Laboratories (NAL), Bengaluru, India is one of the premier laboratories under Council of Scientific and Industrial Research (CSIR), an autonomous body under Department of Scientific and Industrial Research, Government of India, New Delhi. CSIR-NAL is a Science and Knowledge based Research, Development and Consulting Organization. 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 Items	Unit	Qty
1	IS Box tool set for Composite Structure (Refer Annexure- 1 for detailed Specifications)	Set	1
Single / Double Bid		Single	
Bid Security (EMD) (in INR)		Rs. 50000/-	
Performance Security		10% of the Purchase Order value	

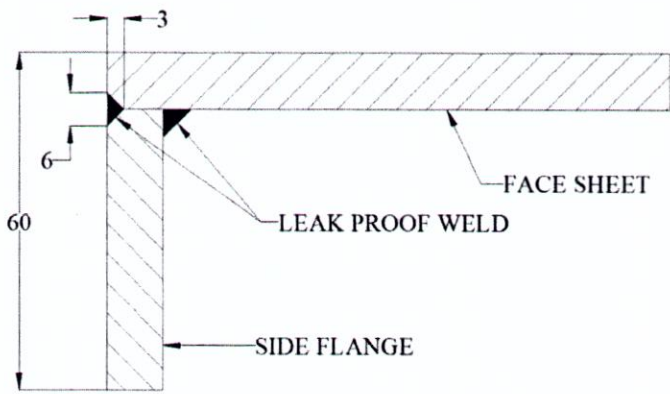
01. Tender Documents may be downloaded from Central Public Procurement Portal <https://www.etenders.gov.in>. Aspiring Bidders who have not enrolled/ registered in e- procurement should enroll/ register before participating through the website <https://www.etenders.gov.in>. The portal enrolment is free of cost. Bidders are advised to go through instructions provided at 'Instructions for online Bid Submission'.
02. Tenderers can access tender documents 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 organization 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 on the website <https://www.etenders.gov.in> as per the schedule given in the next page.
03. 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 authorization letter from their principal. To maintain sanctity of tendering system, one Indian Agent cannot represent two different Foreign principals in one tender.
04. Unsolicited / conditional / unsigned tenders (Quotations) **shall not** be considered. Quotations received after the due date and time **shall be summarily rejected**.
05. The Bidder shall comply the terms and conditions of the tender, failing which, the offer shall be liable for rejection.
06. 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 reasons there for.

Raman Kumar
Section Officer (S&P)

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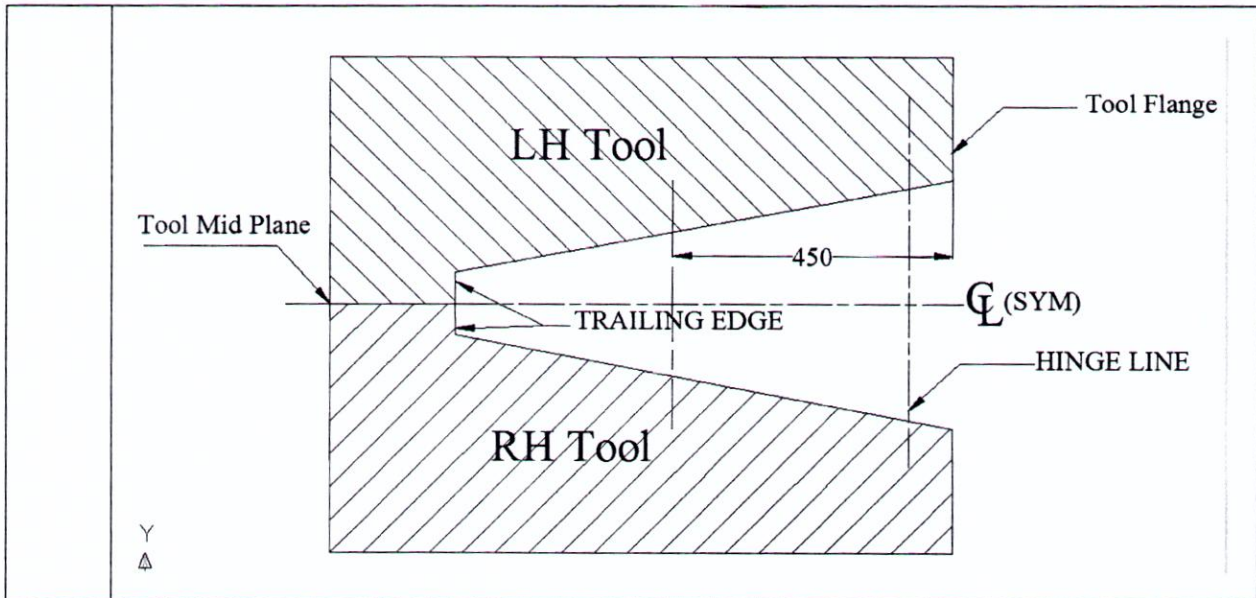
SCHEDULE CUM CRITICAL DATE SHEET

1	Name of Organization	CSIR-National Aerospace Laboratories, Bengaluru	
2	Tender Reference No	NAL/PUR/ACD/513/19-Y dated: 10.02.2020	
3	Tender Type (Open/Limited/EOI/Auction/Single)	Open	
4	Type/Form of Contract (Work / Supply / Auction / Service / Buy / Empanelment / Sell)	Supply	
5	No of Covers (One/Two/Three/Four)	One	
6	Tender Category (Services/Good/Works)	Goods	
7	Allow Resubmission (Only in online mode within scheduled period)	Yes	
8	Allow Withdrawal (Only in online mode within scheduled period)	Yes	
9	Allow Offline Submission	No	
10	Work Item Title	IS Tool set for composite structure	
11	Work Description	IS Tool set for composite structure	
12	Delivery Schedule	100 days from the date of purchase order	
13	Product Category (Civil Works / Electrical Works / Fleet Management / Computer Systems)	R & D Equipment	
14	Is Multi Currency Allowed	Yes	
15	a) Tender Publishing Date -	12-Feb-2020	1855 Hrs
	b) Document Download Start Date-	12-Feb-2020	1855 Hrs
	c) Bid Submission Start Date-	12-Feb-2020	1855 Hrs
	d) Bid Submission End Date-	27-Feb-2020	1000 Hrs
	e) Bid Opening Date-	28-Feb-2020	1100 Hrs
16	Bid Validity Days	90 days	
17	Address for communication	Stores and Purchase Officer CSIR-National Aerospace Laboratories, HAL Airport Road, Kodihalli, Bengaluru - 560017	
18	Inviting Officer	Director, CSIR-NAL	
19	Contact No	25086040, 25086041	
20	E-mail Address	purchasek@nal.res.in	
21	Detailed specification of item	Refer Invitation for bids / NIT	
22	Tender Terms & Conditions & Instruction for online bid submission	The prospective bidders are requested to refer to the Standard Tender Document available on NAL Internet (www.nal.res.in) under the icon Tender-Purchase before formulating and submitting their bids	

Annexure - 1	
METALLIC IS BOX TOOL SPECIFICATIONS	
1.0	Technical requirement objective
1.1	To manufacture & supply of Boiler steel tool as per the 3D CAD model (Annexure 2) and 2D drawings (Annexure 3).
2.0	Scope of work
2.1	<p>The scope of work is to manufacture and supply of Boiler steel tools & allied tooling aids viz.</p> <ol style="list-style-type: none"> 1. Boiler steel tools : NAL provides 3D CAD model & 2D drawings 2. Transporting trolleys: Vendor to design, Fabricate and demonstrate. All industrial safety norms to be followed while designing the trolleys. 3. Inverting mechanism: Vendor to design, Fabricate and demonstrate. All industrial safety norms to be followed while designing the equipment.
3.0	Tool specification
3.1	3D CAD model for the tool will be supplied by NAL-ACD in CATIA V5 and 2D drawings in PDF format.
3.2	<p>Single face sheet to be formed by any hot forming process to near net shape of the contour and all side flanges can be joint through welding to meet dimensional requirement and ensure the vacuum integrity.</p> <p>3×3 mm groove to be made after rough machining. Fill the groove by welding, and then perform final machining of flanges.</p> <p>Tool boundary to be machined after welding of side flanges up to 60 mm depth from tool surface to facilitate vacuum bag sealing purpose.</p> 



3.3	Back up longitudinal /transverse ribs to be welded locally with base skin backside as per 2D drawings of the mould.
3.4	Geometrical surface (Contour) tolerance should be within +/-0.30 mm as per CAD model from the datum (tooling) holes.
3.5	The specification of steel SA 516; Grade 70 or equivalent.
3.6	The tooling hole coordinates as per drawing to be engraved for inspection purpose.
3.7	Chromium coating surface treatment is required on the machined surfaces. The thickness of the coating may be 20 to 30 Microns.
3.8	All the major details are to be identified by metal tag riveted on the tool. Details will be provided by NAL-ACD.
4.0	Quality / inspection requirements
4.1	The tools should have vacuum integrity and should be leak proof during autoclave curing at 250°C temperature, 10 bar external pressure and 0.85 bar vacuum. This qualification test will be done at NAL-ACD, if vendor without any additional cost should correct any leak found. Preliminary vacuum leak test will be done at vendors place at room temperature and without pressure, before shipping the tools to NAL-ACD. NAL-ACD team will carry out this test.
4.2	The following information to be given in the report for all the measured points, Nominal coordinates, Tolerance zone, Actual coordinates, Deviation, Out of tolerance.
4.3	<p>a) The contour inspection to be carried out generally by forming a rectangular grid with a general spacing between the measured points: 100mm in the tool length direction and 100mm in the tool width direction. Closer readings to be taken on need basis / Laser scanning report for the tool surface.</p> <p>b) Tool boundary to be checked with every 50mm and report to be submitted. The tolerance on the tool boundary is ± 0.5 mm</p> <p>c) Tool flange to trailing edge depth to be measured at every 50mm along the length of the mould and reported or contour measurement to be made on the flange at two sections.</p> <p>d) Contour inspection to be carryout in assembled condition up to 450mm from tool flange or maximum possible chord length.</p>



4.4 Vendor's authorized quality assurance representative to authenticate all inspection reports.

4.5 NAL-ACD keeps its right to perform acceptance inspection at the manufacturer's facilities if required. NAL-ACD tooling inspection may carry out pre-dispatch inspection at manufacturer's facilities if required.

5.0 Deliverables – Documents & Tools

a) Documents & Inspection Reports

5.1 The following details/reports are to be delivered by the supplier.

- a) CMM/ Laser Tracker Report
- b) Vacuum integrity report
- c) Raw Material CoC & Heat treatment certificates
- d) Surface treatment certificate
- e) Magnetic flux inspection report
- f) Any updated tool 3D CAD model and drawings made by vendor side.

5.2 b) Tools / Moulds

SI.No.	Description	Quantity in Numbers.	Remarks
1.	Metal Tool Bonded IS Box Assly 01F 3F 2200T 000 00A	One Set (LH +RH)	
2.	Transporting Trolley for LH Mould	One	
3.	Transporting Trolley for RH Mould	One	
4.	Inverting Mechanism	One	

6.0	Packing
6.1	The tools are to be packed in marked boxes, which are being suitable for air and sea transportation. Box should be designed with fork lift access profiles in the bottom.
7.0	Warranty
7.1	The supplier shall provide minimum 12 months warranty for the tools from the date of acceptance by NAL-ACD inspection. Warranty for : a) Surface coating b) Vacuum leak due weld porosity
8.	Terms & Conditions : a) The entire CAD data supplied for these tools would become NAL-ACD's property and suppliers are not allowed to use elsewhere under any circumstances. b) The details of the material to be provided to NAL-ACD, if vendor prefer to use equivalent material. Any equivalent material to be approved by NAL-ACD tooling design team. c) 5% to 10% of tool design modifications are to be allowed except critical areas to facilitate manufacturing process/ attachment of trolleys/ use inverting mechanism etc. in concurrence with NAL-ACD and design to be approved by NAL-ACD without any additional cost escalation. d) All detachable/loose detail items are to be properly identified and chained to the tool.