

**Bhabha Atomic Research Centre
Applied Physics Division**

Tender No. BARC/APD/EHPPL/MF/PK/2022/1

Due on: 15th Feb 2022 at 1600 hrs

Sub: Invitation of Quotations for Fabrication, installation, testing and commissioning of mixer vessel along with agitator as specified in annexure-I, II & III.

Dear Sir,

- 1) Quotations are invited for the **Fabrication, installation, testing and commissioning of mixer vessel along with agitator as specified in annexure-I, II & III.**
- 2) Bidder shall quote for the same.
- 3) Taxes shall be quoted separately.
- 4) Quotation must be in the printed letter head/quotation format, which should consist of PAN number of the firm, registration number, GST no. etc. Quotation shall be in **two-Parts**, one is technical and other is commercial bid. These two quotations shall be in separate envelope Supper scribed "**technical bid**" and "**Commercial Bid**".
- 5) The quotations must strictly reach through **Indian Post only**,
Head, Applied Physics Division
Purnima Laboratory
Bhabha Atomic Research Centre,
Trombay, Mumbai 400085.
Attn: **Shri. Praveen Kumar**
On or before **15/02/2022 at 1600 hrs.** and must be sent in a sealed envelope super scribed "MINOR FABRICATION" with the above reference number and due date given above.
- 6) The fabrication work shall be subject to inspection by our engineer.
- 7) The bidder shall specify the **work completion period** (not exceeding **6 months**), in case of order.
- 8) **Head, Applied Physics Division, B.A.R.C.**, reserves the right to accept/reject any or all quotations without assigning any reason.
- 9) **Payment:** Payment will be made by ECS only after satisfactory completion of work on production of bill, delivery challan and advance stamped receipt. It may be noted that IT @ 2% or as applicable shall be deducted from your bills.
- 10) **Validity:** The offer shall be kept open for acceptance for a period of **90 days** from the date of opening of quotation
- 11) **Delivery:** Supply of finished job to the user site shall be in the scope of Supplier. (Facility is located at EHPPL, BARC, Chinchvali village, Malang Road, Kalyan).

Enclosure: Annexure-I, II & III.


(Praveen Kumar)
Scientific Assistant - D

Specification for design, fabrication, testing, supply, installation and commissioning of mixer vessel and agitator.

This specification shall be governing factor for the design, fabrication, testing, supply, installation and commissioning of mixer vessel and agitator. In case of any quires, supplier can contact on email: pkxen@barc.gov.in, phone no.:022-69291808.

Scope of Supply: Design, fabrication, testing, supply, installation, commissioning of mixer vessel, agitator.

The complete works involved under the scope of this contract shall be as follow:

- a) Preparation of detail drawing of mixer vessel and agitator with user consent.
- b) Submission of design documents.
- c) Submission of Quality assurance plan for complete assembly.
- d) Procurement, manufacturing and testing of the components at supplier site.
- e) Packaging and delivery at purchaser's site.
- f) Disassembling the existing vessel (bottom part) removing the bottom assembly, emergency drain valves all attachments and fittings connected to the bottom vessel. Reassembling the new conical vessel and all components and valves including emergency drain valve and bottom discharge valve.
- g) Installation and commissioning of system at purchaser's site.

1. General requirements of the mixer vessel.

- a) The vessel shall be designed, fabricated and installed as per "ASME Section VIII, Division 1".
- b) Material of Construction: SS304L.
- c) Dimension and size: As mentioned in drawing.
- d) Lid along with drive and emergency drain valve is available at user site. Supplier can visit the purchaser site for dimensions clearance only after release of purchase order.
- e) Vessel operating parameters:
 - Operating pressure & Temp: 750 mm Hg, 110 °C.
 - Operating Jacket pressure: 15 psig.
 - Design jacket pressure: 50 psig.
 - Agitator RPM & motor power rating: 0-15 RPM, 0.5 HP.
 - Operating fluid viscosity & density: 15000 cps, 1.6 gm/cc
- f) Hydraulic test pressure for jacket: 65 psig.
- g) Dye penetration test for the weld joints. Inside vessel shall be hydraulic tested at 1.5 bar.
- h) Steam jacket shall be covered with suitable insulation so as to keep surface temp below 45 °C. The insulated materiel shall be suitably covered with Stainless steel sheet.
- i) Surface finish inside the mixer vessel shall be of **mirror finish type**.

2. Specification for agitator:

- a. Shaft and agitator shall be made of SS304L.
- b. Agitator shaft details included in drawing is for supplier reference. However, supplier shall design the appropriate helical agitator to mix the material in given RPM range.

- c. Agitator should be designed to provide axial mixing of the fluid.
- d. Clearance of agitator blade from the wall of the vessel shall be 12 mm.
- e. Shaft of the agitator shall be hollow as mentioned in drawing, this will accommodate bottom plug operating shaft to open close vessel bottom valve.
- f. Bottom support to the agitator is not acceptable.

3. Drawing:

- a) General arrangement drawing submitted with the enquiry is for reference only. Supplier shall have to submit detailed fabrication drawing of mixer vessel and helical agitator prior to fabrication work.
- b) The detailed drawing shall be complete with necessary fabrication details, tolerances as per assembly requirements; seal groove details and surface finish, chamfers, fillets, dowelling and fabrication procedure such as welding procedure, heat treatment, surface treatment like coating, painting etc. whenever required for the necessary component of the equipment etc.
- c) The drawing shall indicate the inspection and testing requirements at each stage of manufacturing with necessary details of the test coupons.
- d) Drawing shall be submitted to user in pdf as well as dwg format for review and approval prior to fabrication.

4. Documentation: -

Supplier shall submit the following documents along with the supply of items.

- a) Manufacturer shall supply details of all the materials used with the relevant certificates e.g. MILL tests, heat numbers, ASTM conformity etc.
- b) Final drawing of the vessel and agitator.
- c) Warranty certificate for 12 months.
- d) Three sets of approved drawings.

5. Installation and commissioning:

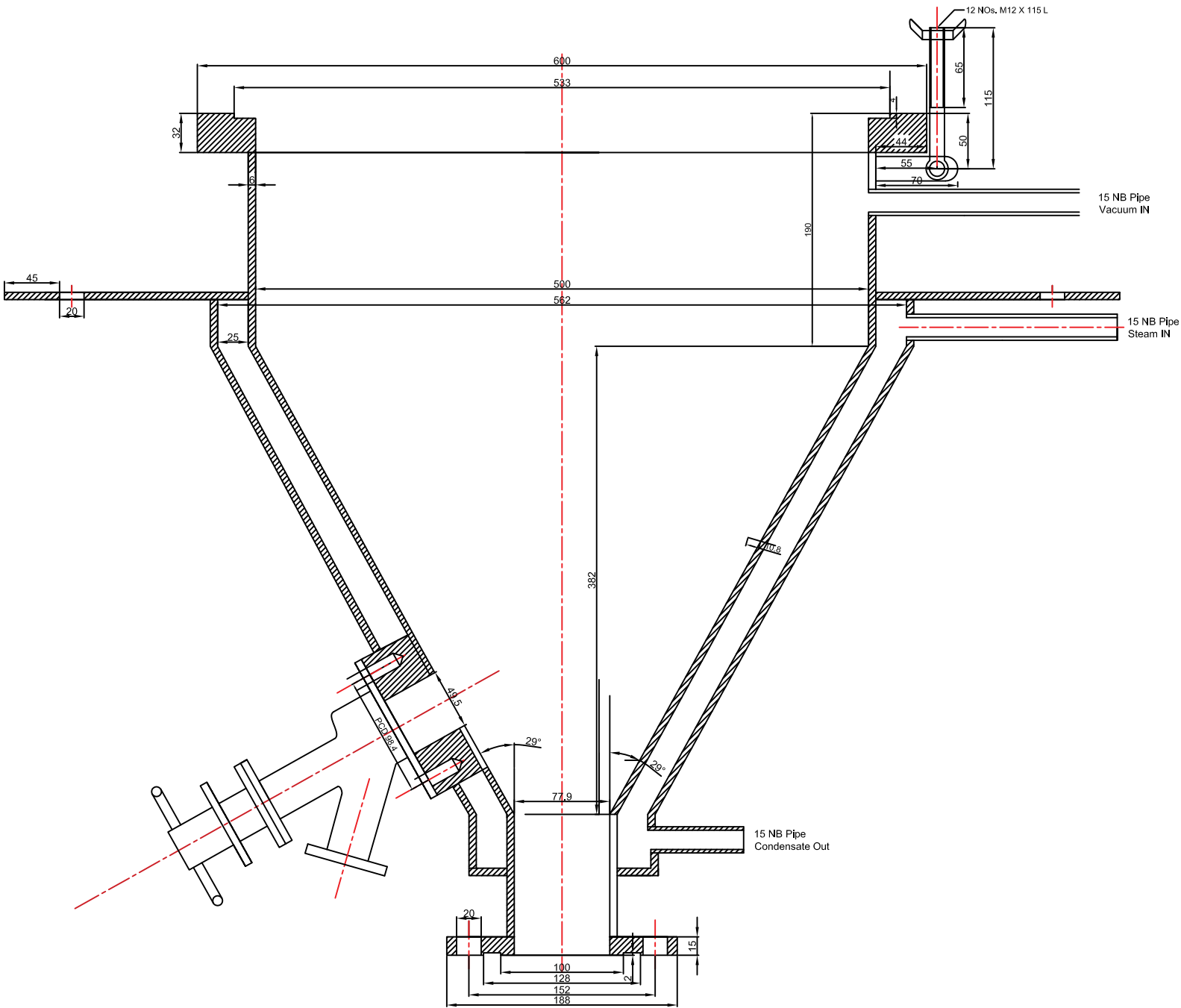
- a) Supplier shall install the equipment at user site and test the complete system for vacuum and pressure as mentioned in specification.
- b) Site preparation and utilities like water, steam, power required for commissioning shall be provided by the purchaser.

6. Warranty:

The equipment should be covered under warranty for its satisfactory performance for a period of 12 months from date of satisfactory commissioning at the user's site. During the period any defective part shall be repaired/replaced free of cost. Total hold up or down time should not be more than one month of the period otherwise the warranty period may extend.

7. Delivery Period:

The delivery period for the supply of vessel and agitator shall be **within six months** after release of purchase order.



Mixing Vessel Drawing
Qty. 01 set
Note: All the dimensions are in MM

Annexure-III

