

(Regd. Office: 21, N.S.Road, Kolkata-700001)

Tender Ref: BL/LC/MAN/CP14SS/LT/202021/0207/Price

Dated: 10.03.2021

Due date: 22.03.2021

Sub: Inviting e- price bids for Manufacture and Supply of 4KL SS316 Tank with Agitator and 4KL SS316 Settler with Agitator as per specification at SBULC Manali – Reg...

Ref:EOI/Techno-commercial Tender: BL/LC/MAN/CP14SS/LT/202021/0207 due on 02.02.2021 and subsequent correspondence, if any.

1. TENDER QUANTITY

SS316 Tank with Agitator of capacity 4 KL - 1 No
SS316 Settler with Agitator of capacity 4 KL - 1 No

2. ITEM TECHNICAL SPECIFICATIONS

Refer Annexure-1 for technical scope, Annexure – 2 and Annexure- 3 for major specifications as finalized; Refer tender and subsequent correspondence for more details and scope of supply

3. PRICE

3.1 The price shall be submitted at our e-portal only, as per the indicative format below:

(Submission of offline price bids will disqualify the bidders's participation in the tender)

(a) **MANUFACTURE AND SUPPLY OF 4 KL SS316 TANK WITH AGITATOR AS PER SPECIFICATION - 1No**

(b) **MANUFACTURE AND SUPPLY OF 4KL SS316 SETTLER WITH AGITATOR AS PER SPECIFICATION - 1No**

Item	Particulars	Formula (if any)
1	Unit Of Measurement	Nos
2	Basic Price per unit	A
3	FREIGHT (Including Insurance) per unit	B
4	TOTAL BASIC PRICE (Including freight & Insurance)	C= SUM (A+B)
5a	CGST (Enter applicable Rate in %)	D1=C* (Applicable CGST Rate in %)
5b	SGST (Enter applicable Rate in %)	D2=C* (Applicable SGST Rate in %)
	OR	
6	IGST (Enter applicable Rate in %)	D3=C* (Applicable IGST Rate in %)

Seal & Signature of the Tenderer:

7	Total Cost	E= SUM(C+(D1+D2) or D3)
8	Less: CGST	F= D1
9	Less: SGST	G= D2
10	Less: IGST	H= D3
11	Landed Cost	I= (E - (F+G) or H)
12	Unloading	By BL
13	HSN Code of the tendered item	To be provided by Vendor

Note:

Related Civil/Mech/Electrical work, if any, for erection and erection work of the equipments, will be carried out by BL. However, supervision of commissioning and testing of the equipments is in Vendor's scope. Charges for supervision of commissioning and testing to be included in the basic price as above. No other extra charges are payable by BL

The basic price should include the Freight, transit insurance, loading charges at supply premises, packing and forwarding. Price quoted should be on FOR Manali basis in **Rs. per unit.**

Vendor has to provide the applicable GST rate in % in the relevant fields as above during price bidding. **If a vendor quotes with CGST & SGST, then they may ENTER "0" (Numerical Zero) in IGST field and similarly, If a vendor quotes with IGST, then they may ENTER "0" (Numerical Zero) in CGST & SGST fields.**

Changes in statutory levies like GST and any taxes as applicable on the product shall be reimbursed at actuals based on documentary proof. Taxes and duties as applicable shall be clearly mentioned.

The vendor has to quote their price as per the above format.

Note: Please note, for price bidding in e-procurement portal, two bid forms will be available as below.

1. Price bid for supply of 4 KL SS316 Tank with Agitator – 1 No (A)
2. Price bid for supply of 4 KL SS316 Settler with Agitator - 1 No (B)

Order(s) will be issued to itemwise lowest (L1) quoted tenderer(s)

3.2 No Change in the accepted price structure on the basis of landed cost at our Manali works shall be permitted during the period of contract under any circumstances.

4. SECURITY DEPOSIT (SD)

Successful tenderer shall be required to submit within 10 days of issue of LOI / PO, SD equivalent to 3% of the total order value rounded off to the nearest thousand rupees by a/c payee pay order / demand draft / irrevocable BG as per our format with a validity of further 3 months from expiry of the contract. The BG format will be issued to successful bidder. No interest will be payable on the SD held with us.

If SD is not received within 10 days from date of LOI/PO, the amount will be deducted from the vendor's bills, if any.

The Security Deposit paid by Pay Order/Demand Draft/Bank Transfer shall bear no interest and shall be refunded to successful bidder, only on successful delivery of the tendered item

All sums of compensation or other sums of money as determined, if any, payable by the bidder may be deducted from the Security Deposit.

Security deposit is liable to forfeiture in the event of:

- a. Not supplying the after Acceptance of Purchase Order.
- b. Successful Bidder fails to deliver the product as per the terms & condition of the Purchase Order.
- c. Successful Bidder violates the tender conditions.
- d. If the performance of the bidder is found to be unsatisfactory
- e. Any unilateral revision made by the successful bidder during the validity period of the contract.

5. PAYMENT TERMS

5.1 Our payment terms as accepted by all vendors would be

-15% of basic as advance against submission of Advance Bank Guarantee valid for 6 months or valid for the delivery period whichever is later

-60% of basic with full duties and taxes: with 30 days credit from date of receipt and acceptance;

-15% of basic against erection and commissioning or within 30 days from the receipt of material, whichever is earlier.

-Balance 10% of basic against PBG valid for one year extended further by 3 months Or after one year of retention period.

Note: Partial advance payment as above prior to dispatch is payable only against Advance Bank Guarantee (taken from a nationalized bank) as per BL format.

Advance Bank Guarantee/Security Bank Guarantee/Performance Bank Guarantee format shall be given to successful tenderer and if the tenderer is submitting BG, it shall be strictly as per our BG format only. In case of advance payment, ABG shall be submitted within 10 days from the date of LOI/PO. However, Advance against ABG is payable only on receipt of Security Deposit (SD).

5.2 Supply will be complete only if all relevant documents etc are submitted. Relevant Material test certificate for bought out items to be submitted along with dispatch.

5.3 Payment will be made only to the bidder or principal on whom the Purchase Order is placed. If offer states that payment is to be made to bidder's financier / creditor, the offer will stand rejected.

6. GUARANTEE

- 6.1** The party shall stand guarantee for material, workmanship and performance for a period of 12 months from the date of commissioning or 18 months from the date of supply, whichever is earlier.
- 6.2** The warranty/guarantee shall extend to the equipment and components manufactured by you or your vendor. In case of prolonged breakdown of equipment during warranty, the warranty period shall be extended proportionately.
- 6.3** During the above period, the party shall attend/repair/rectify /replace any defects whatsoever in material, workmanship and performance and make equipment ready for normal performance.

7. DELIVERY

Delivery period shall be as given in your offer and subsequent confirmation, if any.

Also, it is to be noted that clear detailed drawing shall be submitted for approval along with Quality Assurance Plan (QAP) within 10 days from the date of LOI/PO. BL will revert with approval, with correction if any, within 7 days.

The delivery period mentioned above is inclusive of inspection & testing/transit time. No additional time shall be given separately for inspection/testing/transportation. Hence vendor has to plan and inform BL regarding the readiness of the equipment for inspection/testing with 1 week notice period, and BL shall confirm on inspection & testing within 2 days from the inspection notice given by the vendor.

Corrections/modifications as suggested by BL during inspection & testing to be implemented by the vendor within the mutually agreed period by BL & Vendor, based on the nature of corrections/modifications suggested.

Any delay in submission of Bank Guarantee, drawings etc & delay due to inspection & testing/transportation will be counted into delivery time taken by vendor only

8. LD Clause:

The reactor shall be delivered as per committed delivery schedule without fail. Any delay in delivery as per agreed schedule will be liable for imposition of LD @0.5% of the total order value per week subject to a maximum of 5% on total basic value.

9. CONFLICT OF INTEREST

The bids of any tenderers may be rejected if a conflict of interest between the tenderer and the Company is detected at any stage

10. RISK PURCHASE

Without prejudice to other provisions in the tender, in the event of the vendor failing to supply within the stipulated delivery period, BL shall have the right and option to procure the products from alternate sources, at the risk and cost of the vendor, without further intimation. In case of rejection and with no request for re-test from vendor

against the rejection or on confirmation of rejection after re-test, if dispatch of replacement material is not made within mutually agreed time period, BL shall have the right to procure the product from alternate sources, at the risk and cost of the vendor, without further intimation.

11. DELIVERY TO PLANT

Purchase Order under this tender will be placed for DELIVERED supplies. Transit Risk for the supplied material, Insurance coverage thereof will be borne by the supplier.

12. INSPECTION & TESTING

Refer clause 3.0 of Annexure-1

13. ARBITRATION

Any dispute or difference arising under this Contract shall be referred under jurisdiction of Chennai to a sole arbitrator to be appointed by the Chairman & Managing Director, Balmer Lawrie & Co. Limited and the provisions of Arbitration and Conciliation Act, 1996 including any statutory modifications or enactment thereof shall apply to the Arbitration proceedings. The fees of the arbitrator, if any, shall be shared equally by both the parties. The award shall be a speaking award stating reason therefore and is final and binding on the parties. The proceeding shall be conducted in English language and courts at Chennai will have exclusive jurisdiction to settle any dispute arising out of this contract.

14. GST TAX FORMALITES & COMPLIANCE WITH REGULATIONS

Vendor shall warrant that all goods covered by this agreement / contract are dispatched and delivered in strict compliance with all applicable laws, regulations, labour agreements, working conditions and technical codes and requirements as applicable from time to time. The vendor shall execute and deliver such documents as may be required to effect or to evidence such compliance.

The vendor shall issue the GST invoice so that equivalent amount may be availed as GST / applicable tax credit by BL. Vendor / vendor's nominated transporter shall ensure handing over of the GST paid invoice for availing concerned levy to the Company at the time of delivery of the consignment.

All laws and regulation required to be incorporated in this charter are hereby deemed to be incorporated by these references. BL and / or their authorized representatives disown any responsibility for any irregularity, contravention or infringement of any statutory regulations in the manufacture and / or supply of goods covered by this agreement / contract.

The processing of invoice should be as per the GST Act. Any penalties due to the non-adherence will be deducted from your invoice.

15. ANTI-PROFITEERING CLAUSE

GST Act anti-profiteering provisions mandates that any reduction in tax rates or benefits of inputs tax credits be passed on to the customer by way of commensurate reduction in prices. Vendors to take note of the same and pass such benefits to BL while quoting their price.

16. FORCE MAJEURE

Any delay in or failure of performance of either party hereto shall not constitute default hereunder or give rise to any claims for damage, if any, to the extent such delays / failure of performance is caused by occurrences such as Acts of God or an enemy, decrees of any Government or Governmental authority, acts of war, rebellion, sabotage or fires, floods, explosions, riots, or strikes. The vendor shall keep records of the circumstances referred to above and bring these to notice of the concerned Officer of the buyer in writing within 7 days of such occurrences.

The period of time, if any, lost on any of these counts shall not be counted for the contract period. The decision of buyer arrived at after consultation with vendor, shall be final and binding. Such period of time shall be extended by the buyer to enable the vendor to deliver the items within such extended period of time. As soon as the cause of Force Majeure been removed, the party whose liability to perform its obligation has been affected shall notify the other of such cessation and inform the other party the actual delay incurred in such affected activities. Any such event, whenever it occurs, provided that it prevents, affects or delays the party in performing contractual obligation, shall justify the claim of Force Majeure.

During the pendency of Force Majeure conditions, the Agreement and the obligations there under shall stand suspended provided the notice as required above is given in time. If such event continues beyond 14 days, the parties to this Agreement hereby agree to discuss and decide the course of action to be adopted in this regard including the possibility and manner of terminating the Agreement.

17. CONDITIONS / PROCEDURE FOR BID SUBMISSION

The bidder would be required to submit their price bids online on the e-procurement market place <https://balmerlawrie.eproc.in>. **No offline price bids shall be entertained by the Tender Inviting Authority.** The bidders shall submit their price bid displayed in e Procurement web site.

18. Bid Submission Acknowledgement

The user should complete all the processes and steps required for bid submission. The successful bid submission can be ascertained once acknowledgement is given by the system through bid submission number after completing all the processes and steps. Tender Inviting Authority and C1 India Pvt. Ltd. will not be responsible for incomplete bid submission by users. Users may also note that the incomplete bids will not be saved by the system and are not available for the Tender Inviting Authority for processing.

19. SUBMISSION OF PRICE BID (ON-LINE ONLY)

- 19.1 **Only after techno-commercial evaluation based on the EO/ unpriced offer (Techno-commercial Bids) and subsequent clarifications, if any, the qualified / shortlisted vendors are asked/ allowed to submit their price bid online.**
- 19.2 **Vendors to submit their price online only, as per the indicative format as per **clause 3** as sought in our e-procurement portal.**
- 19.3 **SUBMISSION OF OFF- LINE PRICE BID WILL DISQUALIFY THE BIDDERS's PARTICIPATION IN THE TENDER**

20. VALIDITY OF OFFER

Your price offer (including techno-commercial bid and subsequent confirmations/clarifications) should be valid for our acceptance up to **30 days** from the due date of this tender **(i.e. From 22.03.2021)**.

21. DISCLAIMER CLAUSE

Neither the Company (Balmer Lawrie & Co. Ltd.) nor the service provider (C1 India Pvt. Ltd.) is responsible for any failure of submission of bids due to failure of internet or other connectivity problems or reasons thereof.

All other terms and conditions are as per our tender, techno-commercial bids and subsequent correspondences only.

For Balmer Lawrie & Co Ltd

Sr Manager (SCM – Capex & Projects)

Encl:

- Annexure- 1 (4 pages) – Technical Scope and Specific Conditions**
- Annexure- 2 (3 pages) - Technical Requirements for SS Tank with Agitator**
- Annexure-3 (3 pages)–Technical Requirements for SS Settler with Agitator**



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TECHNICAL SCOPE AND SPECIFIC CONDITIONS

1.0 Scope of supply shall include but not be limited to the following:

- 1.1 Scope shall include fabrication, inspection, testing, packing and dispatch of 4KL SS316 Tank with Agitator (1 No) and/ or 4KL SS316 Settler with Agitator (1 No)
- 1.2 Supplier shall submit detailed drawing of the ordered item(s), Quality Assurance Plan (QAP), Welding procedure specification (WPS) to BL for approval within 10 days from placement of PO/LOI.
- 1.3 Procurement of all the materials whatsoever required meeting the scope of supply.
- 1.4 Supplier shall fabricate & supply the equipment as per given specification sheet and approved drawing.
- 1.5 All welds shall be carried out by TIG method. SS welding shall have a Ferrite content of less than 1%
- 1.6 Pickling and Passivation (Weld surface cleaning) of the weld shall be carried out as per standard procedure. All inside welds shall be ground smooth.
- 1.7 Any other item / activity which is not listed here but is required to for the completion of main equipment and its various components as specified in Specification sheet and enquiry documents shall also be the responsibility and shall be included in supplier's scope of supply.
- 1.8 The equipment shall be inspected BL/TPI as per Clause 3.0 Inspection & Testing.
- 1.9 **Hydro testing** shall be carried out **at test pressure as per ASME section VIII** and same shall be witnessed by BL as given in specification
- 1.10 Testing water shall have Chloride content not exceeding 40 ppm
- 1.11 Equipment shall be dried & thoroughly cleaned both inside & outside by blowing hot compressed Air. All water, dirt, sand, weld metal, spatter & foreign material to be removed.
- 1.12 Test gaskets shall be of similar specification as service gasket & shall be replaced by new gaskets after testing.
- 1.13 All the material to be supplied with MTC in original from reputed testing laboratories only.
- 1.14 Supplier shall submit 3 sets of all the Final – As built drawings in hard copy and one set of soft copy.
- 1.15 Packing & Transportation for the delivery of the equipment is in Party's scope

2.0 Material of Construction

Material of Construction shall be as per specification sheet / BL approved drawing / additional requirements as given in BL Enquiry document.

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3.0 Inspection and Testing

3.1 The entire job of procurement of Raw material for fabrication, welding, qualification of welders and welding procedures, testing etc shall be carried out under a third party inspection agency (TPI).

3.2 Third Party to be lined up by Supplier and their Inspection charges shall be borne by Supplier only & list of 3rd Party is as below:

- M/s. Lloyds Registers Asia (LRIS)
- M/s. Bureau Veritas Industrial Services (BVIS)
- M/s. Projects & Development India LTD (PDIL)

3.3 The TPI shall include but not limited to the following

SL No.	Activity	BL Requirement
1	1) Certification of QAP & WPS 2) Raw material Identification/correlation 3) Material Testing Review. (Bought our Material test report)	Review of record and witnessing (As applicable) by TPI
2	Fabrication Process & Dimensional Check	Review of record and witnessing (As applicable) by TPI
3	DP Check of circumferential/longitudinal weld seams	Vendor to retain the test certificates & offer to TPI during final inspection
4	Inspection of NDT tests	-do-
	1) Final Hydrotest/Water Fill Test 2) Documentation & Certification and 3) Final release for dispatch	Witnessing, Review of records and issue of final release for dispatch of TPI/BL

3.4 All Raw materials shall be inspected at source by authorised inspection agency and test certificates with due identification shall be submitted. Nozzle fit up clearance will be by BL/ or its TPI

3.5 Following NDT requirements are mandatory in addition to the requirements of code/specifications:

- a) Dye penetrant test shall be carried out for the following:
 - Root run and final layer of all but welds
 - Shell to bottom plate fillet welds
 - Flange to shell/dome fillet welds
 - Nozzle to shell/dome/bottom plate welds

3.6 Spot radiography shall be applicable to all pressure welds ie., longitudinal & circumferential

3.7 Complete equipment shall be hydro tested in presence of the inspection authority. Duration of test shall be 1 hr minimum.

3.8 Running Trial test

3.9 Documentation & Certification

3.10 Final release for dispatch

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4.0 Fabrication

- 4.1 Manufacturer of equipment shall comply in all respects with the provisions of the applicable codes/standards and specifications with respect to welding, fabrication, forming of heads, radiography, heat treatment, inspection, testing and quality control etc.,
- 4.2 All welding shall be carried out by qualified welders using approved procedure in compliance with the requirements of code & specification and duly certified by the inspecting authority. All Welding procedure must be got approved from authorized inspection authority before starting any fabrication job. Welding of all parts must be completed before heat treatment.
- 4.3 Due provisions must be kept for venting out entrapped gases during welding of pads, flanges and liner plates etc.,
- 4.4 All nozzle reinforcing pads shall be tested pneumatically at 0.5kg/cm²g pressure with soap solution on attachment welds
- 4.5 Pads for supports and external cleats etc shall be of same material as the of shell
- 4.6 All sharp corners shall be rounded off with smooth radius
- 4.7 All welding neck flanges shall be bored to suit nozzle ID. Flange facings shall have suitable serrations for gasket seatings in case of plain, male/female and raised.
- 4.8 Equipment shall be provided with suitable bracings/stiffeners to avoid any damage during transportation and erection at site.
- 4.9 All nozzles less than or equal to DN65 shall be stiffened with three equi-spaced ribs of the same material as that of shell
- 4.10 External bolting for gasket flanges shall always be stud bolts and nuts

5.0 Cleaning & Despatch

- 5.1 After water fill testing, the equipment shall be dried, thoroughly cleaned from inside and outside and shall be free from all shop dirt, loose scale, grease etc.,
- 5.2 All machined surfaces, bolting and flange faces shall be properly protected from rust and mechanical injury during transit and storage
- 5.3 SS Name plate of Size 250 mm X 150 mm with code No. details of equipment etc shall be provided in conspicuous place.
- 5.4 Responsibility of transportation, packing & forwarding of equipment shall be with the supplier
- 5.5 All spares shall be properly packed, marked and sent separately along with equipment

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6.0 General Conditions

6.1 Any deviation from herein stipulated specifications and other enquiry documents shall be clearly mentioned in the offer under 'Deviations' with proper reference to clause number

6.2 In the absence of any such indication, it shall be assumed that the offer complies with all the requirements and such assumption shall be strictly binding on the party

6.3 Approval by BL for design, calculation and fabrication drawing of the equipment will not in any way absolve the party from his responsibility towards correctness of design/drawing, proper material, good workmanship and performance guarantee of the equipment.

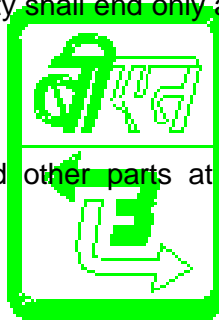
6.4 All the revised and final drawings/document/ specifications only will be considered and for any dispute, BL's decision will be final and binding on the party.

6.5 Equipment shall be considered acceptable for dispatch only after issuance of Final inspection clearance by BL/it's TPI

However, the responsibility of party shall end only after successful performance test at site.

7.0 BL Scope

Unloading of the equipment and other parts at BL factory, lifting and shifting to equipment location.



8.0. Commissioning

Any defects found in the material and workmanship during the commissioning shall be rectified by the party immediately, free of cost. If required, vendor's representative shall be available at the time of commissioning at BL site and charges if any towards supervision of commissioning shall be included in the basic price.

9.0 Guarantee

9.1 The party shall stand guarantee for material, workmanship and performance for a period of 12 months from the date of commissioning or 18 months from date of supply, whichever is earlier.

9.2 During the above period, the party shall attend / repair / rectify / replace any defects whatsoever in material, workmanship and performance and make the equipment ready for normal performance

10. Time Schedule

Complete equipment as per the above scope of supply shall be supplied along with BL's dispatch clearance, within the delivery schedule committed from the date of receipt of approved drawing from BL

Technical:**(A)SS 316 FEED TANK WITH AGITATOR: CAPACITY 4 KL- 1 No.**

Sl.No.	Description	BL requirement	Vendor's Offer
1	EQUIPMENT	4 KL -SS316 Tank with Agitator	As offered and confirmed by shortlisted vendors
2	TYPE	Vertical Cylindrical; Top –Flat cover ; Bottom- Conical	
3	APPLICABLE FOR	Dryer Feed Tank	
4	BASIC CODE	ASME SEC VIII DIV I	
5	SERVICE FLUID (vessel)	Organic/Inorganic chemicals (Sp.Gr: 1-1.2 gm/cc; Viscosity: 1000 CPS(max); pH:2 to 9)	
6	SERVICE (JACKET)	: STEAM	
7	DESIGN DATA	SHELL / JACKET : Atm / 3 KG/CM2 MAX. WORKING PRESSURE DESIGN PRESSURE : 6 (external) / 6 KG/CM2 WORKING TEMPERATURE : AMB – 110(MAX) / 150 deg C CORROSION ALLOWANCE : 1.5mm WORKING CAPACITY : 4 KL appx MIN AGITATING VOLUME : 500 LIT (Vendor to specify) JOINT EFFICIENCY : SHELL/DISH: 0.85/1 RADIOGRAPHY : SHELL/DISH: SPOT/FULL	
8	MAJOR DIMENSIONS	DIAMETER : ID 2000 MM appx STRAIGHT HEIGHT : 1500 MM appx JACKET : ID 2102 MM appx (with min 45mm gap between vessel shell and jacket)	
9	THICKNESS *	(Indicative. Vendor to specify) SHELL / JACKET : 6 MM / 8 MM TOP COVER/BOTTOM BAFFLES : 3 MM / 6 MM : 6 MM	
10	BAFFLES:	SPACE BETWEEN SHELL WALL & BAFFLES : 1.5% OF SHELL DIA BAFFLES WIDTH : 90 MM * No. of BAFFLES : 4 Nos	

Sl.No.	Description	BL requirement	Vendor's Offer
11	MATERIAL OF CONSTRUCTION SHELL/TOP /Bottom JACKET NOZZLE FLANGES/ B.F. MANHOLE NECKS MANHOLE COVER / B.F. BOLTS & NUTS GASKET AGITATOR BLADES AGITATOR SHAFT BAFFLES BAFFLE POSITION SUPPORTS	(SS 316 IN WETTED PARTS) : SS 316 : MS : SHELL - SS316 : JACKET- ASTM A105 : SS 316 : SS 316 : SS 316 IN WETTED PARTS : PTFE with SS corrugated : SS 316 : SS 316 : SS 316 : VERTICAL ON SHELL INSIDE : LUG PADS: SS 316 : LUGS : IS2062 GR.A	As offered and confirmed by shortlisted vendors
12	CONSTRUCTION DETAILS JACKET MANHOLE SUPPORT TYPE PAINTING ON MS	: with SPIRAL BAFFLE : FLIP OPEN TYPE : STD LUGS : 4 NOS : EPOXY PRIMER	
13	SURFACE FINISH INTERNAL SS PARTS EXTERNAL SS PARTS	: MIRROR FINISH : MATT FINISH	
14	AGITATOR DETAILS ** DUTY IMPELLER TYPE & NO SHAPE OF BLADES NO. OF BLADES	: SHAFT DETACHABLE & Impeller removable through manhole : Liquid / Slurry mixing : Paddle type (Vendor to specify as suitable) : Vendor to specify : Pls specify as per design	
	DIA. OF IMPELLER SHAFT DIA X LENGTH SHAFT- IMPELLER ATTACHMENT SHAFT SEALING IMPELLER REVOLUTION TYPE OF SUPPORT	: Pls specify as per design : Pls specify as per design : DETACHABLE : STUFFING BOX : 60 - 100 RPM appx : Vendor to specify	
15	THERMOWELL WITH RTD	To be provided	

Sl.No.	Description	BL requirement	Vendor's Offer
16	MOTOR DETAILS TYPE MOTOR HP MAKE REDUCTION GEAR BOX (HORIZONTAL)	: FLP ; 415V ; 50Hz ; 3 PH; TEFC; IE - 2 /3 : 10 HP * (Vendor to specify suitable to our process requirement & Agitator) : KIRLOSKAR / CROMPTON/EQVLT :BONFIGLIOLI / ELECON / RADICON	As offered and confirmed by shortlisted vendors
17	TEST REQUIRED HYDROSTATIC	TEST PRESSURE AS PER CODE(ASME SEC VIII)	
18	MESH FILTER	SS 316 MESH FILTER TO BE PROVIDED TO FIX ON MANHOLE OPENING (MESH SIZE: 1 MM; SIZE: 750X350MM)	
19	APPROXIMATE WEIGHT		
	EMPTY :	Vendor to specify	
	FULL OF WATER:	Vendor to specify	

NOTE:

1. **Vendor to guarantee the mixer design also for uniform mixing.**
2. **Agitator shall be detachable and removable through manhole.**
3. **Motor Gear Box Assembly for Agitator to be fixed on separate MS frame (Not loading on vessel top)**
4. **QAP and drawing of the equipment (Agitator and blade drawings should be furnished separately) to be approved by the BL before fabrication.**

Technical:**(B)SS 316 SETTLER WITH AGITATOR: CAPACITY 4 KL- 1 No.**

Sl.No.	Description	BL requirement	Vendor's Offer
1	EQUIPMENT	4 KL -SS316 Settler with Agitator	As offered and confirmed by shortlisted vendors
2	TYPE	Vertical Cylindrical; Top –Flat cover ; Bottom- Conical	
3	APPLICABLE FOR	Settling of liquids	
4	BASIC CODE	ASME SEC VIII DIV I	
5	SERVICE FLUID (vessel)	Organic/Inorganic chemicals (Sp.Gr: 1-1.2 gm/cc; Viscosity: 150-1200 CPS(max); pH:5 to 8)	
6	SERVICE (JACKET)	: STEAM	
7	DESIGN DATA	SHELL / JACKET : Atm / 3 KG/CM2 MAX. WORKING PRESSURE DESIGN PRESSURE : 6 (external) / 6 KG/CM2 WORKING TEMPERATURE : AMB - 110(MAX) / 150 deg C CORROSION ALLOWANCE : 1.5mm WORKING CAPACITY : 4 KL appx MIN AGITATING VOLUME : 500 LIT (Vendor to specify) JOINT EFFICIENCY : SHELL/DISH: 0.85/1 RADIOGRAPHY : SHELL/DISH: SPOT/FULL	
8	MAJOR DIMENSIONS	DIAMETER : ID 1500 MM appx STRAIGHT HEIGHT : 2000 MM appx JACKET : ID 1602 MM appx (with min 45mm gap between vessel shell and jacket)	
9	THICKNESS *	(Indicative. Vendor to specify) SHELL / JACKET : 6 MM / 8 MM TOP COVER/BOTTOM BAFFLES : 3 MM / 6 MM : 6 MM	
10	BAFFLES:	SPACE BETWEEN SHELL WALL & BAFFLES : 1.5% OF SHELL DIA BAFFLES WIDTH : 90 MM * No. of BAFFLES : 4 Nos	

Sl.No.	Description	BL requirement	Vendor's Offer
11	MATERIAL OF CONSTRUCTION SHELL/TOP /Bottom JACKET NOZZLE FLANGES/ B.F. MANHOLE NECKS MANHOLE COVER / B.F. BOLTS & NUTS GASKET AGITATOR BLADES AGITATOR SHAFT BAFFLES BAFFLE POSITION SUPPORTS	(SS 316 IN WETTED PARTS) : SS 316 : MS : SHELL /JACKET: SS316 / ASTM A105 : SS 316 : SS 316 : SS 316 IN WETTED PARTS : PTFE with SS corrugated : SS 316 : SS 316 : SS 316 : VERTICAL ON SHELL INSIDE : LUG PADS: SS 316 : LUGS : IS2062 GR.A	As offered and confirmed by shortlisted vendors
12	CONSTRUCTIONAL DETAILS JACKET MANHOLE SUPPORT TYPE PAINTING ON MS	: with SPIRAL BAFFLE : FLIP OPEN TYPE : STD LUGS : 4 NOS : EPOXY PRIMER	
13	SURFACE FINISH INTERNAL SS PARTS EXTERNAL SS PARTS	: MIRROR FINISH : MATT FINISH	
14	AGITATOR DETAILS ** DUTY IMPELLER TYPE & NO SHAPE OF BLADES NO. OF BLADES	: SHAFT DETACHABLE & Impeller removable through manhole : Liquid mixing & settling : Paddle type (Vendor to specify as suitable) (2 stage) : Vendor to specify : Pls specify as per design	
	DIA. OF IMPELLER SHAFT DIA X LENGTH SHAFT- IMPELLER ATTACHMENT SHAFT SEALING IMPELLER REVOLUTION TYPE OF SUPPORT	: Pls specify as per design : Pls specify as per design : DETACHABLE : STUFFING BOX : 60 - 100 RPM appx : Vendor to specify	
15	TUBE LEVEL INDICATOR	Toughened Borosilicate glass, C- Channel Powder coated, Graduations in mm, Gland packing – Teflon.	

Sl.No.	Description	BL requirement	Vendor's Offer
16	MOTOR DETAILS TYPE MOTOR HP MAKE REDUCTION GEAR BOX (HORIZONTAL)	: FLP ; 415V ; 50Hz ; 3 PH; TEFC; IE - 2 /3 : 10 HP * (Vendor to specify suitable to our process requirement & Agitator) : KIRLOSKAR / CROMPTON/EQVLT : BONFIGLIOLI / ELECON / RADICON	As offered and confirmed by shortlisted vendors
17	Variable Frequency Drive	To be provided to adjust Agitator speed. Please specify details	
18	Thermowell with RTD	To be provided	
19	TEST REQUIRED HYDROSTATIC	TEST PRESSURE AS PER CODE (ASME SEC VIII)	
20	APPROXIMATE WEIGHT		
	EMPTY :	Vendor to specify	
	FULL OF WATER:	Vendor to specify	

NOTE:

1. Vendor to guarantee the mixer design also for uniform mixing.
2. Agitator shall be detachable and removable through manhole.
3. Motor Gear Box Assembly for Agitator to be fixed on separate MS frame (Not loading on vessel top)
4. QAP and drawing of the equipment (Agitator and blade drawings should be furnished separately) to be approved by the BL before fabrication.