



झारखण्ड राज्य सहकारी दुग्ध उत्पादक महासंघ लिमिटेड



**Jharkhand State Cooperative Milk Producers' Federation Ltd**  
**Medha Dairy, Near BirsaMunda Jail, Hotwar, Ranchi – 835217**

Phone no: 7544003404

Email: [purchase@jmf.coop](mailto:purchase@jmf.coop)

**TENDER FOR**  
**SUPPLY, INSTALLATION AND COMMISSIONING OF 30 KL VERTICAL MILK**  
**STORAGE SILO**



Submission of filled in Tender Documents: - within 3:00 P.M on Dt. 21 May 2018

Name of Tenderer: \_\_\_\_\_

Address: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Telephone no: \_\_\_\_\_

Email Id \_\_\_\_\_



**Quotations are invited for supply, installation and commissioning of 30 KL Vertical Milk Storage Silo**

The Jharkhand State Cooperative Milk Producers' Federation Ltd. (JMF), registered under Jharkhand Co-operative Societies Act, 1935 is engaged in milk procurement, processing and marketing activities of item milk and milk products in the state of Jharkhand and is popularly known for its brand 'Mother Dairy- Medha'. Under an MoU, the Federation is being run and managed by the National Dairy Development Board (NDDB).

Offers/Quotations are invited in a Sealed Envelope from reputed manufactures/suppliers for the supply, installation and commissioning of 3Nos.of Vertical Milk Storage Silo of capacity - 30 KL atour Medha Dairy Plant, Hotwar, Ranchi – 835217. Technical details of items can be seen in the enclosed format.

Offers/Quotations may be submitted to the undersigned **on or before May 21, 2018 by 15:00 hrs** in a sealed cover super-scribed clearly with “**Offers for Supply, Installation and Commissioning of 30 KL Vertical Milk Storage Silo**”.

**Instructions for submitting of Tender:**

1. The tender is being invited under two bid systems i.e.,
  - a. Technical Bid and
  - b. Commercial/Financial Bid.
2. The interested supplier/manufacturer is required to submit the **Technical Bid** in a separate sealed envelope super-scribing “*Technical Details- Tender for Supply, Installation and Commissioning of 30 KL Vertical Milk Storage Silo*” and **Commercial/Financial Bid** in a separate sealed envelope super-scribing “*Commercial/Financial Bid for Supply, Installation and Commissioning of 30 KL Vertical Milk Storage Silo*”.
3. The 'Technical Bid' should contain all the details and required documents as mentioned in the Annexure-II.
4. Bids received in any manner other than as prescribed above are liable to be rejected summarily.

**General Terms and Conditions**

1. The tenderer need to fulfil its complete detail as requested in the prescribed format enclosed as Annexure -I “Proforma for filing Tender”.
2. The tenderer must follow the specifications while quoting for Equipment as mentioned in enclosed Annexure – II.
3. The tenderer must quote the rate of equipment(s) on F.O.R. Destination basis inclusive of P&F, Taxes, Insurance, Freight/Transportation charges etc.
4. The tenderer need to quote the rate for the item(s)/ material(s) as per the format enclosed as “Annexure-III (Commercial/Financial Bid)”.
5. The quoted rate shall be valid for 90 days from the date of opening of offers/bids.
6. All entries in the 'Tender Form' should be legible and filled clearly. If the space for furnishing information is insufficient, a separate sheet duly signed by the authorized signatory may be attached. No overwriting or cutting is permitted in the Price Bid Form



(Annexure-III -Commercial/Financial Bid). In such cases, the tender shall be summarily rejected.

7. On awarding of the order to qualified supplier/ manufacturer, the party has to supply the 30 KL Vertical Milk Storage Silo at the quoted rate as per enclosed specification and as per the delivery schedule stipulated in the purchase/work order
8. The tenderer must indicate their GST and PAN nos as mentioned in the proforma, falling which the offer of the party will be summarily rejected.
9. The Company guarantees that the goods manufactured by it and delivered hereunder will be free of defects in materials and workmanship for a period of twelve (12) months from the date of shipment.
10. On receiving orders from JMF, the supply of Product at Jharkhand Milk Federation, Ranchi or any location specified by it shall be the responsibility of the supplier. The rejected material, if any, shall have to be lifted by the supplier at their own cost within a week time from the date of intimation from JMF. JMF shall not be responsible for any deterioration due to delayed lifting of the rejected material by the supplier.
11. Material to be suitably packed to prevent damages during transit.

**Payment Terms and Conditions:**

1. 30% Advance against Bank Guarantee valid till the supply is affected. 60% within 30 days from the date of receipt and its acceptance. 10% after one year from the date satisfactory Commissioning and performance trial. However, this can be released along with 60% payment against submission of a bank guarantee for 10% value valid for one year from the date of Commissioning.
2. The tenderer shall have to pay Earnest Money Deposit (EMD) 1% of the total quoted value in form of crossed Demand Draft (DD) in favour of “Jharkhand State Cooperative Milk Producers Federation Ltd”, payable at Ranchi while submitting the tender. Submission of earnest money by any mode other than specified above shall not be accepted and the related tender shall not be eligible for consideration.
3. Earnest money deposit (EMD) of unsuccessful tenderers will be returned back within 60 days from the date of opening of the tenders. The earnest money deposited of the successful tenderer shall be released on completion of successful supply of entire quantity allotted /ordered within the stipulated period.
4. No interest will be paid on the earnest money for the period during which it (the earnest money) lying deposit with the Jharkhand Milk Federation.
5. JMF reserves the right to accept or reject any or all the offers without assigning any reason thereof. Managing Director, JMF shall be Arbitrator in case of any disputes and his decision will be final and binding on both the parties. For all legal matters & dispute Ranchi court shall be our Jurisdiction. Any money found recoverable shall be recovered under the public Demand Recovery Act without prejudice to any other mode of recovery.

**General Manager,**

**Jharkhand Milk Federation**

Medha Dairy Plant,

Beside Birsa Munda Central Jail

Hotwar, Ranchi-835217

Jharkhand



**Annexure-I**

**TENDERER'S PROFILE**

1. Name of the Tenderer/Company:.....
2. Nature of the Tenderer/firm: .....  
(Proprietorship/Partnership/Pvt. Ltd. Co./Any other firm)
3. Address of the Tenderer: .....  
.....  
.....
4. Contact Info:.  
Telephone Nos. ....  
Mobile.....  
E-mail: .....
5. GSTIN No. .... PAN No.: .....
6. Bank Details:  
Bank name .....  
Account No. .... IFSC Code .....

To be submitted in separate sealed cover

I / We hereby declare that the information furnished above are true and correct.

Date:

Place:

(Signature & seal of the Tenderer)

Name:

Designation:



**Annexure-II**

**TECHNICAL SPECIFICATIONS**

**MILK SILO, CAPACITY: 30 KL**

**QUANTITY: 3 Nos.**

**SCOPE OF WORK:** Supply and installation of milk silos at Medha Dairy, Hotwar, Ranchi, a unit of Jharkhand Milk Federation, Ranchi. Silo foundation / platform shall be provided by the purchaser for installation. Silos will be installed in a row parallel to the existing ones.

**ELIGIBILITY** : The bidders should have completed at least one purchase order for similar nature of work (i.e., supply of milk silos) for a value not less than Rs. 60.00 lakhs in co-operative dairies/NDDDB in last 3 years

1.0 FUNCTIONAL REQUIREMENTS

The milk silo would be used to store raw chilled / pasteurized milk at 4 degree Celsius temperature.

2.0 DESIGN REQUIREMENTS

2.1 Capacity: 30000 L

The volume of the silo should be such that after filling it up to the rated capacity the level would be at least 100 mm below the line where cylindrical shell joins the conical top.

2.2 Constructional Features: The silo shall be of vertical double walled, insulated and welded construction of sanitary design.

2.3 Slope: The bottom of the silo should have 1:15 slope towards inlet cum outlet for free and complete drainage of milk and CIP solution.

2.4 Metal Contact: The construction shall be such that there should be no metal-to-metal contact between the inner and the outer shells except at the places where the fittings and mountings for the milk silo are provided. At the places where mild steel stiffeners are provided, insulated padding should be fixed between the inner stainless steel shell and stiffeners.

2.5 Finish: All stainless steel welding joints shall be sound, free from porosity and brittleness and are to be ground smooth and polished to 150 grits. All



stainless steel surfaces shall be left with original 2B mill finish or polished to 150 grits.

- 2.6 Joint Curvature: The radii of all welded and permanent attachment joints should be at least 6 mm. Where the conical top and flat bottom join the cylindrical shell, the radii should not be less than 25 mm.
- 2.7 Installation: It should be suitable for outside installation. The accessories mounted on top should be weather proof.

### 3.0 SCOPE OF SUPPLY

- 3.1 Inner Cylindrical Body: The inner cylindrical shell & conical top of the silos should be fabricated from 2.5 mm & 3 mm thick stainless steel sheets respectively and flat bottom minimum 3 mm thick stainless steel sheet conforming to AISI 304.
- 3.2 Outer Shell: The outer cylindrical shell and conical top should be fabricated from 2 mm & 3 mm thick stainless steel sheets conforming to AISI 304 respectively.

The stiffeners between inner and outer shells and supporting structure (cradle) for bottom of the milk silo shall be provided of mild steel. The cradle provided to the bottom of the milk silo shall be so designed as to take the weight of the silo when filled with milk.

- 3.3 Insulation: The entire inner stainless steel shell (including the alcove portion), conical top and flat bottom should be insulated in three layers as follows:

1<sup>st</sup> layer: 15 mm thick Polyurethane foam insulation having 30 to 35 Kg/Cum density, applied circumferentially.

2<sup>nd</sup> layer: 50 mm thick expanded polystyrene insulation having 16 to 20 Kg/Cum density, applied longitudinally.

3<sup>rd</sup> layer: 50 mm thick expanded polystyrene insulation having 16 to 20 Kg/Cum density, applied circumferentially.

Finally aluminium foil of 0.07 mm thickness shall be covered over the insulation as vapour barrier to prevent moisture ingress.



The insulation should be applied in staggered joints. All joints should be sealed with bitumen or CPRX compound. The bitumen or CPRX compound should be applied uniformly on both the surfaces and all four sides of first and second layers of insulation and on inside surface of third layer of insulation.

### 3.4 Accessories

3.4.1 Alcove: The alcove arrangement should be of size 1800 mm x 1500 mm and projecting 900 mm from the silo. The alcove should accommodate the inlet cum outlet, man way, thermometer pocket, level indicator, sampling cock and nameplate. Alcove should be fabricated from 3 mm thick AISI 304 sheet and should be directly bolted / welded onto the outer shell of milk silo. - 1 no.

3.4.2 Inlet cum Outlet: A stainless steel AISI 304 cup welded to the inner shell bottom with a 63.5 mm diameter outlet pipe and a two way butterfly stainless steel (AISI 304) flanged valve ending in complete stainless steel SMS union should be provided as inlet-cum-outlet. The design and construction of the valve shall be such as to ensure a flush closing with the inner shell and also proper cleaning and hygienic conditions. The outlet pipe should be 10 G- 1 no.

3.4.3 Air Vent: A Stainless steel (AISI 304) 450 mm diameter air vent should be provided on top of the silo. The vent shall have sufficient free opening area (with wire mesh cover fitted) to prevent formation of partial vacuum during CIP / emptying and pressure build up during filling of the silo. The vent shall be protected from ingress of vermin / insects by removable wire mesh cover. The condensate collection tray made out of 2.5 mm SS 304 material, in circular design shall be provided for the air vent with a provision to drain off the condensate collected during the CIP operation. This is to be provided to have clean outer surface of the silos, which otherwise would have soiled marks. The supplier shall provide a drain line from the drain point of the air vent up to the bottom of the milk silo. The vent shall also be protected by a hood to prevent any dirt or other particles falling from above. The hood should be bolted down. - 1 no.

Stainless steel (AISI 304) bracket should also be provided near the air vent for fixing and hanging rope ladder. - 1 no.

3.4.4 Man way: An oval shaped stainless steel (AISI 304) man way of dimensions approximately 550 x 405 mm at the front end of the silo shall be provided with a leak proof hinged insulated stainless steel (AISI 304) door with tightening and locking device. The man way door should open inward but at





the same time it can be taken out when necessary. The gasket of the door should be of endless construction food grade neoprene or nitrile rubber of good quality for airtight closing. - 1 no.

- 3.4.5 Sight Glass: A Stainless steel (AISI 304) sight glass assembly of 140 mm dia should be provided with toughened glass. It should be so positioned that one can get the full view of the inside of the silo & easily read from the zero level up to the rated capacity level marks - 1 no.
- 3.4.6 Sand Blasted Level Marks: It should be calibrated for the rated capacity at 500 L intervals and provided on the inner shell at opposite side of the sight glass. The calibration should be done with sand blasted level marks so that the calibrations are clearly visible through the sight glass.
- 3.4.7 Light Glass: A Stainless steel (AISI 304) light glass assembly of 140 mm dia should be provided with toughened glass and stainless steel lamp shade for mounting a 24 V, 100 Watt bulb. The lamp holder should be made of brass- 1 no.
- 3.4.8 Mechanical Side Agitator: A mechanical side mounted agitator shall consist of a stainless steel AISI 304 grade 3 blade propeller type impeller and shaft driven by either a suitable rating 8 pole TEFC squirrel cage flanged induction motor with IP 55 protection or a low RPM geared motor and a suitable mechanical seal to prevent any milk leakage from the silo. The agitator should be provided near the bottom of the silo. The side agitator should ensure non-separation of fat and uniform mixing and agitation of milk in the silo within 10 minutes to enable drawing a truly representative sample from the tank. The agitator shaft should be made of SS 304 rod. - 1 set.

The agitator shall be of sanitary construction and easily cleanable by spray of cleaning liquid during CIP of tanks. The agitator motor shall be 440 V AC, 3Φ, IE 2, squirrel cage flanged induction motor, TEFC, IP 55 enclosure and should be provided with stainless steel shroud. The shroud shall be easily dismountable and shall have provision for air circulation and cable entry.

- 3.4.9 Level Indicator and transmitter: Provision for mounting a sanitary type liquid level indicator and transmitter shall be provided. All the milk contact parts shall be of SS 304 material. The liquid level transmitter shall be diaphragm type differential pressure transmitter of E&H / Emersion make. Suitable arrangement for mounting of LED type level indicator shall be provided The opening for electronic level indicator shall be provided with a blind counter flange. **The level transmitter & indicator are included in the scope of supply.** - 1 no.





- 3.4.11 Spray Ball / turbine : Removable stainless steel (AISI 304) cleaning device located at the apex of the conical top of milk silo to provide flooding of cleaning liquid over the complete interior surface during CIP and facilitate thorough cleaning. It should have stainless steel union at the outer end connection. The minimum size of the opening shall be 51 mm. - 1 no.
- 3.4.12 Sampling Cock : A sanitary design stainless steel (AISI 304) sampling cock of size not less than 5.0 mm should be provided on the inlet cum outlet nozzle to enable taking sample of milk in the silo. - 1 no.
- 3.4.13 Thermowell : A 300 mm long stainless steel (AISI 304) inclined pocket suitable for mounting RTD sensor should be suitably located in the alcove. It should be made from 25 mm dia, 2 mm thick SS 304 pipe with 3/4" BSP boss **The RTD PT 100 sensors and digital temperature gauge are included in the scope of supply.** Suitable stainless steel bracket shall be provided for mounting the digital thermometer on front side of the tank. - 1 set.
- 3.4.14 Drain Hole: The outer shell should be provided with one or more drain holes of 8 mm dia at the lowest point.
- 3.4.15 Lifting Lugs: Stainless steel (AISI 304) lifting lugs of minimum 20 mm thick should be provided at top. - 4 nos.
- 3.4.16 Anchor Points: Anchor points, pipes and sockets should be provided on the top of the tank so that safety railings and platform could be welded to them after installation. - 1 set.
- 3.4.17 Railing : Circular railing made out of 38 dia SS 304 pipe with 150 mm width x 2 mm thick SS kick plate shall be provided all along the periphery of the silo. The railing shall be complete with suitable no. of sockets and vertical posts of 900 mm height. The sockets shall be welded on top of the silo for fixing the vertical posts. However, the railing pipes shall be supplied loose and shall be assembled / welded at site as per the requirement.
- 3.4.18 Sockets for Level Probes: Three nos. sockets shall be provided on the silo as provision for mounting level probes for high, medium (agitator cut off sensor) & low levels. **The level switches are included in the scope of supply.**
- 3.5 Painting: All the mild steel supports / stiffeners used in the construction of the silo should be painted with two coats of epoxy paint after thorough de-rusting.

#### 4.0 INSPECTION AND TESTING:

The manufacturer at its works shall conduct the following tests.



- 4.1 Dye penetration test for all welding joints of inner shell.
- 4.2 Water fill-up test of inner vessel for water tightness.
- 4.3 Agitator running trial
- 4.4 When man way is closed and cover tightened without gasket then the gap at any place between man way neck and cover should not exceed 0.5 mm.

5.0 Manufacturing Code:

The silo shall be manufactured following good manufacturing practices.

6.0 **Inspection of Silo by JMF:**

Inspection of silos at various stages of fabrication shall be carried out by JMF to check the following:

- Thickness of sheet used in fabrication of inner tank and outer cladding
- DP Test and water fill-up test of inner tank
- Test of Insulation density and thickness
- Final inspection on completion of silo fabrication

NOTES

- General arrangement drawing of this equipment should be submitted for the approval of the Purchaser.
- Makes of the following major bought out items are to be specified by the bidder:

	1st Preference	2nd Preference
8 pole Electric Motor		

**Make of level transmitter & indicator and level switches: E&H**



**Annexure-III**

**(COMMERCIAL/ FINANCIAL BID)**

Sl. No.	Description Goods	Qty	Unit	Basic Price	Taxable Value	GST @ %	Insurance	Freight	Total FOR Amount (In Rs.)
1	30 KL Vertical Milk Storage Silo	3	Nos						
2	Installation & Commissioning Charges								

Note:

(a) In case of discrepancy between unit price and total price, the unit price shall prevail.

Total bid price in Rs. \_\_\_\_\_

In words \_\_\_\_\_

Signature of Bidder \_\_\_\_\_

Name \_\_\_\_\_

Business Address \_\_\_\_\_

Place:

Date: