

REQUEST FOR QUOTATION (RFQ)

Supply, Installation, Testing and Commissioning of a 20,000 Litre Vertical Jacketed Insulated Milk Storage Silo

Ref No.: LDFCS/07/RFQ/2026

Purchaser: LIMURU DAIRY FARMERS COOPERATIVE SOCIETY LTD

Country: KENYA

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1. Introduction

Limuru Dairy Milk Processing Plant (LMPL) invites quotations from qualified manufacturers and authorized suppliers for the supply, installation, testing and commissioning of one (1) 20,000 Litre Vertical Jacketed Insulated Milk Storage Silo suitable for hygienic storage of raw and pasteurized milk.

The silo shall be designed for continuous dairy processing and shall be fully compatible with the existing milk processing line and CIP system.

2. Design Conditions

Parameter	Requirement
Product	Raw Milk and Pasteurized Milk
Gross Capacity	**20,000 Litres**
Effective Working Capacity	Minimum 20,000 Litres
Orientation	Vertical Cylindrical
Installation	Indoor
Tank Type	Vertical Jacketed Insulated Milk Storage Silo
Material (Product Contact)	AISI 304L Stainless Steel (3 mm minimum)
Outer Cladding	AISI 304 Stainless Steel (2 mm minimum)
Surface Finish (Internal)	2B Finish, Pickled and Passivated, Ra ≤ 0.8 µm
Surface Finish (External)	Satin Polished
Insulation	100 mm Mineral Wool
Jacket	Intermediate Chilled Water Jacket along Cylindrical Section, AISI 304L Stainless Steel (3 mm minimum) along cylindrical

	portion.
Design Pressure	Atmospheric
Design Temperature	0–90°C
Product Storage Temperature	2–6°C
Cleaning	Fully CIP Compatible
HMI Language	English
Documentation	English

3. Scope of Work

A. Milk Storage Silo

The supplier shall provide one complete 20,000-litre vertical jacketed insulated milk storage silo.

The silo shall include:

- Gross capacity 20,000 litres
- Vertical cylindrical construction
- Fully insulated
- Chilled water cooling jacket
- Hygienic dairy construction
- Self-draining bottom
- Continuous operation
- Complete support structure

B. Tank Construction

The tank shall comprise:

- 3 mm minimum AISI 304L inner shell
- 2 mm minimum AISI 304 outer cladding
- 100 mm mineral wool insulation
- Fully welded hygienic construction
- Ground and polished welds
- Pickled and passivated internal surfaces
- Stainless steel lifting lugs
- Stainless steel nameplate

C. Cooling Jacket

The supplier shall provide:

- Full-height intermediate chilled water jacket along the cylindrical section
- Jacket manufactured from 3 mm AISI 304L stainless steel
- Chilled water inlet and outlet connections
- Pressure-tested jacket
- Complete insulation over jacket

Supplier shall specify:

- Recommended operating pressure

D. Agitation System

The silo shall be supplied complete with a slow-speed side-mounted agitator comprising:

- Side-entry mixer
- 1.5 kW geared motor (or equivalent, sized by supplier)
- Approximately **290 RPM**
- Stainless steel shaft
- Stainless steel propeller (approximately 400 mm diameter or as designed by the supplier)
- Mechanical seal suitable for dairy applications
- Thrust bearing
- Bottom bearing
- Continuous operation
- Low-shear mixing to avoid cream churning

Preferred manufacturers:

- Inoxpa
- Alfa Laval
- APV
- Or approved equivalent

E. Instrumentation

The silo shall include:

- Continuous radar or guided-wave level transmitter (e.g. Endress+Hauser FMB/FMP series or equivalent)
- PT100 temperature sensor with local digital display
- Local temperature indicator
- High-level alarm
- Low-level alarm
- Stainless steel instrument connections

F. Tank Fittings

The silo shall be supplied complete with:

- DN500 side manhole
- DN40 rotary spray device
- 63 mm sanitary outlet with vortex breaker
- 63 mm non-foaming product inlet
- Stainless steel sampling valve
- Hygienic vent device with insect screen
- Overflow connection
- Drain connection
- Stainless steel lifting lugs
- Stainless steel adjustable support legs with ball feet
- Anchor plates

G. CIP System

The silo shall be fully compatible with the plant CIP system.

The supplier shall provide:

- Rotary spray head(s)
- Complete CIP coverage
- Self-draining design
- Hygienic pipework
- CIP inlet
- CIP outlet
- Recommended cleaning parameters

Supplier shall specify:

- Flow rate
- Pressure
- Cleaning temperatures

H. Electrical & Control System

The supplier shall provide:

- Stainless steel control panel
- Motor starter
- Agitator controls
- Temperature display
- Level display
- Alarm indication
- Emergency stop

Where PLC-controlled instrumentation is supplied:

- HMI shall be in English
- PLC documentation shall be in English
- All manuals shall be in English

4. Installation Works

The supplier shall undertake:

- Delivery
- Testing
- Commissioning
- Performance testing
- Operator training

5. Schedule of Supply and Prices

Item	Description	Qty	Unit	Unit Price	Total Price	Make/Model	Country	Remarks
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				(KES)	(KES)			
1	20,000 L Vertical Jacketed Insulated Milk Silo	1	No.					
2	Chilled Water Jacket	1	Set					
3	Side Agitator Complete	1	Set					
4	Level Measurement System	1	Set					
5	PT100 Temperature System	1	Set					
6	Stainless Steel Control Panel	1	No.					
7	CIP Rotary Spray Device	1	Set					
8	Installation, Testing & Commissioning	1	Lot					
9	Operator Training	1	Lot					
10	Operation & Maintenance Manuals (English)	3	Sets					
11	One-Year Recommended Spare Parts	1	Lot					
12	Warranty (24 Months)	1	Lot					

Sub-Total

VAT (if applicable)

Grand Total (KES)

6. Performance Guarantee

The supplier shall guarantee:

- Storage capacity of ****20,000 litres****
- Effective chilled water cooling through the jacket
- Uniform product temperature
- Gentle agitation without cream churning
- Complete CIP coverage
- Leak-free construction
- Hygienic dairy design
- English documentation
- Minimum ****24-month warranty****

7. Documentation

The supplier shall provide:

- Technical datasheets
- General Arrangement (GA) drawings
- Foundation loading drawings
- Nozzle orientation drawings
- Jacket drawings
- Electrical schematics
- Instrument loop diagrams
- Operation & Maintenance Manuals (English)
- Spare Parts Catalogue (English)
- Preventive Maintenance Schedule
- Calibration certificates
- Pressure test certificates
- Warranty certificate

Recommendations to strengthen the RFQ

- ****Load calculations for support legs****.
- ****Hydrostatic pressure test certificate**** before dispatch.
- ****100% radiographic or dye penetrant testing of critical welds****, where applicable.
- ****Pressure-tested cooling jacket**** with certified test report.