

Sri Vijaya Visakha Milk Producers Company Limited

Akkireddy Palem, BHPV(Post),Vishakhapatnam-530012, Andhra Pradesh

GSTIN 37AAJCS7398P1Z4

TIN/CST NO: 37132885261

Phone : 0891-2517230

Excise Regn.No: AAJCS7398PEM001

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Email : purchase@visakhadairy.com

Vendor Code: V02116

PURCHASE ENQUIRY

S

ENQUIRY No : PEQE8-25-161

Date : 04-10-2025

Indent No: S3-25-113

Indent Dt: 04-10-2025

Unit-Name VISAKHAPATNAM

Department : FEED & FODDER

Center-Name: GARBAM

Bid Date 28-10-2025

Ph.

Email ID :

Please supply the Equipment/Material Specified below.All terms and conditions incorporated here in on the reverse / attached to this purpose order including general terms and conditions of purchase.

ITEM ANNEXURE ATTACHED

Sealed Tenders are invited for Design, Supply, Installation and Commissioning of Cattle Feed Plant of capacity 600MTPD.

Tender forms will be sold from 07.10.2025 to 28.10.2025 up to 4.00 PM at Visakha Dairy or through Email and the cost of Tender form is Rs.5000/-.

Sealed Tenders with E.M.D amount of Rs.10,00,000/-(Ten Lakh only)

by way of D.D/RTGS. will be accepted on or before 30.10.2025 up to 12.00Noon and the sealed tenders will be opened on 30.10.2025 at 12.30pm

at Viskha Dairy.Visakhapatnam.

Delivery Schedule :

Place of Delivery :

Special Note :

Narration :

Delivery Terms :

For VISAKHA DAIRY

Sr. Manager (Purchase)

Sri Vijaya Visakha Milk Producers Company Limited

Akkireddy Palem, BHPV(Post), Vishakhapatnam-530012, Andhra Pradesh

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ITEM ANNEXURE FOR ABOVE PURCHASE Enquiry

S.No	Code	Description	Toler%	Units	Indent No:	Quantity
1	CPMEPM1723	Cattle Feed Plant , Capacity :600MTPD Remarks:Remarks: Design, supply, installation, testing and commissioning &all detailed specifications enclosed and Delivery Location of Grabham ,Merakamudidam Mandal ,Vizianagram District Specifications:Technical Specifications : . Two Production lines each of minimum 15 TPH . One of the above lines shall also design with all accessories to produce 12.5 TPH pellets to produce 250 MT/Day for pellet.		Nos	S3-25-113 04-10-2025	1.00

Sr. Manager (Purchase)

600MTPD Cattle Feed Plant

Design, supply, installation, testing and commissioning

Capacity:

Two production lines each of minimum 15 TPH to produce 600 MTPD (Metric ton per day) on 20-hour operation basis for MASH. One of the above lines shall also design with all accessories to produce 12.5 TPH Pellets to produce 250 MT/Day for pellet.

Size of pellet:

8 - 10 mm diameter & 15 – 20 mm long for milch cattle only.

Feed specification as per BIS type-II standards”

Ether extract	: 2.5% (Minimum)
Crude protein	: 20% (Minimum)
Crude fibre	: 12% (Maximum)
Acid insoluble ash	: 4% (Maximum)
Moisture	: 10% (Maximum)

Typical raw materials are:

Maize, groundnut de-oiled cake, De-Oiled Rice Bran, Rice Polish, De-Oil CottonSeed Extraction, Rape Seed DOC, Soya DOC, Mineral Mixture, Common Salt, Urea, Molasses, Molasses substitute etc.

General feed formula for design of plant:

Grain	: 8 to 10%
Rice bran	: 12 to 15%
DORB	: 40 to 50%
Khali	: 12 to 14%
Filler material	: 5 to 6 %
Premix	: 4 to 6%
Molasses	: 13-15%
Formaldehyde	: As required
Others	: Please mention the details

Bulk density:

550-600 kg per cubic meter shall be considered for all storage, conveying & production equipment unless otherwise specified differences.

Raw material storage:

RMG capacity: Approx. area 3000 square meter

Finish material storage:

FPG capacity: Approx. area 1500 square meter

GODOWN INTAKE

- Dumping hoppers 7 nos
- Aspiration units 4 nos
- Intake chain conveyor 40 MT 2 nos (45 mtrs length)
- Intake cross chain conveyor 2 nos (20 mtrs length)
- Pneumatic slide gates etc..

Premix:

- A premix shall be made for mineral mixture, calcite, common salt, urea, with 2-3%DORB as carrier. Premix plant shall be installed in raw material godown.
- Premix batch pre-mixer shall be horizontal ribbon/Paddle type, capacity 500 Kg/ Batch.
- Mechanized feeding consists Dumping hopper, reverse air jet filter-premix, premix intake screw conveyor, premix bucket elevator of capacity 20 TPH, Aspiration for bucket elevator, Double magnet each of 2000 gauss, Batch premix hopper of capacity 500 kg, are included in the scope of tender .
- Hoppers with pneumatic slide gate / flap above and below premix batch mixer.
- Pre-mix from 7.2 MT capacity hoppers below pre-mixer shall be directly fed to one of the pre-weighing bins through conveyor and elevator.

Molasses Storage:

Molasses storage tank 1000 MT; 3 Nos.
Molasses pre-heater 3 MT; 1 No.
Molasses Day tank 2 MT; 1 No.

Compressed air generation:

Screw type lubricated air compressor-200 CFM; 2 Nos. (1W+1S)

Automation

PLC based control system as per detail technical specification.(ALLANBRADLEY/SIEMENS are preferable)

Steel Structure

Production block: MOC MS as per detailed technical specification. Complete Plant structure is in Bidder scope.

PROCESS FLOW DESCRIPTION:

1.0 Intake and cleaning:

All the ingredients packed in bags for feed production would be received at the plant by road. These shall be first weighed at Lorry weighbridge and then samples will be taken. Lorries shall then be directed to raw material go-down/silo section for storage. At the go-down/silo section, the bags will be manually unloaded and stacked in the go-down. As per the requirement of production, ingredient bags are brought to various dumping hoppers provided over intake chain conveyors located suitably in the go-down, where the bags will be opened manually, and contents dumped. Ingredients are taken from these dumping hoppers to production block through conveyors and elevators.

Ingredients, on reaching the production block are directed to pre-weighing bins for storage before batching. Before going to pre-weighing bins, the ingredients must pass through Z magnets, Jute removal etc. to remove ferrous impurities, jute etc.

2.0 Batching and mixing:

Formulae containing various available ingredients in the plant based on least cost to produce a specific type of balance concentrate feed are made available by quality control officer of the plant for production. All the major ingredients of these formulae are stored in various pre-weighing bins. Plant is provided with an automatic batching system by which the desired quantity of each ingredient and premix is discharged from pre-weighing bins by screw dischargers into a hopper to make a batch. Once the batch is ready, it is conveyed to the batch hopper. This total powder batch is then conveyed to Grinding. Interlocks are provided to ensure that no two batches are mixed.

3.0 Grinding & batch mixing:

The complete batch is fed to the hammer mills in a controlled way through variable speed feeder. In hammer mill, the coarse material breaks into fine powder till they pass through the sieve of the grinder and then conveyed to batch mixer through elevator and conveyors (if needed).

The mixing of powder ingredient in batch mixer is generally carried out for **3 to 4 minutes**. The operation from batching to mixing is automatic with suitable interlocking to ensure that no two batches are fed to mixer at a time for mixing. After mixing in batch mixer, manual sampling is done to check the Coefficient of Variance (CV) of the mixed feed within limit ($\leq 5\%$).

4.0 Molasses:

Molasses is an important cheap source of energy and hence is generally included in the feed formulation. Molasses is received at plant through road tankers which after weighing on lorry weigh bridges are unloaded by gravity in underground concrete reservoir, from where it is pumped to large capacity vertical steel storage tanks. As per the requirement of production, it is pumped to molasses mixer in a controlled manner after preheating for adding to feed. Batch after getting mixed in batch mixer is conveyed by elevator. The mixed feed is then continuously fed to molasses mixer through variable speed feeder.

where molasses is metered and mixed by spraying and continuously churning of the feed.

5.0 Pelleting:

The molasses feed is fed to conditioner where it is cooked with the help of steam. In pellet mill, cooked mash feed is pressed between die & press rolls resulting into formation of pellets which are cut to required length by pre adjusted knife of the pellet mill. Immediately after pellet mills, pellets are cooled in pellet coolers by sucking air through the column of pellets. The cooled pellets are conveyed to pelletsieve from where pellets are conveyed and stored in bins/hoppers for bagging. Before filling pellets in bagging bins, manual sampling is done for testing the pellet quality.

6.0 Bagging and dispatch:

Finished product from bins is filled in bags through bagging off weigher where in prefixed quantity of feed is filled. Filled bags are then conveyed to finished product godown on a slat conveyor and while getting conveyed, bags also get stitched on stitching machine. From the godown, bags are manually loaded in trucks for dispatch of feed.

TECHNICAL SPECIFICATIONS OF MECHANICAL EQUIPMENT

PROCESS EQUIPMENT (MAIN MACHINES)

Batching Section

Sixteen numbers (16) of Pre-weighing Bins or Proportionate bins will be install to store raw materials before weighment and batch formulation. The pre-weighing bins will be feed with distribution screw conveyor. The different raw material would be fed to batch weighing hopper from where it is sent to batch collection hopper.

* 10 Nos bins of 45cu.m

* 6 Nos bins of 25cu.m

VARIABLE SPEED FEEDER FOR HAMMER MILLS 15TPH

1.0 Functional requirement:

To control the feeding rate of batched ingredients flowing across to the grind-ingequipment.

2.0 Design requirement:

2.1 Material of construction: Mild steel.

2.2 Type: Vane (Rotary)

It will be controlled through a variable speed drive for continuous & controlledfeeding of batch material to hammer mill.

2.3 The variable speed drive will be slaved by a controller in PLC, so that feed to hammer mill could be automatically regulated depending upon electric load of hammer mill motor for most efficient operation.

2.4 The feeder will be having strong permanent ferrite magnet and Inspection door.

HAMMER MILL 15TPH(2nos)

1.0 Functional requirement:

Hammer mill is used to grind coarse ingredients, such as cereals, oil meals etc., to obtain a more uniform & desired particle size of the batched ingredients.

2.0 Design requirement:

The design of the Hammer Mill shall be horizontal & full circle type with bottom discharge. Machine shall grind batched ingredients, on a single pass and to reduce particle size of desired mesh size, according to the sieve fitted. The sieve is fitted all around the rotor to give maximum sieving area. The open screen area shall not be lesser than 1.15 square meter. The hammer mill should have air assisted system for efficient removal of ground particles across the sieve.

Hammer mill shall be directly coupled to the drive IP 55 Motor of 1440 rpm. Grinding in hammer mill shall be obtained by mechanical impact of a set of free-swinging rotating Tungsten Carbide hardened hammers (mounted on rods) on individual ingredient particle, till it is small enough to pass through the 4.5 mm screen, along with aspiration air. The screen of the hammer mill shall be placed around the grinding chamber to maximize the screening area.

Capacity: 15 TPH

3.0 The machine to have the following general & special features:

- a. Large, hinged doors for quick opening & changing/interchanging of grinding screen & reversibility & replaceability of hammers.
- b. Directional reversal for grinding shall be possible for increased life of the hammers.
- c. Long life & dustproof bearings for the hammer mill. All protection/safety devices for the mill.
- d. Statically & dynamically balanced for Low noise & vibration. The composite unit of hammer mill & motor shall be mounted on a common base frame with heavy duty vibration dampers.
- e. Control panel for automatic controlled operation of hammer mill, its feeder and to ensure operation safeties.
- f. Electrical motor efficiency: IE-3
- g. Design of the screen perforations shall be to maximize the open screen area.

BATCH MIXER(1 no)

1.0 Functional requirement:

Batch mixer is required to improve the homogeneity of a batch consisting of dry solids e.g. flours, meals and fine powders to achieve a set co-efficient of variance.

2.0 Design requirement:

- 2.1 Provision of vitamin/liquid dosing in the mixer shall be considered while designing the mixer. The mixer shall be **horizontal, paddle type** and shall be designed to achieve mixing by turning of rotor in the mixing chamber.
- 2.2 The mixer to be designed to operate efficiently even for 50% of full capacity filling.
- 2.3 The Mixer to be dust-tight, single shaft with cylindrical mixing trough, of sturdy steel construction, rotor supported by two outboard pillow blocks, heavy duty ball bearings and fitted with sturdy paddles.
- 2.4 Quick emptying of the mixer to be ensured through a full-length bottom opening pneumatically operated gate. There should not be any product leakage

through this gate when mixer is being charged. The Mixer is to be complete with manhole, safeties, shaft seals, limit switches for gate position, **duplex chain drive between gear box and motor shaft**, drive guard air balancing ducts with above & below hoppers, horizontal foot mounted geared motor, Air breathers, pneumatic cylinders and solenoid valves etc. Geared motor shall be coupled through tyre type flexible direct coupling.

Capacity: 2.5 MT/ Batch

MOLASSES MIXER(suitable for molasses of 15%)

1.0 Functional requirement:

Molasses mixer is required to prepare a homogeneous dispersion of heated molasses throughout the incoming powdered mixed feed. Mixer shall be able to mix Molasses up to 15%.

2.0 Design requirement:

2.1 **Type:** slow speed, horizontal, twin rotor with paddle.

2.2 All plates touching the feed shall be of AISI 304. Design shall ensure that there is very little sticking of molasses on inside surface of stator, and it can run continuously without cleaning. For this purpose, the mixer is to be provided with Teflon or equivalent coating on inside surface of the stator. Loss in weight system shall be provided for accuracy of mixing.

2.3 The design shall ensure that no molasses is dozed, when the feeder /feeding is stopped.

2.4 The mixer shall be complete with 4 nos. of swing type cleaning doors, all safeties, driving geared motor, direct tyre type coupling arrangement with separate MS base frame and anti-vibration pads.

2.5 Rotors will be statically and dynamically balanced with adjustable SS 304 paddles.

Capacity: 15 TPH

Body thickness: 3 mm thick SS 304 plate (minimum)

End plate: 6mm AISI 304.

STEAM CONDITIONER

1.0 Functional requirement:

The steam conditioner is required for cooking/conditioning of mash feed with steam for pellet formation.

2.0 Design requirement:

- 2.1 All parts of the adjustable twin paddle conditioners coming in contact with the feed are to be of **stainless steel (AISI 304)** and the unit should be suitable for direct mounting over pellet mill.
- 2.2 The conditioners will be having arrangement of injecting and mixing steam and molasses (minimum 3%) by the help of adjustable pitch paddles.
- 2.3 The design shall be such that the **cooking time** of the feed, shall be **at least 30 seconds**.
- 2.4 **Capacity: 15 TPH**
- 2.5 PT 100 for temperature indication will be provided at the outlet of the conditioner.

PELLET MILL

1.0 Functional requirement:

Pellet mills are required for the pelleting of conditioned molasses mixed feed, by forcing the feed between rotating die and press rolls.

2.0 Design requirement:

- 2.1 **Capacity: 12.5 TPH** based on following chemical analysis of formulae (% on as such basis & testing as per procedure specified by BIS- II).

Bulk Density:	550 - 600 kg/m ³
Crude Protein:	20.0 (minimum)
Fat/oil:	3.0 (minimum)
Sand-Silica:	2.0 (maximum)
Fiber:	12.0 (maximum)
Moisture:	10.0 (Maximum)

- 2.2 Pellet Mill will be horizontal type with pulley & "V" belt drive arrangement.

2.3 Feature:

- Solidly constructed and welded steel frame for mill.
- Die chamber casing in corrosion resistant stainless steel (AISI 304).
- Quick release knife assemblies for regulating the pellets length.
- Servicing hoist mounted on the pellet mill to facilitate changing of dies and press rolls.
- A shear pin and limit switch device, mounted on the main support shaft, to protect the mechanical press components, drive belts and main drive motor from overloading.
- Die fixing arrangement mounted on the die holder body for quick die changing.
- Powerful permanent magnet in pellet mill inlet to eliminate ferrous foreign particles.
- Main drive motor (IP 55) of RPM not exceeding 960 with additional pillow block bearing and extra shaft for motor.
- V belts & pulleys
- Anti-vibration mountings.

- Die of 8 mm diameter holes.
- Distributor for uniform delivery of mash to rolls. Hand tools for maintenance, adjustable torque wrench and hydraulic press for removing shells from press rolls.

PELLET COOLER (VERTICAL)

1.0 Functional requirement:

Pellet cooler is required to cool hot and moist pellets by drawing ambient air, immediately after discharge from pellet mill.

2.0 Design requirement:

2.1 Type: Counter current (vertical box type)

2.2 Cooling medium: ambient air

2.3 MOC: SS304

All interior parts which are not made of non-rusting material shall have anti-corrosion painting.

2.4 The discharge arrangement: oscillating top grill with eccentric mechanism.

2.5 Cooler will be completed with geared motor, pellet discharger, hinged type inspection door with sight glass, air inlet and discharge connections, uniform and regular distribution of the air across the complete cross section of cooler should be ensured to permit optimum utilisation of the air.

The pellet discharge from the cooler will be automatic based on level sensor. The cooler has arrangement for manual and automatic adjustment of discharge rate for pellets, after getting cooled.

2.6 Capacity of the pellet cooler: **12.5 TPH**

2.7 Major construction materials shall be as follows:

- Top conical pellet inlet and air outlet - minimum 2 mm thick SS304
- Box type cooling column - minimum 2 mm thick SS 304
- Collection hopper below tray - minimum 5 mm thick MS plates
- Stator and rotor of air lock - minimum 5 mm thick SS 304
- Grill type trays - mild steel plate / flat, hot - dip galvanised. The drive unit will be connected to the main shaft by a chain and sprocket mechanism.

PELLET SIEVE

1.0 Functional requirement:

Pellet sieve is used to separate pellets from pellet crumbles and fines through a vibratory mechanism of the sieve and directs pellets and crumbles for further operations.

The cooled pellets are conveyed mechanically by elevator to pellet sieve where powder is separated and is sent back to pellet mill for re-pelleting whereas good pellets are conveyed and stored in bins for bagging.

2.0 Design requirement:

2.1 Type: Rectangular, complete enclosed, mounted in MS frame

2.2 MOC: 1. Main body: mild steel (minimum 3 mm thick) Sieve: Stainless steel

2.3 Capacity:

2.4 Size analysis of feed: Pellet size, 8 to 10 mm dia. x 15 to 20 mm long

2.5 Vibrations is produced by unbalanced motors attached to the inclined sieve-housing mounted on helical springs which is designed for quick and efficient-separation.

2.6 Adjustable moving flap with counterweights shall be used for retaining pellets. The sieve shall have arrangement for quick opening and replacement of sieves. The pellet sieve shall be completed with anti-vibration & canvas cloth joints at inlet and outlet.

3.0 Noise:

The machines, which normally operate in the speed range 960 - 1500 rpm (16 – 30Hz), have a near-field sound pressure level below the rating N 85.

The suspension springs isolate 95 - 98 % of the structural noise.

CONVEYING & CLEANING EQUIPMENT

CHAIN CONVEYOR

1.0 Functional requirement:

Intake chain conveyor is required to convey raw materials of approximately 550kg/CUM density horizontally or at inclination not exceeding 10 degrees.

2.0 Design requirement:

Capacity: 40 MTPH

Length: As per layout

2.1 These shall be of dust tight and bolted design.

3.0 Technical specification and scope of supply

3.1 Tensile terminal:

Tension end built up generally at the driving end. The trailing wheel is mounted on an EN 24 steel shaft running in pad bearings, manually adjustable screw tensioning facility.

3.2 Inlet casing:

Dual side inlet - shape of trough
Baffle plates at the inlet of the troughs from dumping hoppers

3.3 Drive terminal:

The case is fabricated from mild steel plates and pressings with end flanges for bolting to the casing.

The driving sprocket, which has hardened steel teeth, is mounted on an EN24 steel shaft running in pad bearings.

3.4 Terminals and casing:

- Material H.R sheets IS 2062
- Plate thickness:
- Side plates: **4.0mm** thick minimum.
- Bottom plates: **5.0mm** thick minimum with UHMWPE liner 10 mm at the bottom for entire length to ensure a low level of noise and wear.
- Top covers: 3.0mm thick minimum.
- Drive end side plate: 5 mm thick
- Non-drive side plate: 5 mm thick
- Terminals and casings to be dust-tight construction
- Bolted construction from flat and pressed mild steel plates with end flanges dressed after welding to provide an even mating surface between sections. Centre return runners are provided with abrasion resistant steel wear strip. The method of construction promotes dust tightness, true alignment and rigidity.

3.5 Chain:

- Conveying chain having drop forged, case hardened alloy steel haulage members, case hardened alloy steel connecting pins with secured cir-clips.
- Mild steel flights are welded to the haulage members at regular intervals and flight with UHMWPE sleeves preferable.
- Breaking Load: 150 KN
- Case Hardening: 57 Rockwell 'C' minimum
- Chain speed - between 0.35 to 0.45 m/sec

3.6 Conveyor supports:

- It is easy to adjustable to various inclinations and can be used for both standing and hanging transport.
- Standard height of supports: 0.5m, 1.0m, 2.0m
- Maximum distance between supports: 3m

3.7 Safety devices

- Overflow flap with counterweights or product height monitoring device with external limit Switch mounted externally.
- Zero speed switch
- Inspection door on cover plate at regular interval.
- Chain self-cleaning device

3.8 Paint specification:

- Two coats of Zinc chromite followed by two coats of PU paint/ Any advanced paint system
- Chain conveyor body -RAL 1013 (oyster white)
- Chain conveyor supporting legs - RAL 5015 (Sky Blue)

BUCKET ELEVATOR

1.0 Functional requirement:

Bucket elevator is required to convey cattle feed material vertically.

2.0 Design requirement:

2.1 Capacity: 35 TPH/40 TPH for materials having bulk density of 550 Kg/Cu.m.
Pre-mix bucket elevator 20 TPH

2.2 This will be centrifugal discharge type with belt & bucket with dust tight design.

2.3 Belt linear speed will not exceed 2 m/sec.

3.0 Technical specification and scope of supply:

3.1 Elevator bottom:

- Fabricated from H.R sheets IS 2062 and minimum 4mm thickness
- Easily removable side plates for clean out and Inspection doors near inlet and buckets.
- Telescopic screw type arrangement for belt tightening.
- Zero Speed monitor and mounting bracket
- Pulley shaft to be fully machined and from high tensile material such as EN24.
- Sealing between casing flanges to ensure dust free performance.
- Inlet spout size of Ø300mm (located where the bucket move upwards in the leg)
- Liner (Fibre / Polyurethane/ UHMWPE) 10mm thickness in the inlet area for noise and wear reduction

3.2 Elevator Intermediate casings:

- Fabricated from H.R sheets IS 2062 and minimum 2mm thickness
- All casings to be fabricated with welding fixture in single setting for perpendicular.
- All holes in the top & bottom flanges will be jig drilled for interchangeability
- Sealing between casing flanges to ensure dust free performance.

- Bracing frames or plates at each casing joint.
- Floor covering plates at floor crossings.
- Access doors on one casing for maintenance & belt tightening – detachable door in full length
- Filter adapter - Suit to install point filters for aspiration.
- Dust suction adapter for dust aspiration
- Misalignment switch for control of straight running belt

3.3 Elevator top and drive arrangement:

- Hood to be of split design and split hood on top of minimum 3 mm thick.
- Liner (Fiber/Polyurethane/UHMWPE) in the discharge area for noise and wear reduction in the front portion of the hood.
- Adjustable lip in the discharge opening for preventing the return of material to the boot.
- Crown face head pulley.
- Drive hollow shaft mounted gear with standard motor/geared motor and coupling with Motor base plate fixed to the Head housing.
- Pulley shaft to be fully machined and from high tensile material such as EN24 and mounted on pulley bearings
- Maintenance platform in elevator head for maintenance, if the elevator motor located above 1m from floor level
- Back stop – Paul & Ratchet type
- Outlet hopper size of Ø300mm

3.4 Belt & Bucket:

- Belt– White/Black PVC belting with 100% polyester
- Resistant to mineral, vegetable and animal oils and fats
- Oil resistant belts - transport of material with temp from -10° to +100°C
- Belt should be anti-static according to ISO284 and DIN 22104
- Elevator belt to be delivered with pre drilled holes for the specific buckets
- Bucket - MS edge hardened and seamless
- Bucket delivered with holes and depressions fitting the special bolts
- Elevator speed -Between 1.8 to 2.2 m/sec

3.5 Bolts, nuts, washers and felt packing 5 mm thick for internal connections /assembly, for fixing geared motor on base frame, for fixing guard, inlet and outlet etc. Bolts - Galvanized (8µm) + bi-chromate. Bolts are according to DIN 933 with steel quality 8.8 or 10.9. Nuts are according to DIN 934 with steel quality 5.6.

SCREW CONVEYOR/DISCHARGER

1.0 Functional requirement:

Screw conveyor is required to convey cattle feed material horizontally or at inclination of maximum 10 degree.

2.0 Design requirement:

2.1 Capacity: 40 MTPH.

Length & Qty.: As per layout.

2.2 Design: dust tight & bolted.

3.0 Technical specification and scope of supply:

3.1 Screw Inlet trough:

- Top opening length: suitable
- Trough type with dosing saddle and trough material: 4 mm thick M.S

3.2 Trough:

- U-shaped trough and trough material: 4 mm thick M.S
- Trough cover: 2 mm CRCA sheet and Trough end plates: 8 mm thick M.S
- Sealing between trough ends and end plates to ensure dust free performance.

3.3 Screw:

- Continuous flights of 5 mm thick (mild steel)
- Variable pitch at inlet and constant pitch at the 'U' trough

3.4 Bearings (Plummer blocks):

Double row self-aligning ball bearings on Feed end and the drive end.

3.5 Sealing:

Trough end and shaft sealing with stuffing box and gland.

Top covers to be sealed with trough top flanges using self-adhesive Polyethylene foam.

3.6 Safety devices

Overflow flap with counterweights or product height monitoring device with external limit switch mounted externally.

3.7 Screw conveyor supports:

It is easy to adjustable to various inclinations and can be used for both standing and hanging transport. Standard height of supports: 0.5 m, 1.0 m, 2.0 m. Maximum distance between supports: 3 m

Note:

MOC of all conveying equipment in Silo section will be GI and for other conveying equipment (In RMG, Production plant & FPG) will be MS.

SLAT CONVEYOR

1.0 Functional requirement:

These are used in feed plant for transfer of pellet filled (Jute, PP & HDPE bag) bags from bagging machine to finished product go down with an inclination up to 10 degrees.

2.0 Design requirement:

- Conveyor Type: Roller mounted chain type wooden slat conveyor
- Capacity: 400 bags per hour
- Length of conveyor: Suitable
- Speed of conveyor: 25 meters / min.
- Width of slat: 80mm
- Length of slat: 550 mm
- Thickness of slat: 30 mm
- Chain Pitch: 3 Inch
- Slat Pitch: 6 Inch

Material of construction:

- Slats: Wooden/GI
- Conveyor body, stands, railing and chain links: Mild Steel
- Wheels: Harden EN-8

3.0 Technical specification & scope of supply:

- 3.1 Wooden slats of 30 mm thick having size 550 mm x 80mm x 30 mm on a pitch of 125 mm.
- 3.2 Chain of conveyor is made of 125 mm pitch from alloy steel with attached to every link at one side with flanged roller and cotter pin construction pin with one forged head end and other milled end to prevent the rotation of pin.
- 3.3 Roller of conveyor is made from alloy steel duly heat-treated flanged roller EN-8 harden steel wheels fitted on chain.
- 3.4 Main body will be having 3 mm thick side plates with cross bracing of MS flat-steel throughout the length of conveyor below the top slats. Stiffener rods across the width are provided in the return passage.
- 3.5 Hardened (EN-8) sprocket wheels (2 nos. at each end) for moving chains are fitted on shafts and ball bearings. At feed end, screw type chain tightening device to be provided. The shaft is made of precision machine from EN-8 material.
- 3.6 MS "B" class pipe (40 mm dia.) railing of adjustable design for bags on one side of conveyor. The railing height is approximately 800 mm and it is provided with intermediate vertical railing supports

- 3.7 Supporting frame made from MS channel 100 x 50 mm and 10 mm thick MS plate, at discharge end for conveyor and for mounting driving geared motor.
- 3.8 Bolts, nuts, washers are required for assembly, for fixing motor, guard, supporting frame at discharge end and anchor type foundation bolts for grouting supporting stands on floor.
- 3.9 The driving electric geared motor of suitable KW and RPM, to be horizontal foot mounted type with helical gear and minimum service factor of 1.5. Geared motor is provided with key in the driven shaft, oil level indicator, oil filling plug, oil breather and drain plug. Suitable grade gear oil for first charge of geared motor will be filled into the gear motor. **Electric motor should be EFF3.**
- 3.10 Drive parts for chain drive to conveyor including drive and driven sprockets of suitable teeth, inch simplex chain, chain guard from 2 mm thick MS sheet.

TWIN ROTOR JUTE TWINE REMOVER

1.0 Functional requirement:

It is used as a pre-cleaning machine to remove jute strings from granular and floury bulk materials in the intake section of cattle feed plant.

2.0 Technical specification & scope of supply:

- 2.1 The machine is consisted of a horizontal, twin rotating shaft with extended nail like attachment in an enclosed casing with suitable size flanged inlet and outlet.
- 2.2 The machine is completed with foot mounted horizontal motor and driving part etc.
- 2.3 Main body is made from minimum 3 mm thick MS sheet/GI sheet
- 2.4 Rotor of the machine to be made from 12 mm dia.
- 2.5 MS rods with 5 mm thick MS plate at both ends, to form two concentric circles.
- 2.6 Complete machine to be of dust free, heavy duty. Two extra rotors will be supplied as a spare.
- 2.7 Necessary bolts, nuts, washers etc. are provided for all internal connections and for fixing on wall/steel structure.

“Z” SHAPED MAGNET

1.0 Functional requirement:

It is used in feed plant to arrest the ferrous impurities from free flowing granular and flourey bulk materials

2.0 Design requirement:

2.1 Operation – Continuous

Convey condition: Vertically gravity drop

Gauss value: minimum 4000 gauss

Magnet type: Plate type permanent magnet

MOC - SS 304 with 3.15 mm thick

Inlet & Outlet size - 600 MM X 200 MM

3.0 Technical specifications & scope of supply:

3.1 Method of operation:

During the normal operating condition, the magnets are kept touching the chute surface. When the raw material is feed inside the chute surface from the elevator, the iron particles present in the raw materials stuck up on the surface of the chute.

3.2 The unit is fabricated from SS 304 plates of minimum 3 mm thick in diamond shaped chute. On each section of chute, a permanent magnet (magnetic strength minimum 4000 gauss) is housed in stainless steel 304 enclosure with heavy duty hinges and magnet to be swing away from the body of chute by pneumatic air cylinder after a pre-determined time through signal from a PLC. Cleaning cycle of magnet should be fully automatic. Ferrous impurities to be collected in a separate steel hopper at ground floor through gravity pipe and pneumatic two-way flap. Material is to be guided through different chute regularly.

3.3 The magnet is designed for uniform high intensity magnetic strength across the entire surface of magnets. The assembled magnet will remain in contact with the surface of the plate on each chute.

3.4 Counter flange at both inlet and outlet in SS 304 material.

3.5 The unit is completed with air cylinders, solenoid valves, hose nipples, hose pipes etc. with fixing brackets, magnets etc.

BINS AND HOPPERS

HOPPERS AND STORAGE BINS

These are used in the feed plant for storing materials as per the requirement of process flow.

These shall be fabricated from mild steel plates /profile ribbed steel sheets with welded/bolted joints wherever required for holding capacity with stiffening arrangements. However, main body shall be fabricated from minimum 3 mm thick MS sheets.

ASPIRATION EQUIPMENT

ASPIRATION UNIT

1.0 Functional requirement:

This is used to minimize the generation and spread of dust while transferring ingredients in elevator to bins/hoppers.

2.0 Design requirements

Application	:Dust Aspiration systems from elevator
Dust nature	:Free flowing, Nonabrasive.
Bulk density	:500 kg/m ³ .
Dust load	:10gm/m ³ max.
Dust discharge	: In the dust generating equipment only.
Equipment required	:Reverse pulse jet pleated cartridge type with centrifugal suction fan.

2.1 The machine to be of modular type air jet filter. The operation principle is sucking of powder air mixture from elevator by vacuum, arresting the powder by filters and shaking the filter bags by purge air in a fixed sequence.

2.2 Blower to be directly coupled with 1.5 HP motor, 2900 RPM vertically flanged-mounted electric motor. Backward curved blades on blower wheel are preferred. Blower wheel to be statically and dynamically balanced. Fan to be provided withoutlet silencer in order to reduce the air noise.

2.3 Air handling capacity of blower to be 1000 cu. m / hr. at suction pressure 180 mmWC.

2.4 Material of construction: Mild steel IS 2062.

2.5 Operation method

Dust laden air enters in aspiration filter and then air escapes through filter bags and dust is deposited on the outside of filter bags. For removing the dust retained on the outside of filter bags, high pressure reverse air shocks are provided at regular intervals to the inside of the filter bags through an automatic electronic/pneumatic control system. Dust to be collected in a bottom cone and discharged to hopper.

3.0 Technical specification:

- Air flow : as per design .
- Filter Fabric : N/w polyester with PTFE membrane bags.

- No. of Filter cartridges : As per the required
- Filter area / cartridge : 16 sqmtr.
- Total filter area : 16 sqmtr.
- Air to cloth ratio : 1.04 m/min.
- No. of solenoid valve : 1 No.
- Max. Operating temp : 80 °C
- Pressure drop : 100-120 mm WC
- Centrifugal fan specs : 1000 cum/hr @ 180 mm WC
- Electric motor : 1.5 HP, 2900 rpm, 3 phase, 440 V, EFF-1
- Impeller balancing : IS 1940 g 6.3
- Mounting of fan : On filter top
- Mounting of system : On hopper top
- MOC of system : MS IS 2062-2 thk.
- Bottom discharge : Back into dump hopper
- Sequential timer digital : 230 V AC (with dust proof enclosure)
- DP switch : 230 V AC
- Control module : with motor starter, timer and DP operation

4.0 Scope of supply:

4.1 Main body fabricated from minimum 3mm thick M.S. sheet, complete with bolted type inspection doors of suitable size, one on each side, for maintenance of filter bags with inlet spout and dust collecting cone.

4.2 Filter bags, complete with sheet steel hinged covers with integral filter-row purge system in IP-65 protection class. Filter bags to be provided with suitable GI cage and fastening system. It should be ensured that bags and cages can be easily removed for cleaning in position by special annular brush.

Purge air header, purging valve, solenoid valves (to be provided in piping manifold) and orifice for a set of filters. Automatic controller in weather proof enclosures (IP-65) of aluminium cast housing for controlling purge air in each filter bag in a fixed sequence by 2 channel sequence timer for shacking of filter bags as required for air jet filters. All control units / purging valve / solenoid valves etc. should be suitable for 230 V AC supply. All the wiring between timer box and solenoid valves etc. should be of PVC insulated copper conductor.

Suitable size blower with 1.5 HP with 2900 RPM electric motor of vertically flanged mounted type to be fitted on top of the jet filter for suction of air through filter bags. The electric motor shall be of TEFC, squirrel cage induction type, degree of protection IP – 55 with class “F” insulation, suitable for 415 V (+/- 10%), 50 Hz (+/- 5%), and 3 phase AC supply.

Motor shall be Efficiency - 3

The unit to be complete with electronic/ pneumatic control apparatus having provision for adjustable bag cleaning cycle and the length of the cleaning pulses, pressure reducing station for air supply to control system, steel supporting legs etc. as per requirement.

The housing to be complete with Filter cartridges, Flow enhancer venturis, mounting flange with holes, Online pulse cleaning arrangement with so-

lenoid valve, Small compressed air reservoir, Safety valve, Drain valve, DP switch, Magnehelic gauge, Digital sequential controller, Centrifugal fan with drive motor eff-1, Fansilencer, Control module with local cabling, Protection guard, Leak proof maintenance door, Bottom plenum for suction with wire mesh type sieve, FRU etc.

5.0 Special accessories:

Fan with outlet silencer (Drop of silencer 20-25 mm WC) Cabling between control module and motor + valves Protection guard for solenoid coil / pressure gauge/safety valve Bottom suction plenum with sieve to trap lumps / bags / plastics going into aspiration unit.

SLIDE GATES & DIVERTERS

PNEUMATIC SLIDE GATE

1.0 Functional requirement:

It is used in feed plant for discharging/accumulating solid ingredients in the hopper/bin/mixer.

2.0 Design requirement:

2.1 Size: Suitable

2.2 Gate to be operated by air cylinder and mechanism of gate operation should be designed in such a manner that the time taken for gate opening and discharge of one ton material of hopper is less than 45 seconds. No leakage of powder should be there while gate is operating.

2.3 Material of construction – M S Plate IS 2062

2.4 Required quantity of compressed air for gate operation would be made available at 3 to 5 Kg/sq.cm Pressure through 15mm NB pipe.

3.0 Scope of supply:

3.1 Main body from 3 mm thick plates.

3.2 Gates to be fabricated from 5 mm thick sheet with inlet & outlet having flanges.

3.3 Gates shall be pneumatically operated & shall be complete with **reed switches** to indicate the position of the gate to centrally located PLC in control room.

3.4 For pneumatic gates suitable size, air cylinder (double acting) & rating solenoid valve shall be provided.

3.5 Wherever required, pneumatic gate shall be provided with slots/ stoppers and control mechanism to control the flow rate of material rather than only open and close.

3.6 Bolts, nuts, washers and felt packing 5 mm thick for connection at top and bottom and internal connections.

PNEUMATIC OPERATED TWO WAY FLAP

1.0 Functional requirement:

It is used for diverting the flows of material by pneumatically flap.

2.0 Design requirement:

Size: Suitable

2.1 Flap to be operated by air cylinder and mechanism of flap operation should be designed in such a manner that the time taken in flap opening and discharge of one ton material of hopper is less than 45 seconds.

2.2 No leakage of powder should be there while flap is operating.

2.3 Design will be of 55 degree symmetric type.

2.4 Material of construction:

Frame: MS 3 mm thick plate.

Slide plate: MS 5 mm thick plate.

Flange: 50 x 5 mm thick MS flat.

3.0 Scope of supply:

3.1 Main body is made of 3 mm thick plates.

3.2 Flaps to be fabricated from 5 mm M.S sheet with inlet & outlet having flanges with counter flanges.

3.3 Bolts, nuts, washers, and felt packing 5 mm thick for connection at top and bottom and internal connections.

3.4 Reed switches to be provided for cylinder of two-way flap to indicate the current position of the flap and it should be in communication with the PLC installed at control room.

MOLASSES STORAGE TANK (1000 MT)

1.0 Functional requirement:

This is required for storage of molasses in bulk.

2.0 Design requirement:

2.1 Capacity of tank – **1000 MT.** (molasses bulk density 1.4 ton / cum).

2.2 Type - Molasses storage tank is to be welded type, vertical and cylindrical shape

2.3 Material of construction - Mild steel.

2.4 Tank to be fabricated at project site with welded construction on foundation

Boiler:

Suitable capacity wood boiler of standard make to produce the steam requirement to produce 12.5 TPH pellet feed

MOLASSES HEATER

1.0 Functional requirement:

This is used for heating and intermediate storage of molasses before feeding to molasses mixers.

2.0 Design requirement:

2.1 Capacity of tank – **3 MT.** (molasses bulk density 1.4 ton / cum).

2.2 Type - Molasses day tank is to be welded and bolted type, cylindrical shape

2.3 MOC of tank - Mild steel.

2.4 MOC of heating coil – Heavy duty MS “C” Class pipes. It is to be fitted in the tank in such a way that uniform heating of molasses to be there by circulation of steam in the coil. It is to be provided with steam inlet, condensate outlet and pressure release valve connection.

2.5 Tank to be fabricated with welded and bolted construction with Leak-proof design.

2.6 Complete tank to be provided with 50 mm glass wool insulation and mild steel sheet 2 mm (minimum) thick cladding.

2.7 Inside of the tank to be cleaned by sand blasting and then epoxy painting. All outside surfaces are to be provided with two coats of heat resistance primer prior to insulation.

PELLET COOLER DUCTING

Ducting from pellet cooler to pellet cooler blower, via the cyclone, to be made of **SS304 of minimum 1.25 mm thickness and 300 mm diameter.** It shall be completed with transition pieces, bends etc. Also supporting clamps (made of GI flat) are to be provided as part of ducting.

SILENCER FOR BLOWER

This will be fixed at the outlet of pellet cooler blower, to reduce the noise level to 85dB at 1 m distance.

This will be of double layer cylindrical construction with sound absorbing material between the two layers. The inner cylindrical shell will have perforation of suitable size. The cylindrical shells will be made of **1.6 mm (minimum) thick GI sheet**. Flanges with counter flanges, gaskets and nut-bolts will be provided for both ends of silencer

PELLET COOLER CYCLONE

This is required for separation of dust (powder feed) from the exhaust air of pellet cooler.

It has air-lock for controlled discharge of the powder collected at bottom.

The powder free air is sucked out from the top by a blower and discharged outside the plant.

The cyclone will be made of **SS304 of minimum 2 mm thick** sheet and will be fabricated in two/three pieces for ease of transport.

The inlet/outlets will be provided with flanges and matching counter flanges of SS304 along with gaskets.

BAGGING MACHINES (NET WEIGHER)

It is used for filling of weighted finished feed in gunny/polyester bags.

Machines shall be load cell operated having arrangement for dribble and fast filling to achieve high accuracy of filling. Machines to be complete in all respects including its own panel & system for indicating the no. of bags filled, quantity of material being filled in each bag etc. the m/c shall be net weigher type along with pneumatic bag closing device.

STITCHING MACHINE

This machine is required for stitching of gunny/polyester bags after filling of the finished feed.

It is mounted on a steel column, suitable for two-thread double chain and adjustable stitch length. Column to have arrangement for fixing stitching head at any height and also for fixing other accessories such as bag feed-in device, labelling device and switch box containing all necessary switching and protecting elements.

One stitching head is fixed on the vertical steel column and one loose head is will be supplied extra.

AIR LOCKS

It is used as dust collectors at outlet of cyclone.

MOC: **Stainless steel (SS304) fabricated body.**

Rotor is wane type, fabricated from stainless steel (SS304) plate. Rotor to rotate within the housing with very close tolerance with self-lubricating bearings. Air lock to be have flanged type inlet/outlet. Nylon wire cleaning brush is provided at outlet. Air lock to be run by suitable horizontal foot mounted geared motor. If function desires, adjustable UHMW wear pads to be used in rotor.

CENTRIFUGAL FANS (PELLET COOLER BLOWER)

It is required for pneumatic conveying of material, for dust control systems and for discharging hot air generated in pellet cooler in feed plants.

The sheet steel construction housing and the impeller of the centrifugal fans to be mounted on a sturdy steel base. The impeller to be fitted with special blades and designed for high speed service, statically and dynamically balanced for minimum vibrations. Vibration dampers/anti vibration pads to be provided for further reducing the vibrations. Blower to have silencer/Casing with anti-noise coating for silent operation. Preference to be given for direct coupled motor drive. Blower to have high efficiency to give designed pressure and air volume. Main body of centrifugal fans should be made from minimum **3 mm thick mild steel sheet.**

Equipment Makes:

1.Key Equipment (Hammer mills withfeeder, Pellet Mills, its feeder and Conditioners, Pre-mix Batch Mixer, and Main Batch Mixer, Pellet Cooler

BHULLER/ANDRITZ/SPECTOMS/CREMACH/POWERMECH/OEM

2.. Aspirationsystem for elevators, Dumping hoppers & conveyors

BHULLER/ANDRITZ,SPECTOMS, CREMACH, POWERMECH/OEM

3.Electronic Bagging Machine.

CRONOS RICHARDSON / BOSCH / TECHNO-WEIGH / C J INDUSTRIES / IIM / EQUIVALENT.

4.Galvanized steel Pre-coated Profile

Sheets for side & roof cladding INTERARCH/ POLYSTEEL (DENDRO) UNIMETAL / METACOLOUR / IS-PAT/ TIGER / KIRBY/TATA BLUESCOPE

5.Process Control Valve

SAMSON / ROSEMOUNT / KROHNE MARSHALL/ FESTO

6.Structural Steel

SAIL / TISCO /RINL/IISCO/ESSAR

7.Level Transmitter & indicator

E&H / ROSEMOUNT / SIEMENS

8.Temperature/ Pressure Transmitter

Radix/ E&H/RTD PYROELETRIC / ALTOP / TOSHNIWAL / RADIX/WIKA

9.PID Controller

YOKOGAVA / CHINO / TATA HONEYWELL / SIEMENS / ROSEMOUNT

10.Level Switch (float type for liquid)

E&H / ROSEMOUNT / HONEYWELL / SIEMENS / EMERSON.

11. Level Switch/Sensor (Bins and hoppers)

IFM /SAPCON, INDORE/ BAUMER / ALLEN BRADLEY / E&H /FESTO /EQUIVALENT.

12.Vortex / Magnetic Flow meter

E&H / ROSEMOUNT / YOKOGAWA / FORBES MARSHALL / MANAS MICROSYSTEMS / EMERSON.

13.Control Valve

DANFOSS / DEMBLA / SAMSON / AVCON / TOSHBRO / FISHER XOMOX / MASONEILAN/FESTO

14. Pressure & Temperature Gauge

FIEBIG / H GURU / WAREE / PRICOL

15. Dual type Pressure / temp gauges

FIEBIG / H GURU / WARREE / PRICOL

16. Temperature sensors / digital indicator / controller / recorder

YOKOGAWA / TATA HONEYWELL / RADIX / PYROTECH / E&H / EMERSON

17. Intelligent Motor Protection relay

ABB / SCHNEIDER / ROCKWELL / SIEMENS.

18. VFD

SIEMENS / ALLEN BRADLEY / DANFOSS / ABB

18. Electronic Soft Starter

SIEMENS / ALLEN BRADLEY / ABB / SCHNEIDER / DANFOSS.

19 Load manager / Power / Energy

Monitor ALLEN BRADLEY / SIEMENS / ABB / ENERCON

20. Voltage / Current / Energy / Powerfactor Transducer

RISHABH / ENERCON

21. PC (Personal Computer)

COMPAQ / HEWLETT-PACKARD / IBM LENEVO / DELL

22. PLC / DCS System

SIEMENS / ALLEN BRADLEY / SCHNEIDER

23. Automation System

SIEMENS / ROCKWELL / TECHNOWEIGH / IIM / SCHNEIDER

TEFC Electric Motors & Motor forged motors

24. BHARAT BIJLEE / SIEMENS / ABB / CROMPTON / KIRLOSKAR

25. Geared Motor / Gear Box

PBL / POWER MASTER / RADICON / SHANTHIGEAR / BONFIGOLI / EURO DRIVES / ROTOMOTIVE / NORD

26.Air Circuit Breaker

L&T / SIEMENS / ABB / SCHNEIDER

27.MCCB, MPCB

L&T / SIEMENS / ABB / SCHNEIDER

28.Contactors

L&T / SIEMENS / ABB / SCHNEIDER

29. Starter Overload Relays

L&T / SIEMENS / ABB / SCHNEIDER

30.Timers Electronic

L&T / SIEMENS / ABB / SCHNEIDER

31.Switch disconnecter Fuse

L&T / SIEMENS / ABB / SCHNEIDER

32.MCBs

SIEMENS/ L&T-HAGER / MDS-LEGRAND / GE

33. Push Buttons

ESBEE / SIEMENS / GE / VAISHNO / TEKNIC

34.Indicating Lamps

L&T / SIEMENS / VAISHNO / TEKNIC / ESSEN

35.Digital Ammeter & Voltmeter

ENERCON / IMP / MECO

36.Analog Ammeter & Voltmeter

RISHABH / IMP / MECO / AE

37.Digital Energy Meter

ENERCON / L&T / CADEL / AE

38.Analog Energy Meter

UNIVERSAL / HAVELS / JAIPUR

39.Power Factor Meter

RISHABH / IMP / MECO / AE

40.Current Transformer

KAPPA / MECO / AE / IMP / INDCOIL

41.LT Power Cables

CCI / FORT GLOSTER / HAVELS/ FINOLEX / RRKABEL/LAPP KABEL

42. LT Copper Control Cables

CCI / RPG ASIAN / FINOLEX / FORT GLOSTER / RRKABEL/HAVELS

43. Signal & Instrument cable

LAPP KABEL / RR KABEL / THERMOPAD

44. PVC Insulated Copper wire (forpanel)

FINLOEX / RRKABEL

45. Power Capacitors

MALDE / MEHER / SIEMENS / EPCOS/ MOMAYA.

46. APFC Relay

L&T / BELUK / MECO

47. Cable Tray

INDIANA / MEK / SUNRISE / SUPER / PILCO/any approved

48.Isolating Switches

SIEMENS / L&T

49 .HRC fuses

L&T / SIEMENS

50. IP 55 boxes for motor isolators, pushbuttons, junction boxes etc.

HENSEL / HANSU

51.Terminal Blocks

WAGO / LAPP INDIA / CONNECT WELL / ELMEX

52. Pipe-in-pipe earthing

FAST EARTH/EQUIVALENT

53. Electronic Load Manager

ENERCON / KRYKARD / L&T

54. Selector Switch

KAYCEE / SALZER

55.Cable Glands/Lugs

COMET / EX-PROTECTA / DOWELS / LAPP KABEL / BRACKO

56.Servo Voltage Stabilizer

SUVIK / APLAB / NEEL / KRYCARD

57.UPS

EMERSION / APC / HI-REL / DB ELECTRONICS / APLAB

58.SOFT MIMIC PANEL

PANASONIC/LG/SAMSUNG

59.SMF Battery

AMCO / YUASA / EXIDE

60. Water Valves (Butterfly / Ball)

SAUNDERS / AUDCO / INTERVALVE / BDK / LEADER

61.Water Valves (Diaphragm)

SAUNDERS / BDK

62.Non-return Valve for water (wafertype)

AUDCO / INTERVALVE / BDK

63.Water Foot Valve

KIRLOSKAR / GG / LEADER

64.GI Pipes for water

TATA / MST / JINDAL

65.MS Pipes for steam & condensate

TATA / JINDAL / KALYANI / MST

66. GI "C" Pipes for air.

TATA / JINDAL / KALYANI / MST

67. NRV for Air Line

INTERVALVE / AUDCO / LEADER

66.Solenoid Valve for Water line

AVCON

67. Water Flow Meter

FORBES MARSHALL/DASHMESH / ANAND ASAHI / KENT / E&H / EMERSON

68.LP Steam / condensate Valves

AUDCO / CRESCENT / LEADER / THERMAX / BDK / FORBES MARSHAL

69. Steam relief valve, traps & strainers

SPIRAX / THERMAX

70. Steam Pressure Reducing Valve

SPIRAX / MAZDA / THERMAX

71. Steam Pressure Reducing Station

JN MARSHALL (SPIRAX) / THERMAX

72. Air Compressor

INGERSOLL RAND/ ATLAS COPCO/ELGI

73.Refrigerated Air Dryer

GEM EQUIPMENTS/ SABROE / CHICAGO PNEUMATIC / HIRAS/ INGERSOLL RAND/ ATLAS COP-
CO/PURIFAIR/ELGI

74.Air lines accessories

SHAVO NORGEN / FESTO / AIRMATIC / LEGRIS / NUCON/AIRMAX/JANATICS

75.On Line Metal Detector

MOS TECHNOLOGIES/ DAS ELECTRONICS / EQUIVALENT

76. On Line Check Weigher

MOS TECHNOLOGIES/ DAS ELECTRONICS/ A & D Japan / EQUIVALENT

Auto Drain Valve

77. ULTRA FILTER / ZANDER/JORC

78. Resin bonded mineral wool

LLOYD / UP TWIGA / MINWOOL / ROCKWOOL

ACP CLADDING ALUCO BOND/ REYNOBOND/ ALPOLIC

GENERAL TERMS AND CONDITIONS OF THE TENDER

Eligibility and Qualification requirements

The bidder must meet the following minimum qualification Criteria

- The bidder in the same name and style should be in business at least for last three financial years at time of bid opening. In case of change of name of bidder by merger/acquisition/change in status the bidder may be eligible based on the documentary evidence.
- The bidder in the same name, style, must have a revenue turnover of Rs. 20000 lakhs in the previous three audited financial years OR Rs.2500 lakhs in either of the three previous audited financial years OR Rs.3500 lakhs in any one of the three previous audited financial years.
- The bidder in the same name, style must have successfully designed, supplied, installed and commissioned number of projects of ANIMAL FEED PLANT over the last 5 financial years as a single order: Three projects of 500 TPD Animal Feed plant and above OR Two projects of 700 TPD Animal Feed Plant and above
- In addition to the above, the following information/documents should also be submitted along with the bid by the bidder for evaluation / de-termination of their eligibility.
 - a) Copy of TDS certificate issued by the clients to substantiate the claim for the value of works executed in the private sector.
 - b) All the bidders must submit completion certificate along with copy of the PO towards proof of their eligibility and qualification requirements.
- Even though the bidder meets the specified criteria, the bid may be disqualified in case the bidder has:
 - a) Made untrue or false declaration in the forms, statements and attachments submitted in proof of their qualifications.
 - b) Record of poor performance such as abandoning the works, not properly completing the contract, inordinate delays in completion or financial failure etc.

Other terms

- All the equipment must have the warranty as per industrial standards / JICA project requirements
- Suppliers provide the DPR with civil drawings
- Civil drawings must include RMG also
- Schedules of the workflow must be enclosed