

UPGRADATION AND MODERNIZATION OF COCHIN FISHERIES HARBOUR

VOL. V - SCOPE OF WORK AND TECHNICAL SPECIFICATIONS OF MACHINERY AND EQUIPMENTS

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A. GENERAL SCOPE OF WORK

1. The general character and the scope of work for Machinery and Equipments to be carried out under this contract is Illustrated in Detailed Scope of Work and Technical Specifications. The Contractor shall carry out and complete the work as per the Scope under this contract in every respect in conformity with the contract documents and with the direction of and to the satisfaction of the Owner's site representative. The Contractor shall furnish all labour, materials and equipment as per the Scope including transportation and incidental expenses necessary for supply, installation, testing and commissioning of the complete system. This also includes any material, equipment, appliances and incidental works not specifically mentioned herein or noted on the drawings / documents as being furnished or installed, but which are necessary and customary to be performed under this contract. The scope of work shall generally comprise, but not limited to the following:
 1. Hydraulic Pallet Jacks : 20 Nos.
 2. Weighing Scales : 30 Nos.
 3. Weighbridge : 1 No.
 4. Tripod with Winch : 40 Nos.
 5. Conveyor System : 20 Nos.
 6. Standardised Crates : 30,000 Nos.
 7. Dustbins : 100 Nos.
 8. Chill Room : 3 Nos.
 9. Electronic Display Boards : 4 Nos.
 10. Mechanised Cleaning vehicle : 4 Nos.
 11. Plastic pontoons : 200 Nos.
 12. Boom Barrier for gate : 2 Nos.
 13. IT Infrastructure Equipments like Laptops and Desktops, e-Auction Software, Printers, Servers etc. as per the requirement of ERP.
2. Comply in full with all requirements described in or implied by this specification and with the Conditions of Contract as well as Schedule and Drawings issued as part of the contract documents.
3. The EPC contractor / bidder shall seek clarification and make all necessary enquiries prior to submitting the tender regarding any obscurities or contradictions on or omissions from the specification, related Documents and Drawings. No consideration will be given to cost claims for work arising from the failure to obtain such clarification.
4. Minor civil works like drilling and punching holes and openings in concrete floors, slabs, chasing of brick walls, fabrication of supporting structures, drainage of water from cable trenches, cleaning and clearing of all debris along with electrical works required for the installation of above items shall be in the scope of the EPC contractor.
5. Preparation of execution drawings and as built-in- drawings.

6. Coordination with other contractors with regard to installation of items in Contractors scope.
7. The extent of work services under the contract includes all items as per the scope and specifications, notwithstanding the fact that such items have been omitted from the price schedule. All equipment's and services which are required to complete the intent of the contract shall also be deemed to be within the scope of the contract.
8. All required liaison work in relation to subject scope, follow-up, securing permission to commission the equipment and all related co-ordination with statutory local bodies / agencies is within the scope of the EPC contractor.
9. COMPLIANCE WITH STANDARDS
 - 9.1. STANDARDS: Comply with the requirements of all relevant BIS Standards or equivalent standards regarding equipment design, manufacture, supply and installation whether or not these are specifically mentioned in the Specification.
 - 9.2. ALTERNATIVE STANDARDS: International Standards ISO or IEC which are equivalent to the appropriate BIS Standards may be used. Other standards may be offered as an alternative only if submitted for approval along with the equipment manufacturer's written assurance that they are equal to BS, ISO or IEC Standards.
 - 9.3. DISCREPANCIES: In the event of a discrepancy between the BIS or other standards and the specification, the decision of the Port Engineer will be final.
10. MATERIALS

The materials listed under "APPROVED MAKE" only shall be used. All materials, equipments, fittings etc. used in the installation shall conform to the latest relevant BIS Standards. In case of materials for which standard specifications do not exist, the material shall be got approved by the Engineer-in-charge before start of the work.

B. DETAILED SCOPE OF WORK AND TECHNICAL SPECIFICATION

1. Hydraulic Pallet Jacks

Scope: Semi electric pallet jacks to be used for easy movement of fish within the harbour. It should be electrically operated with Battery and capable of moving loads up to 2.5 tons at a time.

Quantity: 20 Nos.

Specifications:

- Load Capacity: 2.5 Ton
- Fork Length: 1150 mm
- Maximum Fork Height: 200 mm
- Lowered Fork Height: 85 mm
- Outside Fork Spread: 550 mm
- Inside Fork Spread: 230 mm
- Wheel Type: Nylon - Tandem



The electrical supply if to be provided, i.e. 220 V supply for the operation of the machine, the necessary cable, plug and sockets shall be provided at appropriate places by the EPC contractor.

2. Weighing Scale

Scope: Heavy duty weighing scales of at least 1 ton capacity and digital display for weighing fish at various stages of fish movement within the harbour.

Quantity: 30 Nos.

Specifications:

- Accuracy - 100 gm
- Country of origin - India
- Weighing Capacity - 1 Ton
- Warranty - 1 Year
- Display Type - Digital
- Platform Size - 24x24 inch
- Battery Voltage - 6 V
- Material – Steel
- Power Supply Unit



The electrical supply if to be provided, i.e. 220 V supply for the operation of the machine, the necessary cable, plug and sockets shall be provided at appropriate places by the EPC contractor.

3. Weighbridges

Scope: Pit less fully electronic weighbridge with capacity up to 50 tonnes to weigh the trucks / lorries / mini vans. The weighbridge should be able to take high jerk loads and continuous loading. The equipment should be able to scan the vehicle number being weighed.

Quantity: 1 No.



Specifications:

- Platform (10mx3m): Heavy duty steel structure to weigh 50T.
- Platform Material: Mild steel (IS2062) Painted with Epoxy
- Load cell : Compression type Stainless steel, IP68 (Min:20 Ton each)
- Digital weight Indicator: should be able to connect to a computer
- Weighbridge software: Should be able to take all standard reports and vehicle details
- Stamping by Legal metrology: Shall be arranged by the supplier.
- Civil work for the Weighbridge foundation, weighbridge cabin, electric connection, computer, UPS and Printer shall be under the scope of the EPC contractor.

4. Tripod with Winch

Scope: For big fish such as tuna, use of mobile tripod with a winch has been suggested to transport the fish from the hold in order to reduce the effort and time required to offload fish. The material must be lightweight stainless steel conforming to SS 316 grade. The tripod must have a breaking force of greater than 20 kN along with multi attach points for use with fall arrest block and safety lines.

Quantity: 40 Nos.

Specifications:

- Base Radius Range – 41 inches to 68 inches
(1 to 1.5 metre)
- Telescoping adjustable locking legs
- Capacity – 500 kg
- Built-in pulley system
- Specialized safety shoes and leg support chain



- Manually operated winch.
- 90 ft. (27 m) of 3/16" (5mm) galvanized steel wire rope
- 6:1 gear ratio mechanical advantage
- Free-wheel mode
- Built-in fall protection

5. Conveyor System

Scope: Portable and mobile conveyor belts which will carry the fish directly to the auction hall without having to be dragged on the floor. These conveyor systems should be able to change their height depending the requirement and can be used for both, offloading fish from the boat as well as loading the catch on to the trucks. The fishermen can place the either single large fish or crates of small fish on the conveyor system which will transport the catch from the boat to the auction hall which is approximately 4 to 5 metres distance from the berth / jetty where the boats are berthed.



Quantity: 20 Nos.

Specifications:

- 14 feet Boom length x 750 mm width
- M.S. Fabricated frame out of 40 x 40 x 5 angle, 25 x 5 flat runner and 125 x 65 channel mounted on rubber tyre wheels for easy movement.
- Pneumatic rubber tyre wheels will be provided for easy movement - ADV 500 X 19 (For 14 feet Stacker)
- 500 kg / hr handling capacity
- Manually operated winch will be provided for raising and lowering the boom.
 - Minimum delivery height – 3 ft
 - Incline – up to 51 degree
- Kirloskar / Siemens / Crompton or Standard make Electric Motor and Shanti / Radicon / Elecon make gear boxes –
 - Motor H.P 2 Reduction gear size A - 287 or 3.54 inch

The electrical supply if to be provided, i.e. 220 V supply for the operation of the machine, the necessary cable, plug and sockets shall be provided at appropriate places by the EPC contractor.

6. Standardized Crates

Scope and specifications: Standardised rectangular (600 x 400 x 320 mm) Polypropylene (PP) side perforated fish crates of 75 litre capacity for ease in carrying out various activities such as offloading small and medium fish from the boats, loading fish on the conveyor belts, keeping fish before auctioning etc.

Quantity: 30,000 Nos.



7. Dustbins

Scope: Garbage bins with lid made of plastic shall be supplied. These bins should be movable and shall be provided with wheels for easy movement without toppling.

Quantity: 100 Nos.

Specifications:

- 120 Litre capacity
- Plastic Wheel Dustbin
- Dimension: 92x48x55 cm (at least)



8. Chill Room

Scope: The chill rooms are used to store the fish till the auction time or to store unsold fish from the auction to keep products at the temperature range of 0°C to 4°C.

Quantity: 3 Nos.

Specification:

- Semi automatic walk-in type
- Material SS 316
- 3 phase, 415 V
- Power Source: Electric
- Storage Capacity: up to 5 Ton

The electrical supply if to be provided, i.e. 415 V supply for the operation of the machine, the necessary cable, plug and sockets shall be provided at appropriate places by the EPC contractor.



9. Electronic Display Boards

Scope: Rectangular wall-mounted LED display systems for auction hall packing facility, Control room and Food court with computer system for data entry and monitoring including software, cabling, power supply and protection unit in complete, etc.

Quantity: 4 Nos.

Specification: 3 ft x 12 ft LED display



The electrical supply if to be provided, i.e. 220 V/ 415 V supply for the operation of the machine, the necessary cable, plug and sockets shall be provided at appropriate places by the EPC contractor.

10. Mechanized cleaning vehicles

Scope: Ride-on mechanised sweeping machines for cleaning large industrial floors. It should efficiently work on both wet and dry surfaces. These sweeping machines are to be operated with the help of electric power. Should be equipped with large collection Hoppers and in-built powerful vacuum system and have larger filter surface area.

Quantity: 4 Nos.

Specifications:

- Electric vehicle
- 24 V, 250 Ah battery



11. Pontoons

Scope and specification: The Floating pontoons of size 3m in length, 2m width and 0.4m minimum height with a buoyancy of 2 tons per pontoon should be slip-resistant, self draining and the material must be made of plastic.

Quantity: 200 Nos.



12. Boom Barrier for Gate

Scope: Semi-automatic boom barrier with remote unit offers security at the exit and the entry points of fishing harbour as well as control vehicular traffic.

Quantity: 2 Nos.

Specifications:

- Running Time :1-2 sec
- Boom Type: Straight, folded
- Boom Length :3-4 m
- Power: 80 watt



The electrical supply if to be provided, i.e. 220 V supply for the operation of the machine, the necessary cable, plug and sockets shall be provided at appropriate places by the EPC contractor.

13. IT Infrastructure Equipments like Laptops and Desktops, e-Auction Software, Printers, Servers etc.

IT Infrastructure Equipments like Laptops and Desktops, e-Auction Software, Printers, Servers etc. shall be designed by the EPC contractor as per the requirement of ERP (Enterprises Resource Planning) of Cochin Fisheries Harbour Management System like Auction hall activities viz. E-auction, Amount of fish sold, Boat wise details, segregation of fish, Amount realised boat wise / daily wise and submission of report to the Authority. The entire system shall be designed and executed by the EPC contractor.

Chief Mechanical Engineer