

TECHNICAL SPECIFICATIONS FOR DESIGN, ENGINEERING, SUPPLY: TESTING & COMMISSIONING OF RACK & PINION TYPE ELEVATORS FOR BOILER ERECTION.

Equipment:

Electrically operated vertically (up & down) rack and pinion type elevator.

Purpose:

Installation on columns of boiler ~~500~~ 250 MW Units for Hoisting Passengers & Materials.

Qty:

~~500~~ 88 Nos (Two Nos 80 METERS & 06 Nos 60 METER HEIGHT).

Atmosphere: Normally Hot & Dusty with welding activities going all around.

Elevator Particulars:

Pay load capacity - 1000 kg.

Type of loading for which the elevator is to be designed: Passenger-cum-goods.

Type of elevator - Rack & Pinion.

Speed of elevator - 28 meters/Min. (approx).

Total Travel - 80 Meters & 60 METERS.

Numbers of Floors/Landings - Ground + 6 for 80 METER HEIGHT & Ground + 5 for 60 METER HEIGHT.

Specification of Components:

- Enclosures - Structural steel with wire mesh for ground enclosures only.
- Cabin body - Structural Steel
- Cabin Platform: Chequered aluminium plate (suitable size).
- MAST - Modular System type mast of ERW tubes of steel with close tolerances for coupling sections.
- Drive Type: Squirrel cage motors shall be totally enclosed fan cooled induction type with electro magnetic brakes and reduction gear box. Suitable for this specification.
- Cabin doors: Two separate doors preferably sliding one for entry and one for exit with Electrical / Mech. Interlocks.

Method of Control: Push Button / Joy stick

Operation - 415V : 3 phase A.C. supply with trailing cable on guides.

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Power & Control Cable (fixed) – FRLS PVC insulated of copper cables.
Power Cable (trailing) ~~(COPPER)~~ PVC insulated of 1100 V grade with suitable cable reeling drum.

Electrical Panel (Controls):

All electrical control devices shall be in enclosed panels with IP-55 protection and fitted broadly with followings:

Momentary-contact push button for hoist/lower control.

Reversing combination motor starter with 3 phase overload relay for motor protection of approved make (GE/Siemens/ L&T) and control circuit shall have a miniature circuit breaker of approved make (Siemens/GE/L&T. With Single Phasing Preventer).

Hour meter to indicate total operational hours.

Electrical and mechanical interlocks on cab. Access door.

An ultimate 3 phase over travel protection limit switches to cut off power and control supply in the event of over travel.

Reverse phase relay to prevent operation of cab. With improper phase rotation or failure in any phase in the power supply.

Trailing cable shall be intermittently supported by brackets on the cage and mast guides to avoid cable rapture.

One base panel to be mounted at ground floor with ONE-OFF selector switch, main contactor; switch fuses unit (lockable type). Control switches for Operation: Selector switch for Remote / Local operation and Power-On Indication. The panel shall have drip shield and provision for padlocking.

Cab. Shall be controlled by a semi-automatic control system with push buttons for 'UP'- 'DOWN' & 'STOP' 'Next landing. Cab shall be furnished with a suitable 3 pin rounding type receptacle, emergency alarm/hooter in cabin and ground floor end use. Suitable call back device shall also be provided between cabin and ground/top level.

The control panel for elevator mounted on cabin shall have drip shield and suitably protected from dust/water etc.

The Power-On indication shall be available on cabin panel, besides electrical fault indicators.

Suitable interior lighting and emergency light with cabin fan.

Safety Devices:

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- a) Elevator shall be provided with totally enclosed type safety device and its operation should be independent from drive shaft and drive pinion.
- b) Suitable safety arrangement should be provided to bring the cabin down gradually in case of power failure. The release device should be operative from cabin itself.

Painting:

Painting shall be as per relevant IS standard suitable for operation in hot and dusty environment.

Buffers:

Sufficient quantity of buffers of spring loaded / hydraulic type shall be fitted with cab. The buffers should be capable for stopping the cab. Without permanent damage / deformation to themselves.

Cab floor size (Inside):

1.3M x 2.0M x 2.0M (Approx.)

Foundation drawing & installation supervision to be provided by the party as per the site requirement.

Load Test at works.

Full load test & Drop TEST.

Shankar

Rajesh

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