

SPECIFICATIONS FOR HORIZONTAL OPENWELL SUBMERSIBLE PUMP SET COMPLETE WITH ACCESSORIES

The SITC (Supply, Installation, Testing & Commissioning) of proposed pump sets shall be high discharge completely submersible type water pump of horizontal version and shall be mounted in Under Water Tank. These pump sets shall deal the raw water.

I. SCOPE OF SUPPLY:

- 1) Pump & Motor set
(Pump & Motor set shall be mounted in Under Water Tank and secured with proper clamping arrangement for handling purpose)
- 2) DOL or Star Delta Starter suitable to the pump set
- 3) 50 to 40 mm dia. delivery hose of approximately 40 metres length
- 4) Suitably rated, PVC insulated Flexible copper cables for Power & control applications - Keep the length of the pump set cable such that there is no joint allowed in Under Water Tank.

II. TECHNICAL DETAILS OF PUMP & MOTOR:

| S.No | PARAMETER | Details |
|------|--|---|
| 1. | Nature of liquid to be handled | raw water |
| 2. | Density of liquid to be handled | 1.00 Kg/ Cm ³ |
| 3. | PH value of the liquid | 6 (min) |
| 4. | Maximum size of solids allowed | 5 mm |
| 5. | Ambient temperature | 50 Degree C. max. |
| 6. | Relative humidity | Upto 100% |
| 7. | Working hours per day | 8 hours |
| 8. | Pump shall be able to within the head of | - 25% to + 15% of rated head |
| 9. | Discharge outlet size | 50 mm |
| 10. | Service life of bearings shall be | 25,000 hours (minimum) |
| 11. | Motor Type | 3 Phase totally enclosed type squirrel cage induction Motor |
| 12. | Supply Voltage | 415V, +15% / -10%, 3 Ph., 50Hz. |
| 13. | Degree of Protection | IP-68 |
| 14. | Duty | S-1 (continuous) |
| 15. | Class of Insulation | 'B' Class |
| 16. | Thermistors | - |
| 17. | Moisture Sensor | - |
| 18. | Dry run protection | Shall be provided |

-2-

III. RATING OF SUBMERSIBLE PUMP SETS REQUIRED:

| S.No. | Head in metres | Discharge in LPM |
|-------|----------------|------------------|
| 1 | 18 | 276 LPM |
| 2 | 30 | 210 LPM |
| 3 | 36 | 120 LPM |
| 4 | | |
| 5 | | |

MATERIAL OF CONSTRUCTION

Impeller : Cast Iron
Motor Body : Cast Iron
Delivery Casing : Cast Iron
Shaft : Stainless Steel

APPLICATIONS

Industrial service water supply schemes.
Domestic and community water supply.
Construction Site.
Irrigation in horticulture & agriculture.
Water supplies for high rise building.

Note: * Marked pumps are ISI certified and ** Marked pumps are star rated. Performance applicable to liquid of specific gravity 1 and Viscosity as of water.

FEATURES

Wide Voltage Design

The motor is designed to withstand wide voltage fluctuations from 200 to 400 volts and reduces motor burning in low voltage.

Flatter Efficiency Curve

Minimum variations in efficiency during entire operating range increases the utility of pump set for variable conditions.

Dynamically balanced rotating parts

Minimum vibrations protect components from damages during the operations, consistent performance as concentricity is maintained

Replaceable Wearing Parts

All wearing parts within the pumps are easily accessible and replaceable which provides ease of maintenance thereby extending the life of the pump.

Easy maintainable designs

Easy maintainable design and better interchangeability of components so that pump can be serviced even at remote locations by semi-skilled technicians.

CED – Cathode Electro Deposition Coating

CED is the latest coating technology for corrosion resistance with uniform coating, provides 5 times more protection over conventional painting, resulting in longer life

High efficiency and energy saving design

Innovative design manufactured at state of art plant, delivers optimum efficiency at lower energy consumption resulting in significant cost savings.

Advanced Water Cooled Motors Designs

The motor is filled with potable water, protects from overheating and facilitates smoother and trouble free operation for the years

Accessories:

Submersible pump set complete with all accessories like portable stand, Cable size according to pump rating and cable length should be such that no joint is made inside the underground water tank. submersible copper cable without joint and 30 Mtr. Long runs required , enclosed with suitable pipe minimum 50 mm dia or next higher size recommend by the pump mfg. with special /fittings /clamps/base plate etc. shall be provided.

Material of construction shall be as below:

- **Pump impeller** : Stainless Steel /Graded Cast Iron & Dynamically balanced.
- **Casing** : High Grade cast iron.
- **Wear Rings** : High quality abrasion resistance Bronze.
- **Shaft** : Stainless Steel of adequate diameter to ensure rigidity and ground to close tolerances.
- **Cable Sealing Arrangement** : Designed so that no bore well water with sand can enter the motor.
- **Motor Body** : Cast Iron /Stainless Steel
- **Journal Bearings** : Leaded Bronze and Stainless Steel, Water Lubricated, having high load bearing capacity.
- **Thrust Bearing** : Carbon Vs Stainless steel and water lubricated to withstand high axial thrust loads.
- **Fasteners**: Stainless Steel
- **Portable Stand (Skirt Base)** :M.S. fabricated & epoxy coated

HANDING OVER DOCUMENTS

The supplier shall submit following:

1. GA drawing
2. Foundation layout
3. Rating and Diagram Plate
4. Data sheet indicating results of tests
5. Test reports
6. O & M manuals

METHOD OF MEASUREMENT

Supply of the D.G Set including transport to site, loading and unloading etc. as specified will be treated as one unit for measurement and payment.

TRANSPORT, DELIVERY & STORAGE

The prices shall be F.O.R. site basis including packing & forwarding charges. The quoted price must include all the costs for necessary mode of transportation up to the final location of PUMP SET or site store. All incidental expenses during transportation shall be part of quoted prices including transit insurance. The charges for loading and unloading of equipments at site should form part of offer(Included).

The transportation for any auxiliary item or detachable part of equipment should be simultaneous and carry necessary instructions for assembling and storage requirements.

All metal surfaces shall be thoroughly cleaned of scale, rust and grease etc. Prior to painting. Cleaned surfaces shall be given two coats of primer and prepared for final painting. Final finish shall be free from all sorts of blemishes.

The equipment shall be shipped to site suitably packed to prevent any damage. Each package shall have labels to show purchaser's name, purchase order and equipment no. suitable lifting lugs etc. shall be provided and lifting points shall be clearly marked on the package. Packing shall be suitable for storage at site for a minimum period of 6 months

GUARANTEE & WARRANTY

The Bidder shall stand guarantee for the performance of entire equipment and components for the period mentioned earlier (min 1 Year) from the date of handover. The Purchaser also reserves the right to use the rejected equipment or part thereof until the new equipment meeting the guaranteed performance is supplied by the Bidder.