



Bharat Heavy Electricals Limited

(High Pressure Boiler Plant)

Tiruchirappalli – 620014, TAMIL NADU, INDIA

CAPITAL EQUIPMENT/ MATERIALS MANAGEMENT

An ISO 9001
Company

ENQUIRY	Phone: +91 431 257 7938 Fax : +91 431 252 0031 Email : tvenkat@bheltry.co.in Web : www.bhel.com
NOTICE INVITING TENDER	

TWO PART BID	Enquiry Number:	Enquiry Date:	Due date for submission of quotation:
Tender to be submitted in two parts.	2631300008	30.03.13	30.04.13


You are requested to quote the Enquiry number, date and due date in all your correspondences. This is only a request for quotation and not an order.
Please note that under any circumstances both delayed offer and late offers will not be considered. Hence vendors are requested to ensure that the offer is reaching physically our office before 14.00 hrs on the Date of tender opening.

Item	Description	Quantity	Delivery (Item required at BHEL on)
10	25 Microns Water Filter as per the technical specification, BHEL commercial terms & conditions applicable (to be downloaded from web site www.bhel.com or http://tenders.gov.in)	1 No.	30.10.13

Important points to be taken care during submission of offer

1. Checklist to be duly filled and enclosed along with your offer, failing which the offer will not be considered for evaluation.
2. Subsequent to the hosting of this Enquiry, any corrigendum to the Enquiry that may be hosted in the BHEL Web-site as well as Government Tenders-portal shall be viewed by the vendors regularly to know the details of corrigendum. In case if any vendor without seeing the corrigendum quoted as per original Enquiry and intimate that they have wrongly quoted will not be considered and rejected. However as per the appropriate Policy of BHEL action will be taken on them in this regard.

BHEL's General guidelines / instructions including bank guarantee formats and list of consortium banks, commercial terms check-list can be downloaded from BHEL web site <http://www.bhel.com> or from the Government tender website <http://tenders.gov.in> (public sector units) Bharat Heavy Electricals Limited page) under Enquiry reference "2631300008".

<p>Tenders should reach us before 14:00 hours on the due date Tenders will be opened at 14:30 hours on the due date Tenders would be opened in presence of the tenderers who have submitted their offers and who may like to be present</p>	<p>Yours faithfully, For BHARAT HEAVY ELECTRICALS LIMITED</p>  <p>Sr.Manager / MM / Capital Equipment</p>
---	--

T. VENKATESWARAN
Senior Manager
Capital Equipment / MM
BHEL, Tiruchirappalli - 620 014.

Technical Specification for 25 micron water filter

Objectives :

- To improve the water quality using 25 micron filter.
- Implementation of advanced Filtration system.
- Optimize the desired outlet quality, of water
- Cost effective solution with reduced water wastage, minimum Energy consumption & Environmental Friendly.

Design Basis:

The system is to be designed based on the following parameters:

- a) Source : River water & Bore water
- b) Flow : 125 to 150 m³/hr
- c) TSS(approx.) : 20 PPM
- d) Installation : At the outlet of Over Head Tank.
- e) Over Head Tank location : MHDP.
- f) Tank capacity : 500 m³.
- g) Elevation : 30 mtrs + 5 mtrs storage level
- h) Inlet pressure(approx.) : 3.0 kg / cm²
- i) Design Pressure :10 kg / cm²
- j) Filtration Degree : 25 microns absolute

IV. System Specification

- Normal and maximum flow rate
- Minimum Inlet Pressure
- Filtration Degree absolute
- Inlet TSS in mg/l or ppm
- Minimum water used for draining / flushing
- Cleaning Mechanism
- Mechanical Life of screens and housing

a) Normal and Maximum Flow rate:

The Filter is capable of handling 120% of the normal flow rate.

b) Minimum Inlet Pressure:

The minimum inlet pressure to be provided for the filter shall be in the range of 2.0 to 2.5 bars. No back wash pumps shall be used for cleaning purpose.

c) Filtration Degree absolute :

The filter design shall be based on weave wire screen – 4 layer wherein the filtration degree will be achieved by 2nd layer screen. The minimum useable area of the screen shall be 6:1 or 32% of the proposed screen area. Wedge wire screens shall be used as one of the layer.

d) Inlet TSS in mg / or ppm :

Based on the inlet TSS load, the filter selection is to be done to have minimum flushing cycles.

e) Minimum water for flushing:

The water used for flushing shall not exceed 1% of the rated flow and the filter shall always deliver at the outlet of 99% of the rated flow. No standby filters are envisaged for this application.

f) Cleaning mechanism :

The cleaning mechanism shall be of spring loaded suction nozzles to ensure uniform cleaning of the screen. The cleaning mechanism shall be suitable for number of flushing cycles online basis with no downtime and shall be activated either by pressure differential or timer whichever is earlier.

g) Mechanical life of screens / filter housing:

As no standby filters are envisaged for this application the functionality of the system and mechanical parameters shall be of high quality. The screens shall be in SS316L material & Housings shall be in high grade carbon steel with suitable sandblasting and epoxy coating with polyester coating.

h) Control System:

The control panel shall be provided with the following control and monitoring.

- Common Selector switch to operate the system in following mode.
- PDS mode.
- PDS & Timer Mode
- Continuous Flushing Mode

The filters shall be having arrangement to do manual flushing with the help of test button on the front of the control panel as well by simulation locally on the filter by closing the small ball valve for 5 sec and re opening it, thus creating an artificial backflush cycle.

PAINTING

Internal Coating:

1.0 Coated with two layers of the epoxy powder and then oven-cured.

External Coating:

4.0 Coated with a polyester powder and then oven-cured.

Reference Data Sheet:

Flow rate	125 to 150 m3/hr	
Filtration Degree	25 Micron absolute	
Min working pressure	2.0 bar	
Design pressure	10.0 bar	
Filtration Area / Unit	10,000 cm2	
Flange Connections	ANSI B 16.5 #150	
Inlet / Outlet Diameter	12"	
Location	Outdoor Installation	
Design Temperature	50 Degrees C	
Filtration Element	4 Layer screen including wedge wire as one of the supporting layer & 3 layers of weave wire.	
Average wasted water	Up to 1% of total flow (depends on water quality)	
Exhaust Valve	80mm ; 3 "	
Flushing Cycle time	40 seconds	
Wasted water per cycle	420 ltrs @ 2 bar operating pressure	
Minimum flow for flushing	50 m3/h at 2.0 bar	
Control voltage	24V AC	
Electric Motor	½ HP , load 1.5 Amp	14 Gear output R.P.M
Rated Operation Voltage	3 phase	415V, 50 Hz

Construction Materials

Filter Housing and Lid	Carbon Steel epoxy coated
4 Layer Weave Wire Screens	SS 316
Internals and cleaning mechanism	SS 316
Exhaust Valve	Cast Iron, Natural Rubber
Seals	Synthetic Rubber

Pre-Qualification requirement (Technical):

1. The vendor should have supplied a minimum of four self-cleaning filters having minimum capacity as rated above, in finer filtration range of 25 to 50 micron.
2. Proven track record of 4 installations on finer filtration range (to be supported by unpriced PO /Performance certificate/ satisfactory report/cross reference with customer) satisfactorily working for more than 2 yrs and above. Minimum one reference in 25 micron & 3 references in other ranges of filtration system.

Scope Of Supply

The Scope of the work shall include design, engineering, manufacture, assembly, testing, painting, packing, delivery, erection, commissioning, training & trouble free continuous running of the equipment for a minimum of one month in BHEL. All interconnecting piping for the above with accessories like inlet valves, outlet valve, bypass valve, downstream non return valve, gauges, instruments, manifold, provision for CIP etc., shall be in supplier scope. BHEL will provide power supply to the control panel which will be located nearer to the equipment. The necessary civil support / foundation will also be provided by BHEL.

Annual Maintenance Contract

Quotation for Annual Maintenance Contract after warranty period shall be submitted in a separate cover along with the offer.