



**LOCATION**  
Interiors & Fit out

# **Reverse Osmosis System**

***Capacity: 1,500 GPD (Gallons / Day)***

**TECHNICAL & COMMERCIAL PROPOSAL**

**System Design TDS: 5,000 ppm**

***BRACKISH WATER DESIGN***





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**Subject: 1,500 GPD R.O Plant Design on 5000 TDS (Brackish Water Design)**

Please find attached an exclusively customized technical & commercial proposal for the supply, installation & commissioning of the Reverse Osmosis Desalination Plant.

The Reverse Osmosis Desalination Plants will be feasible for the treatment of salts, suspended solids, minute particles, hardness, turbidity, bacteria & other water-related problems.

This technical & commercial offer has been carefully put together after analyzing your requirement which is 1,500 gallons Per Day as treated/processed water.

We assure you of the best quality and performance of R.O Plants and all the electrical and mechanical components of the mentioned R.O Plants are fully branded from the U.S.A, Denmark, France, China, Germany & Italy, and technology considered the world's No.1

On page 2 of this document is a comprehensive list of contents, which shall allow you to comprehend this proposal in its true essence.

**CMD** = Cubic Meters / Day  
**TDS** = Total Dissolve Solids  
**PPM** = Part per Million





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### SEQUENCE OF OPERATION

A level control device, located in the owner's product storage tank, will send a control signal to the R.O. system control panel to initiate the R.O. system start sequence.

Upon receipt of the R.O. start signals the raw water feed pump will be energized to supply feed water to the Multimedia Filter containing sand, gravel & carbon beds prior to the reverse osmosis system for fine filtration up to 20 microns.

The pre-treatment antifouling chemical feed and the inlet feed valve to the R.O. system will be energized which will begin the membrane flush cycle. The membrane flush cycle will allow for the injection of antifouling additives to stabilize, in order to inhibit the precipitation of sparingly soluble mineral constituents in the feed water within the membrane array, as well as remove any air from the system and ensure proper feed pressure is supplied to the R.O high-pressure pumps.

As water pressure builds in the Reverse Osmosis membrane through a feed pump suction line, a pressure switch senses the line pressure to ensure pump suction, if pressure is adequate then the high-pressure pump will start.

In the membrane array, the feed water is then split into two streams; permeate (product) and concentrate. The permeating water is sent to the owner-provided permeate water storage tank. The RO concentrate of TDS greater than 10,000 mg/l shall be disposed of again into a drain or any other source like a naked bore well arranged or managed by the CLIENT.

When the permeated storage tank is full, the level control device will send a shutdown signal to the RO control system. At the shutdown signal the RO high-pressure booster pump, raw water supply pump(s), and the RO inlet feed valve will be de-energized.





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**Scope of supply & offer for 1,500 GPD R.O Plant**  
**R.O Plants design on 5000 TDS (Brackish Water Design)**

Sl.No	Item Specification	Technical Specs	Quantity
1.	Feed Pump	½ HP Any European Brand	01
2.	Stainless-Steel High-Pressure Pump	Grundfos-Taiwan	01
3.	5 Micron Cartridge Filter	Single Filter Housing 20"-Taiwan	03
4.	Pressure Vessel for Membranes	Fiber Glass, Side Port 4" Diameter-Taiwan	01
5.	Membranes –Brackish Water Design	LG-Korea	01
6.	Skid for R.O Plant	Stainless Steel – 304 Frame	01
7.	Inlet Actuator & Flush Solenoid Valve	Taiwan	Various
8.	Source and RO Gauge	Taiwan	Various
9.	Inlet & Concentration Flow meter	Taiwan	Various
10.	Auto Flush Controller & TDS detector	Taiwan	Various
11.	Pressure Regulator	Taiwan	Various
12.	Gate Valve	Taiwan	Various
13.	In-Line TDS Meter	Taiwan	01
16.	Dosing Pump	Italy	01
17.	Dosing Tank	JM	01

- Feed Water TDS = If Up-to 5000 ppm
- Sweet Water TDS = Less then < 300 ppm
- Design Recovery = 40-50%





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## COST FOR 1,500 GPD R.O PLANT DESIGN ON BRACKISH WATER TDS UP-TO 5000 PPM

### R.O. PLANT PAYMENT SCHEDULE

<b>80%</b>	Advance of the Total Value along with LPO
<b>20%</b>	At the time of Delivery of R.O Plant

### Operational expense on 1,500 GPD R.O Desalination

#### PlantSystem Design on TDS Up-to 5000 ppm

Energy Consumption of 1,500 GPD RO:	<b>4-6kW</b> ( <i>Max on 1000 TDS</i> )
Cartridge Consumption ( <b>5 Micron – 20"</b> ):	03 Nos. / 1 Month
<i>Each 20" PP Cartridge of 5 Micron Cost:</i>	<i>AED: 150</i>

### R.O. PLANT WARRANTY

The R.O. Plant carries a warranty of **12 Months** from the day of commissioning that includes all plantcomponents and spares.

**This warranty doesn't include consumables like filter cartridges and chemicals.**

### R.O. PLANT DELIVERY SCHEDULE

The following tasks shall be commenced upon receiving the Advance amount from the client.

*The task of Material import, Unit Fabrication & Assembling in our workshop would be carried outwithin a stipulated period of **5 Working Days**.*





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## **LIMITATIONS:**

The efficient performance of the R.O plant is limited by the fulfillment of the following conditions:

- ✓ Raw water Supply and Pressure should be sufficient enough to produce the required capacity of treated water.
- ✓ The raw water condition should be within the design limits (If the raw water TDS Crosses above the designed parameters, then the Service Provider. Cannot be held liable and responsible for the increase of produced water TDS).
- ✓ Raw water BOD & COD should be [less than 2ppm],
- ✓ Raw water should be free from oil, grease, iron, copper & calcium content or should be zero.
- ✓ The raw water condition should be within the design limit.
- ✓ Maximum Feed water Turbidity should be < 1.0 NTU.
- ✓ Maximum Feed water SDI should be < 3.0 [ 15 min].
- ✓ Maximum Chlorine Concentration should be < 0.1 PPM Feed Water TSS [ Total Suspected Value] should be less than < 1 mg/L.
- ✓ Raw Feed water should be free from sewage water mixing [ like black dust particles].

## **SUPPLIER'S SCOPE OF WORK**

- Complete assembling, fabrication, installation & commissioning of 1500 GPD R.O Plant.
- Responsible for providing 1500 GPD sweet, treated water from R.O. Plant with a product water TDS (salinity) of less than 300 mg/l.
- The warranty for R.O Plant is 1 Year (12 Months) including all the R.O Plant Electrical and mechanical accessories while there will be no warranty for consumables like chemicals and filters.



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### **RESPONSIBILITIES FOR THE CLIENT**

- Proper rejection source from R.O. Plant till rejection bore well-arranged and managed by Client.
- A regular feed water source for R.O. Plant from a bore well or Municipality Water.
- An uninterrupted electricity supply to R.O Plant's room or R.O Plant control panel.
- Power Cable from main DP to R.O Plant control panel.
- Water storage tanks of 300usg (2 nos).

### **VALIDITY**

Our offer is valid for a period of **30 days** from the date of submission of the proposal and after 30 days price stability is not guaranteed. We reserve the right to amend the price without announcement and without assigning any reason thereof.

### **FORCE MAJEURE CLAUSE**

Vendor shall not be liable for any failure or delay to perform any of its obligations hereunder if such failure or delay has occurred by an act of God, strike, lockout, inability to obtain materials, fire, breakdown, war, civil commotion, destruction of plant, governmental act or regulation, or any other cause or events beyond the control of Vendor., or its suppliers or shippers/forwarders.

We hope that our organization comes up to your expectations, and we look forward to forging a long-term, mutually beneficial relationship.

