AFG DUBAI

COMPANY PROFILE AND PRODUCT CATALOGUE

We add value to water.

Turnkey industrial water treatment, reverse osmosis and seawater desalination systems.

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01 · ABOUT US

Sustainable water solutions through engineering strength

AFG Dubai combines innovative technologies, engineering expertise and a sustainability approach to offer high-efficiency water treatment solutions to industrial and commercial facilities. AFG has manufactured water treatment systems since 2012 and has completed projects in several countries; AFG Dubai is its office in the United Arab Emirates.

We engineer each project specifically around the customer's water analyses, capacity requirements, process requirements and operating conditions, and deliver it with the aim of maximum performance and long-lasting operation.



2012
Manufacturing since

9,225
m^3/day · Manisa Metropolitan Municipality drinking water treatment plant

6,000
m^3/day · Avşa Island seawater desalination plant

4 countries
Projects in Türkiye, Turkmenistan, Azerbaijan and Pakistan

Our Mission

To provide our customers with high-quality, efficient and environmentally friendly water treatment systems while contributing to the protection of natural water resources, developing technologies that support sustainable water management, and building long-term solution partnerships.

Our Vision

To be one of the leading companies cited as an example in the national and international market for reliability, engineering quality and a sustainable approach, by developing innovative solutions in water technologies.

Office: Silver Tower 2102, Business Bay, Dubai, UAE · afgdubai.ae

What do we do?

Turnkey solutions from water source analysis to design, manufacturing, installation and commissioning.

01

Industrial process water treatment

Custom engineering solutions for the high-quality process water required in production processes. Increases process efficiency and extends equipment life.

02

Drinking and utility water treatment

Reliable treatment systems that bring groundwater, surface water and well water into compliance with national and international quality standards.

03

Seawater desalination (SWRO)

High-efficiency systems that treat seawater with reverse osmosis technology to produce water of drinking, utility and process water quality.

04

Greywater recycling

Makes shower, washbasin and laundry water reusable with advanced treatment technologies, reducing water consumption and operating costs.

05

Wastewater treatment and recovery

Sustainable solutions for treating domestic and industrial wastewater in compliance with environmental legislation and for its reuse.

06

Water recovery systems

A contribution to protecting water resources and reducing water costs through the reuse of treated wastewater.



03 · PROCESS

The journey of water

From raw water to ready-to-use water: systems we manufacture ourselves for every stage.

01

Raw water

Well water, surface water or seawater. Every project starts with a water analysis.

Water analysis · Capacity and process requirements

02

Filtration and softening

Turbidity, particles, chlorine and hardness are removed; the membranes are protected.

Mechanical filters · Sand filtration (KFS, EKFS) · Activated carbon (AKFS, EAKFS) · Water softening (ZKYS, DKYS, TYS, ETYS)

03

Ultrafiltration and special removal

Suspended solids and microorganisms are retained; special removal is added depending on the source.

Ultrafiltration · Arsenic · Iron-manganese · Boron removal

04

Reverse osmosis

Dissolved salts and minerals are separated on a semi-permeable membrane. For seawater, under high pressure (SWRO).

Perge · Aspendos · Olympos series · Seawater desalination

05

Disinfection and storage

Disinfection with UV and ozone; demineralisation and EDI for processes that require pure water.

UV · Ozone · Demineralisation · EDI · Modular water tanks

✓

Ready-to-use water

Drinking, utility, process and irrigation water.

Municipalities · Hotels · Factories · Greenhouses

Reverse osmosis and seawater desalination

An advanced treatment technology that separates dissolved salts, heavy metals, bacteria, viruses and other contaminants from water using a semi-permeable membrane.



Perge Series

Industrial reverse osmosis system



Aspendos Series

Industrial reverse osmosis system



Olympos Series

Industrial reverse osmosis system



Seawater desalination (SWRO)

Systems that convert seawater with a high salinity level into drinking water, process water or utility water using advanced membrane technologies.

- Pre-treatment: automatic mechanical filter, ultrafiltration, sand filter
- High-pressure pumps and energy recovery
- Final conditioning with a dolomite system
- PLC and SCADA automation

A technical data sheet is available in Turkish and English for each series.

Product family



Filtration systems

Sand and activated carbon filters · KFS, EKFS, AKFS, EAKFS



Water softening

Time- and flow-controlled, duplex, frontal-piped · ZKYS, DKYS, TYS, ETYS



Ultrafiltration

Removal of suspended solids and microorganisms



Disinfection

Ultraviolet (UV) and ozone systems



Demineralisation and EDI

Pure water with ion exchange resins and electrodeionisation



Mechanical filters

Automatic self-cleaning, Big One and cartridge filters



Modular water tanks

Stainless steel, GRP and galvanised



Automation

PLC-controlled, frontal-piped systems

Special treatment systems

Arsenic removal · Iron and manganese removal · Boron removal · Greywater treatment · Wastewater treatment (industrial and domestic, MBBR)

Spare parts and consumables

Filtration tanks (St37 epoxy, FRP) · Automatic control valves · High-pressure and dosing pumps · RO membranes and pressure vessels · Resin, activated carbon, quartz sand · Actuated valves

SECTION

Product catalogue

Features, application areas and model tables of our series. Each project is designed separately according to the water analysis; the values in the tables belong to standard models.

WATER SOFTENING FILTRATION REVERSE OSMOSIS DISINFECTION SPARE PARTS

Water Softening Systems





WHAT IS A WATER SOFTENING SYSTEM?

A water softening system is a water treatment system that removes the calcium and magnesium ions that cause hardness in water by the ion exchange method.

During this process, the sodium ions in the resin are exchanged with the calcium and magnesium ions in the water. In this way the hardness of the water is reduced and scale formation is largely prevented.

When the capacity of the resin is exhausted, the system carries out automatic regeneration using salt water (regeneration brine), and the resin is prepared for reuse.

HOW DOES A WATER SOFTENING SYSTEM WORK?

AFG Dubai water softening systems operate according to the following principle:

1. Raw Water Inlet: Well water, mains water or process water is fed into the system.

2. Ion Exchange: As the water passes through the cationic resin bed, the calcium and magnesium ions that cause hardness are retained by the resin.

3. Softened Water Outlet: The water, with its hardness removed, is sent to the facility for use.

4. Automatic Regeneration: At the end of a set time or flow volume, the system switches to regeneration automatically. The brine solution taken from the brine tank renews the resin, so that the system keeps operating continuously at high performance.

ADVANTAGES OF WATER SOFTENING SYSTEMS

- Significantly reduces scale formation.
- Increases the efficiency of boiler and steam systems.
- Protects heat exchangers and heating systems.
- Extends the life of plumbing and pipelines.
- Reduces energy consumption.
- Reduces the consumption of detergents and cleaning chemicals.
- Reduces maintenance and repair costs.
- Extends membrane life when used as pre-treatment for reverse osmosis systems.
- Provides continuous and reliable soft water.
- Minimises user intervention thanks to fully automatic operation.

AFG DUBAI WATER SOFTENING SYSTEMS

Single-Tank Water Softening Systems: Offer economical and compact solutions for low and medium flow rate applications. Widely preferred in businesses, residential projects and small industrial facilities.

Duplex (Twin) Water Softening Systems: Thanks to the alternating operation of two resin tanks, they provide uninterrupted soft water even during regeneration. Ideal for applications where water interruption is not acceptable, such as hospitals, hotels and production facilities.

Triplex and Multiple Systems: Developed for uninterrupted water supply in high flow rate industrial facilities, municipalities and large production lines. Managing more than one tank through automation provides high capacity and operating flexibility.

TECHNICAL SPECIFICATIONS

AFG Dubai water softening systems can be manufactured with the following features according to project requirements:

Resin Tank: FRP (Fibre Reinforced Polyester), Carbon Steel with Epoxy Paint, AISI 304 Stainless Steel, AISI 316L Stainless Steel.

Control Valve: Time-controlled automatic valve, Flow-controlled automatic valve, Electronic control system, PLC-controlled automation (optional).

Resin: High-quality cationic resin suitable for food contact, High ion exchange capacity, Long service life.

Brine Tank: High-strength polyethylene body, Safety float, Salt level control.

Operating Conditions: Operating pressure 2–8 bar (according to project design), Operating temperature 5°C – 45°C.

APPLICATIONS

AFG Dubai water softening systems are widely used in the following sectors:

- Hotels and holiday villages
- Hospitals
- Food and beverage production facilities
- Textile factories
- Laundries
- Steam boiler systems
- Cooling towers
- Power plants
- Chemical industry
- Pharmaceutical and cosmetics production
- Industrial production facilities
- Apartment block and housing estate management
- Shopping centres
- Schools and public institutions
- Restaurants and cafés

THE IMPORTANCE OF WATER SOFTENING SYSTEMS IN REVERSE OSMOSIS SYSTEMS

In reverse osmosis (RO) systems, hard water can cause scale formation on the membrane surface. This reduces membrane performance, increases energy consumption and raises maintenance costs.

Water softening systems designed by AFG Dubai are used upstream of reverse osmosis and help to protect the membranes, increase system efficiency and reduce operating costs.

WHY AFG DUBAI?

AFG Dubai designs each project specifically according to the water analysis and the needs of the facility. Through the use of quality resins, reliable automation systems and durable equipment, it provides long-lasting and highly efficient solutions.

Services offered by AFG Dubai: Water analysis evaluation, project design and engineering, system design, manufacturing and quality control, installation and commissioning, operator training, periodic maintenance, resin replacement and renewal, spare parts supply, after-sales technical support.

HOW TO SELECT THE RIGHT WATER SOFTENING SYSTEM?

The following criteria should be evaluated in order to select the right system:

- Raw water hardness value (French hardness, German hardness or ppm)
- Daily and hourly water consumption
- Inlet water flow rate
- Intended use (drinking water, process water, boiler feed water, etc.)
- Regeneration frequency
- Installation area
- Automation requirement
- Future capacity expansion plans

AFG Dubai specialists carry out a detailed water analysis and needs assessment and design the most suitable water softening system for your facility.

ZKYS Series Water Softening System

With ZKYS Series time-controlled water softening systems, calcium and magnesium ions in the water are removed by the ion exchange principle.





ADVANTAGES

- Prevents scale formation.
- Increases the energy efficiency of heating systems.
- Extends the service life of boilers, heat exchangers and piping.
- Reduces soap and detergent consumption.
- Reduces maintenance and repair costs.
- Improves product quality in industrial processes.
- Maintains the performance of water-using equipment.

SYSTEM FEATURES

- Corrosion-resistant FRP (filament-wound) vessel
- Programmable automatic valve
- Time-controlled automatic backwash
- 3–6 bar operating pressure
- Maximum 10 bar test pressure
- Maximum operating temperature of 50 °C
- Ion exchange resin compliant with food regulations
- Brine tank
- 220 V / 50 Hz power supply

APPLICATIONS

- Houses and villas
- Hotels and hospitality facilities
- Hospitals
- Industrial production facilities
- Boiler feed water systems
- Cooling towers
- Laundries
- Food and beverage production facilities
- Car wash facilities
- Agricultural enterprises

ZKYS MODELS TECHNICAL SPECIFICATIONS

MODEL	SERVICE FLOW RATE (m^3/h)		PRESSURE DROP (bar)	SERVICE (inch)	DRAIN (inch)	DIMENSIONS (cm)			RESIN (L)	BRINE TANK (L)
	20 m3/s	30 m3/s				LA	LB	D		
ZKYS 30	1.5	2	0.2	3/4	1/2	104	89	25	30	70
ZKYS 50	1.5	2	0.2	3/4	1/2	153	137	25	50	70
ZKYS 60	2.2	3	0.2	3/4	1/2	148	132	30	60	70
ZKYS 80	2.5	3.5	0.2	1	1/2	153	137	33	80	100
ZKYS 100	3	4	0.2	1	1/2	181	165	36	100	100
ZKYS 150	4	--	0.2	1	1/2	181	165	41	150	140
ZKYS 150	4	5.5	0.2	1	1/2	181	165	41	150	140
ZKYS 200	5.1	6.5	0.3	1	1/2	181	165	46	200	200
ZKYS 150	4	5.5	0.2	2	1	187	165	41	150	140
ZKYS 200	5.1	6.5	0.3	2	1	187	165	46	200	200
ZKYS 250	6.6	9	0.5	2	1	182	152	53	250	300
ZKYS 300	9	10	0.5	2	1	235	183	61	300	300
ZKYS 500	10	----	0.7	2	1	235	183	76	500	500
ZKYS 750	12	----	0.7	2	1	235	183	92	750	750
ZKYS 500	14	15	0.7	2	2	235	183	92	500	500
ZKYS 750	18	--	0.7	2	2	235	183	92	750	750
ZKYS 900	20	--	0.7	2	2	247	183	105	900	1000

DKYS Series Water Softening System

DKYS Series flow-controlled water softening systems measure the quantity of water passing through by means of a meter on the unit and subject it to a pre-programmed backwash process.





ADVANTAGES

- Prevents scale formation.
- Increases the energy efficiency of heating systems.
- Extends the service life of boilers, heat exchangers and piping.
- Reduces soap and detergent consumption.
- Reduces maintenance and repair costs.
- Improves product quality in industrial processes.
- Maintains the performance of water-using equipment.

SYSTEM FEATURES

- Corrosion-resistant FRP (filament-wound) vessel
- Programmable automatic valve
- Time-controlled automatic backwash
- 3–6 bar operating pressure
- Maximum 10 bar test pressure
- Maximum operating temperature of 50 °C
- Ion exchange resin compliant with food regulations
- Brine tank
- 220 V / 50 Hz power supply

APPLICATIONS

- Houses and villas
- Hotels and hospitality facilities
- Hospitals
- Industrial production facilities
- Boiler feed water systems
- Cooling towers
- Laundries
- Food and beverage production facilities
- Car wash facilities
- Agricultural enterprises

DKYS MODELS TECHNICAL SPECIFICATIONS

MODEL	SERVICE FLOW RATE (m^3/h)		PRESSURE DROP (bar)	SERVICE (inch)	DRAIN (inch)	DIMENSIONS (cm)			RESIN (L)	BRINE TANK (L)
	20 m3/s	30 m3/s				LA	LB	D		
DKYS 30	1.5	2	0.2	3/4	1/2	104	89	25	30	70
DKYS 50	1.5	2	0.2	3/4	1/2	153	137	25	50	70
DKYS 60	2.2	3	0.2	3/4	1/2	148	132	30	60	70
DKYS 80	2.5	3.5	0.2	1	1/2	153	137	33	80	100
DKYS 100	3	4	0.2	1	1/2	181	165	36	100	100
DKYS 150	4	--	0.2	1	1/2	181	165	41	150	140
DKYS 150	4	5.5	0.2	1	1/2	181	165	41	150	140
DKYS 200	5.1	6.5	0.3	1	1/2	181	165	46	200	200
DKYS 150	4	5.5	0.2	2	1	187	165	41	150	140
DKYS 200	5.1	6.5	0.3	2	1	187	165	46	200	200
DKYS 250	6.6	9	0.5	2	1	182	152	53	250	300
DKYS 300	9	10	0.5	2	1	235	183	61	300	300
DKYS 500	10	----	0.7	2	1	235	183	76	500	500
DKYS 750	12	----	0.7	2	1	235	183	92	750	750
DKYS 500	14	15	0.7	2	2	235	183	92	500	500
DKYS 750	18	--	0.7	2	2	235	183	92	750	750
DKYS 900	20	--	0.7	2	2	247	183	105	900	1000

TYS Series Water Softening System

TYS Series duplex water softening systems are equipped with fully automatic control systems and consist of two softening units. The system can be controlled volumetrically according to the quantity of water passing through.





ADVANTAGES

- Prevents scale formation.
- Increases the energy efficiency of heating systems.
- Extends the service life of boilers, heat exchangers and piping.
- Reduces soap and detergent consumption.
- Reduces maintenance and repair costs.
- Improves product quality in industrial processes.
- Maintains the performance of water-using equipment.

SYSTEM FEATURES

- Twin-tank, corrosion-resistant FRP (filament-wound) vessel
- Programmable automatic valve
- Flow-controlled automatic regeneration
- 3–6 bar operating pressure
- Maximum 10 bar test pressure
- Maximum operating temperature of 50 °C
- Ion exchange resin compliant with food regulations
- 220 V / 50 Hz power supply

APPLICATIONS

- Houses and villas
- Hotels and hospitality facilities
- Hospitals
- Industrial production facilities
- Boiler feed water systems
- Cooling towers
- Laundries
- Food and beverage production facilities
- Car wash facilities
- Agricultural enterprises

TYS MODELS TECHNICAL SPECIFICATIONS

MODEL	SERVICE FLOW RATE (m^3/h)		PRESSURE DROP (bar)	SERVICE (inch)	DRAIN (inch)	DIMENSIONS (cm)			RESIN (L)	BRINE TANK (L)
	20 m3/s	30 m3/s				LA	LB	D		
TYS 30	1,5×2	2×2	0.2	3/4	1/2	104	89	25	30×2	70×2
TYS 50	1,5×2	2×2	0.2	3/4	1/2	153	137	25	50×2	70×2
TYS 60	2,2×2	3×2	0.2	3/4	1/2	148	132	30	60×2	70×2
TYS 80	2,5×2	3,5×2	0.2	1	1/2	153	137	33	80×2	100×2
TYS 100	3×2	4×2	0.2	1	1/2	181	165	36	100×2	100×2
TYS 150	4×2	--	0.2	1	1/2	181	165	41	150×2	140×2
TYS 150	4×2	5,5×2	0.2	1	1/2	181	165	41	150×2	140×2
TYS 200	5,1×2	6,5×2	0.3	1	1/2	181	165	46	200×2	200×2
TYS 150	4×2	5,5×2	0.2	2	1	187	165	41	150×2	140×2
TYS 200	5,1×2	6,5×2	0.3	2	1	187	165	46	200×2	200×2
TYS 250	6,6×2	9×2	0.5	2	1	182	152	53	250×2	300×2
TYS 300	9×2	10×2	0.5	2	1	235	183	61	300×2	300×2
TYS 500	10×2	----	0.7	2	1	235	183	76	500×2	500×2
TYS 750	12×2	----	0.7	2	1	235	183	92	750×2	750×2
TYS 500	14×2	15×2	0.7	2	2	235	183	92	500×2	500×2
TYS 750	18×2	--	0.7	2	2	235	183	92	750×2	750×2
TYS 900	20×2	--	0.7	2	2	247	183	105	900×2	1000×2

ETYS Series Water Softening System

With ETYS Frontal-Piped Single, Duplex and Triplex water softening systems, calcium and magnesium ions in the water are removed by the ion exchange principle. Equipped with PLC automation control systems, this system consists of two or more softening units.





ADVANTAGES

- Prevents scale formation.
- Increases the energy efficiency of heating systems.
- Extends the service life of boilers, heat exchangers and piping.
- Reduces soap and detergent consumption.
- Reduces maintenance and repair costs.
- Improves product quality in industrial processes.
- Maintains the performance of water-using equipment.

SYSTEM FEATURES

- Cationic resin, maximum operating pressure 6 bar
- Butterfly valves with electric actuators (optional pneumatic actuator)
- Octopus diffuser bottom collector structure
- PVC-U frontal piping (on epoxy-painted frame)
- Sample taps and pressure gauges at system inlets and outlets
- Electronic board or Siemens Logo control panel (optional touchscreen)
- Electricity 220V / 50 Hz / 1 phase
- A salt consumption of 150 g per 1 L of resin has been assumed. Resin capacity has been assumed as 6000 L Fr resin.

FRP TANK MODELS

MODEL	TANK DIMENSIONS (mm) (Diameter x Htotal)	CONNECTION SIZES (DN) SERVICE - DRAIN - BRINE SUCTION	FLOW RATE m^3/h	SALT CONSUMPTION (kg)	MINERALS			
					SINGLE		TANDEM	
					RESIN (L)	QUARTZ (kg)	RESIN (L)	QUARTZ (kg)
ETYS 500	775 × 2050	50 - 50 - 25	20	75	500	150	500×2	150×2
ETYS 750	975 × 2150	50 - 50 - 25	27	113	750	250	750×2	250×2
ETYS 900	1075 × 2400	65 - 65 - 25	32	135	900	300	900×2	300×2
ETYS 1200	1225 × 2400	65 - 65 - 40	42	180	1200	500	1200×2	500×2
ETYS 1600	1600 × 2500	80 - 80 - 40	50	270	1800	800	1800×2	800×2

MODELS WITH EPOXY-PAINTED CARBON STEEL ST37 TANK

MODEL	TANK DIMENSIONS (mm) (Diameter x Htotal)	CONNECTION SIZES (DN) SERVICE - DRAIN - BRINE SUCTION	FLOW RATE m^3/h	SALT CONSUMPTION (kg)	MINERALS			
					SINGLE		TANDEM	
					RESIN (L)	QUARTZ (kg)	RESIN (L)	QUARTZ (kg)
ETYS 1250	1250 × 2790	80-50-40	50	270	1800	300	1800×2	300×2
ETYS 1600	1600 × 3020	100-80-50	85	420	2800	500	2800×2	500×2
ETYS 2000	2000 × 3250	125-80-50	135	660	4400	600	4400×2	600×2
ETYS 2400	2400 × 3400	150-100-80	180	945	6300	700	6300×2	700×2

Filtration Systems





WHAT IS A FILTRATION SYSTEM?

A filtration system is a water treatment system that removes suspended solids, sand, sediment, rust, sludge, organic particles and other unwanted contaminants from water by using special filter media or filter elements.

Filtration is one of the first and most important stages of many water treatment processes. A correctly designed filtration system improves the performance of the subsequent treatment units, reduces maintenance costs and extends the service life of system equipment.

HOW DO FILTRATION SYSTEMS WORK?

In filtration systems, raw water is passed through the selected filter media at a controlled velocity. While the particles in the water are retained in the filter bed or filter cartridge, clean water is directed to the system outlet.

When the contaminants accumulated on the filter reach a certain level, the system is cleaned by an automatic or manual backwash process and continues to operate again at high performance.

The filter type and filtration method are determined according to the water source, the type of contaminant and the required outlet water quality.

ADVANTAGES OF FILTRATION SYSTEMS

- Removes suspended solids and sediment.
- Improves water quality by reducing turbidity.
- Protects pumps, valves and pipelines.
- Extends the life of reverse osmosis membranes.
- Reduces maintenance and operating costs.
- Increases energy efficiency.
- Provides continuous and reliable filtration.
- Offers easy maintenance with automatic backwash.
- Capacity can be increased thanks to its modular structure.
- Offers suitable solutions for different water sources.

APPLICATIONS

AFG Filtration Systems are widely used in the following sectors:

- Drinking water treatment plants
- Industrial process water systems
- Food and beverage production facilities
- Hotels and tourism facilities
- Textile factories

- Chemical industry
- Pharmaceutical and cosmetics production
- Power plants
- Seawater desalination systems
- Reverse osmosis (RO) pre-treatment systems
- Ultrafiltration (UF) systems
- Cooling towers
- Irrigation systems
- Municipalities
- Residential and communal living projects

WHY AFG DUBAI FILTRATION SYSTEMS?

AFG Dubai designs filtration systems with an engineering approach specific to each project. Thanks to the filter type and automation structure selected by taking into account the water analysis, flow rate requirement and intended use, high efficiency and low operating cost are achieved.

Services offered by AFG Dubai: Water analysis evaluation, project design and engineering, system design, manufacturing and quality control, installation and commissioning, operator training, periodic maintenance, spare parts supply and after-sales technical support.

SELECTING THE RIGHT FILTRATION SYSTEM

The following criteria should be taken into account when selecting a filtration system:

- Water source (well water, mains water, surface water, seawater)
- Flow rate requirement
- Suspended solids content
- Turbidity level
- Iron and manganese concentration
- Organic matter content
- Subsequent treatment processes
- Operating conditions
- Maintenance and automation requirements

Selecting the right filter type and filter media is of great importance for system performance and operating costs.

KFS Series Sand Filtration System

The KFS Series Sand Filtration System consists of 3 main components: Control Unit, Filter Body and Filter Media. With the help of the media inside it, the sand filter retains the particles of different sizes and densities that cause turbidity in water in different layers of the media, thus removing them from the water.





SYSTEM FEATURES

- Corrosion-resistant FRP (filament-wound) vessel
- Programmable automatic valve
- Automatic backwash time adjuster
- 3-6 bar operating pressure
- Max. 10 bar test pressure
- Max. 50 °C operating temperature
- Media content in 4 different granule sizes
- Electrical supply 220 V/50 Hz

APPLICATIONS

- Drinking water treatment plants
- Groundwater and surface water treatment systems
- Reverse osmosis pre-treatment systems
- Ultrafiltration pre-treatment
- Industrial process water
- Food and beverage production facilities
- Power plants
- Hotels and hospitality facilities
- Agricultural irrigation systems
- Wastewater recovery plants

KFS MODELS TECHNICAL SPECIFICATIONS

MODEL	SERVICE FLOW RATE (m^3/h)		PRESSURE DROP (bar)	SERVICE (inch)	DRAIN (inch)	DIMENSIONS (cm)			ANTHRACITE (kg)	QUARTZ (kg)
	20 m3/s	30 m3/s				LA	LB	D		
KFS 20	1	1.5	0.2	3/4	3/4	104	89	25	5	20

KFS 35	1	1.5	0.2	3/4	3/4	153	137	25	15	35
KFS 50	1.5	2.2	0.2	1	1	148	132	30	20	50
KFS 60	1.75	2.5	0.3	1	1	153	137	33	20	60
KFS 75	2	3	0.3	1	1	181	165	36	25	75
KFS 100	2.5	4	0.3	1	1	181	165	41	30	100
KFS 140	3.5	----	0.5	1	1	181	165	46	30	140
KFS 140	3.5	5	0.5	2	2	187	165	46	30	140
KFS 180	4.5	6	0.5	2	2	182	152	53	40	180
KFS 250	6	9	0.5	2	2	235	183	61	70	250
KSF 400	9	----	1	2	2	235	183	76	100	400
KFS 570	10	----	1	2	2	235	183	92	150	570
KFS 570	14	18	1	2	2	235	183	92	150	570
KFS 750	18	20	1	2	2	247	183	105	250	750

EKFS Series Sand Filtration System

It consists of 3 main components: the Control Unit, comprising valves with electric or pneumatic actuators under PLC control, the Filter Vessel and the Filter Media. It removes the particles that cause turbidity in the water by retaining them in the different layers of the media.





SYSTEM FEATURES

- Maximum operating pressure 6 bar
- Time-controlled backwash (differential pressure optional)
- Butterfly valves with electric actuators (pneumatic actuator optional)
- Octopus diffuser bottom collector structure
- PVC-U frontal piping (on epoxy-painted frame)
- Sample taps and pressure gauges at system inlets and outlets
- Electronic board or Siemens LOGO control panel (touchscreen optional)
- Electricity 220V / 50 Hz / 1 phase

APPLICATIONS

- Drinking water treatment plants
- Groundwater and surface water treatment systems
- Reverse osmosis pre-treatment systems
- Ultrafiltration pre-treatment
- Industrial process water
- Food and beverage production facilities
- Power plants
- Hotels and hospitality facilities
- Agricultural irrigation systems
- Wastewater recovery plants

FRP TANK MODELS

MODEL	TANK DIMENSIONS (mm) (dia. x Htotal)	CONNECTION DIAMETERS (DN - Flange) Service - Drain	SERVICE FLOW RATE		SAND FILTER MEDIA	
			Velocity 20 m3/h	Velocity 30 m3/h	ANTHRACITE (kg)	QUARTZ (kg)

EKFS 500	775×2050	50 - 50	9	14	125	475
EKFS 750	975×2150	50 - 50	13	20	175	650
EKFS 900	1075×2400	65 - 65	18	27	200	775
EKFS 1200	1225×2400	65 - 65	23	35	300	1125
EKFS 1600	1600×2500	80 - 80	40	60	550	2025

MODELS WITH EPOXY-PAINTED CARBON STEEL ST37 TANK

MODEL	TANK DIMENSIONS (mm) (dia. x Htotal)	CONNECTION DIAMETERS (DN - Flange) Service - Drain	SERVICE FLOW RATE		SAND FILTER MEDIA	
			Velocity 20 m3/h	Velocity 30 m3/h	ANTHRACITE (kg)	QUARTZ (kg)
EKFS 1250	1250 × 2790	65 - 65	25	37	350	1375
EKFS 1600	1600 × 3020	80 - 80	40	60	600	2375
EKFS 2000	2000 × 3250	100 - 100	63	94	800	3150
EKFS 2400	2400 × 3400	125 - 125	91	136	1150	4525
EKFS 2800	2800 × 3750	150 - 150	123	185	1575	6200

AKFS Series Activated Carbon Filtration System

AKFS Activated Carbon Filtration Systems use the adsorption property of activated carbon to draw the molecules and ions in the water towards the inner surfaces through the mineral pores, leaving the water free of organic matter, colourless, odourless and clear.





SYSTEM FEATURES

- Corrosion-resistant FRP (filament-wound) vessel
- Programmable automatic valve
- Automatic backwash time adjuster
- Operating pressure: 3-6 bar
- Max. test pressure: 10 bar
- Max. temperature: 50 °C
- Media content in 3 different granule sizes
- Power supply: 220V / 50 Hz

APPLICATIONS

- Drinking water treatment plants
- Reverse osmosis (RO) pre-treatment
- Ultrafiltration (UF) pre-treatment
- Food and beverage production facilities
- Pharmaceutical and cosmetics industry
- Hotels and hospitality facilities
- Hospitals
- Industrial process water
- Bottling plants
- Municipal water treatment systems

ADVANTAGES

- Removes chlorine with high efficiency.
- Gives the water a natural taste and odour.
- Reduces the organic contaminant load.
- Protects reverse osmosis (RO) membranes against the effects of chlorine.
- Helps to reduce chemical consumption.
- Has low operating and maintenance costs.
- Offers long-lasting filter media.

AKFS MODELS TECHNICAL DATA TABLE

MODEL	SERVICE FLOW RATE (m^3/h)		PRESSURE DROP (bar)	SERVICE (inch)	DRAIN (inch)	DIMENSIONS (cm)			CARBON (kg)	QUARTZ (kg)
	20 m/s	30 m/s				LA	LB	D		
AKFS 20	1	1.5	0.2	3/4	3/4	104	89	25	20	---
AKFS 25	1	1.5	0.2	3/4	3/4	153	137	25	25	---
AKFS 35	1.5	2.2	0.2	1	1	148	132	30	35	---
AKFS 40	1.75	2.5	0.3	1	1	153	137	33	40	15
AKFS 50	2	3	0.3	1	1	181	165	36	50	25
AKFS 75	2.5	4	0.3	1	1	181	165	41	75	50
AKFS 80	3.5	----	0.5	1	1	181	165	46	80	50
AKFS 75	2.5	4	0.3	2	2	187	165	41	75	25
AKFS 80	3.5	5	0.5	2	2	187	165	46	80	50
AKFS 100	4.5	6	0.5	2	2	182	152	53	100	50
AKFS 125	6	9	0.5	2	2	235	183	61	125	100
AKSF 200	9	----	1	2	2	235	183	76	200	150
AKFS 300	10	----	1	2	2	235	183	92	300	150
AKFS 300	14	18	1	2	2	235	183	92	300	150
AKFS 450	18	20	1	2	2	247	183	105	450	200
AKFS 750	18	20	1	2	2	247	183	105	750	200

EAKFS Series Activated Carbon Filtration System

AKFS Activated Carbon Filtration Systems use the adsorption property of activated carbon to draw the molecules and ions in the water towards the inner surfaces through the mineral pores, leaving the water free of organic matter, colourless, odourless and clear.





SYSTEM FEATURES

- Corrosion-resistant FRP (filament-wound) vessel
- Programmable automatic valve
- Automatic backwash time adjuster
- Operating pressure: 3-6 bar
- Max. test pressure: 10 bar
- Max. temperature: 50 °C
- Media content in 3 different granule sizes
- Power supply: 220V / 50 Hz

APPLICATIONS

- Drinking water treatment plants
- Reverse osmosis (RO) pre-treatment
- Ultrafiltration (UF) pre-treatment
- Food and beverage production facilities
- Pharmaceutical and cosmetics industry
- Hotels and hospitality facilities
- Hospitals
- Industrial process water
- Bottling plants
- Municipal water treatment systems

ADVANTAGES

- Removes chlorine with high efficiency.
- Gives the water a natural taste and odour.
- Reduces the organic contaminant load.
- Protects reverse osmosis (RO) membranes against the effects of chlorine.
- Helps to reduce chemical consumption.
- Has low operating and maintenance costs.
- Offers long-lasting filter media.

FRP TANK MODELS

MODEL	TANK DIMENSIONS (mm) (dia. x Htotal)	CONNECTION DIAMETERS (DN - Flange) Service - Drain	SERVICE FLOW RATE (m^3/h)		ACTIVATED CARBON FILTER MEDIA	
			Velocity 20 m3/h	Velocity 30 m3/h	CARBON (kg)	QUARTZ (kg)
EAKFS 500	775×2050	50 - 50	9	14	225	150
EAKFS 750	975×2150	50 - 50	13	20	325	225
EAKFS 900	1075×2400	65 - 65	18	27	400	275
EAKFS 1200	1225×2400	65 - 65	23	35	550	400
EAKFS 1600	1600×2500	80 - 80	40	60	1000	700

MODELS WITH EPOXY-PAINTED CARBON STEEL ST37 TANK

MODEL	TANK DIMENSIONS (mm) (dia. x Htotal)	CONNECTION DIAMETERS (DN - Flange) Service - Drain	SERVICE FLOW RATE (m^3/h)		ACTIVATED CARBON FILTER MEDIA	
			Velocity 20 m3/h	Velocity 30 m3/h	CARBON (kg)	QUARTZ (kg)
EAKFS 1250	1250 × 2790	65 - 65	25	37	600	475
EAKFS 1600	1600 × 3020	80 - 80	40	60	1150	500
EAKFS 2000	2000 × 3250	100 - 100	63	94	1500	725
EAKFS 2400	2400 × 3400	125 - 125	91	136	2175	850
EAKFS 2800	2800 × 3750	150 - 150	123	185	2950	975

Reverse Osmosis Systems





AFG DUBAI REVERSE OSMOSIS SYSTEMS

Water quality is critically important today in many fields, from industrial production to drinking water. To meet the different water requirements of different sectors, AFG Dubai develops reverse osmosis (RO) models in various capacities and specifications.

Designed on the basis of raw water analysis, these systems use high-performance membrane technology to remove most of the dissolved salts, heavy metals, organic contaminants and microorganisms from the water and produce high-quality water.

WHY ARE REVERSE OSMOSIS MODELS DIFFERENT?

Every facility has different water consumption, raw water quality and process requirements. For this reason, models with different capacities and equipment are preferred instead of a single standard reverse osmosis system.

The systems offered by AFG Dubai are designed to serve a wide range of applications, from small businesses to large industrial facilities.

Models can be customised according to daily or hourly water demand, recovery rate, number of membranes, level of automation and intended use.

APPLICATIONS

AFG reverse osmosis models are widely used in the following sectors:

- Drinking water production plants
- Food and beverage industry
- Hotels and tourism facilities
- Textile factories
- Power plants
- Chemical industry
- Pharmaceutical and cosmetics production
- Electronics industry
- Seawater desalination plants
- Municipalities
- Agricultural irrigation projects
- Wastewater recovery plants

WHY AFG DUBAI REVERSE OSMOSIS MODELS?

AFG Dubai designs each project specifically according to the water analysis and the operating requirements. Thanks to the quality equipment used, high-efficiency

membrane technology and a strong automation infrastructure, the systems offer long-lasting and reliable operating performance.

Main advantages: Project-specific engineering design, high water recovery rate, low energy consumption, long membrane life, easy maintenance, use of high-quality equipment, turnkey installation, after-sales technical service support, spare parts supply and remote monitoring/automation options.

HOW TO CHOOSE THE RIGHT REVERSE OSMOSIS MODEL?

The following criteria should be taken into account when selecting the right model:

- Raw water analysis
- Daily water consumption
- Required water quality
- Feed water conductivity (TDS)
- Operating pressure
- Recovery rate
- Installation area
- Energy consumption
- Future capacity increase requirement

The AFG Dubai specialist team evaluates all these criteria, determines the most suitable reverse osmosis model for your facility and provides a project-specific solution.

Perge Series Industrial Reverse Osmosis System

It is an advanced treatment technology that separates dissolved salts, heavy metals, bacteria, viruses and other contaminants from water by means of a semi-permeable membrane. Today it is used in many fields, from drinking water production to industrial process water and the conversion of seawater into drinking water.





APPLICATIONS

- Perge Series Industrial Reverse Osmosis Systems are used in many sectors.

Food and Beverage Industry: Provides high-quality process water in beverage production, dairies, soft drink production and food processes.

Hotels and Hospitality Facilities: Preferred for boiler systems, laundries, kitchens and utility water treatment.

Power Plants: Used in the preparation of steam boiler feed water.

Chemical Industry: Meets the demand for pure water in chemical production processes.

Pharmaceutical Industry: Offers reliable solutions for the production of high-purity process water.

Textile Industry: Improves product quality by providing good-quality water in dyeing and washing processes.

Agriculture and Greenhouse Systems: Reduces the salinity of irrigation water.

Electronics Industry: Provides low-conductivity water for electronics production processes.

ADVANTAGES

High Water Quality: Produces process water with a very low conductivity value.

Energy Saving: Energy consumption is minimised thanks to high-efficiency pump and membrane technology.

Automatic Operation: Provides fully automatic operation with a PLC-controlled automation system.

Low Operating Cost: Reduces chemical consumption and keeps maintenance costs to a minimum.

Long Membrane Life: Thanks to correct pretreatment, the membranes operate at high performance for many years.

Modular Design: Capacity can be increased easily as the facility grows.

Compact Structure: Thanks to its minimum-footprint design, it can be installed even in confined spaces.

SYSTEM FEATURES

Membranes: FRP or stainless steel housings; TFC spiral-wound membranes of 2.5" and 4" diameter.

High-Pressure Pump: SS304 vertical centrifugal or brass-body rotary type pump, depending on the model.

Body / Frame Structure: SS304 stainless steel or ST-37 carbon steel options.

Pre-filtration: Cartridge filter with 5 micron rating.

Piping and Fittings: Low- and high-pressure pipes in U-PVC / Zonder.

Control Elements: Automatic solenoid valves, pressure regulating valves and switches.

Measuring Equipment: Scaled flow meters, glycerine-filled pressure gauges, conductivity indicator and autoflush.

Control & Electrical: RO electronic board, alarm lamps and 220V/380V supply depending on the model.

Note: Antiscalant dosing system is not included.

PERGE SERIES REVERSE OSMOSIS SYSTEM TECHNICAL INFORMATION TABLE

MODEL	HOUSING	CAPACITY @20°C (L/day)	OPERATING PRESSURE (psi)	SYSTEM EFFICIENCY (%)	ENERGY (kW)	DIMENSIONS HxWxD (mm)	MEMBRANE SPECIFICATIONS	
							DIMENSIONS	NUMBER OF MEMBRANES
Perge 125-1	SS 304	720	150 - 200	40	0.37	1590 × 540 x 650	2,5" x 21"	1
Perge 125-2	SS 304	1500	150 - 200	40	0.37	1590 × 540 x 650	2,5" x 40"	1
Perge 125-3	SS 304	2000	150 - 200	40	0.37	1590 × 540 x 650	4" x 21"	1
Perge 140	SS 304	5000	150 - 200	50	0.64	1590 × 540 x 650	4" x 40"	1
Perge 240	SS 304	10000	150 - 200	50	0.64	1590 × 540 x 650	4" x 40"	2
Perge 340	SS 304	15000	150 - 200	60	1.1	1590 × 540 x 650	4" x 40"	3
Perge 440	SS 304	20000	150 - 200	60	1.5	1590 × 540 x 650	4" x 40"	4
Perge 540	SS 304	25000	150 - 200	60	2.2	1590 × 540 x 650	4" x 40"	5
Perge 640	SS 304	30000	150 - 200	60	2.2	1590 × 540 x 650	4" x 40"	6
Perge 840	EPOXY	40000	150 - 200	60	2.2	1250 × 600 x 2500	4" x 40"	8
Perge 840	SS 304	40000	150 - 200	60	2.2	1250 × 600 x 2500	4" x 40"	8
Perge 940	EPOXY	45000	150 - 200	60	2.2	1250 × 600 x 2500	4" x 40"	9
Perge 940	SS 304	45000	150 - 200	60	2.2	1250 × 600 x 2500	4" x 40"	9
Perge 1040	EPOXY	50000	150 - 200	60	2.2	2700 × 1400 x 750	4" x 40"	10
Perge 1040	SS 304	50000	150 - 200	60	2.2	2700 × 1400 x 750	4" x 40"	10
Perge 1240	EPOXY	60000	150 - 200	60	3	1350 × 600 x 3500	4" x 40"	12
Perge 1240	SS 304	60000	150 - 200	60	3	1350 × 600 x 3500	4" x 40"	12

Perge 1540	EPOXY	75000	150 - 200	60	3	1550 × 700 x 3500	4" x 40"	15
Perge 1540	SS 304	75000	150 - 200	60	3	1550 × 700 x 3500	4" x 40"	15

- Feed water TDS: 0 - 2,000 ppm
- Feed water pressure: 2 to 5 bar
- Feed water pH range: 6 - 8
- Silica (SiO_2) tolerance: Maximum 25 ppm
- Feed water temperature (Min. / Max.): 10 °C - 30 °C
- Max. iron (Fe) tolerance: 0.05 ppm (if ASC is not dosed) / 0.2 ppm (if ASC is dosed)
- Hydrogen sulphide must not be present.
- Turbidity must not be present (NTU < 1), oil and grease must not be present, SDI < 5, microbiological contamination must not be present.

REVERSE OSMOSIS (RO) SYSTEM PROCESS STEPS

STEP / PROCESS	INPUT / COMPONENT	OPERATION / FUNCTION	TECHNICAL PARAMETER	OUTPUT / RESULT
1. Raw Water Inlet	Well water Mains water Seawater Surface water	Raw water is fed to the system for treatment.	---	Raw Water
2. Pre-treatment	Sand filter Activated carbon filter Cartridge filter (1–5 µm) Antiscalant dosing Softening system	The water is pre-treated to protect the membranes.	1 – 5 micron filtration rating	Filtered Water
3. High-Pressure Pump	High-Pressure Pump	The water is raised to the pressure at which the membranes can operate.	Fresh water: 8–20 bar Brackish water: 15–30 bar Seawater: 55–80 bar	Pressurised Water
4. RO Membranes	Reverse Osmosis Membranes	Only water molecules can pass through the membrane pores.	~0.0001 micron pore diameter	Separated Flow
5. Outlet / Separation	Membrane Outlet Line	The flow is directed into two separate outlet lines.	---	Permeate: Product water Concentrate: Wastewater

Aspendos Series Industrial Reverse Osmosis System

It is an advanced treatment technology that separates dissolved salts, heavy metals, bacteria, viruses and other contaminants from water by means of a semi-permeable membrane. Today it is used in many fields, from drinking water production to industrial process water and the conversion of seawater into drinking water.





APPLICATIONS

- Aspendos Series Industrial Reverse Osmosis Systems are used in many sectors.

Food and Beverage Industry: Provides high-quality process water in beverage production, dairies, soft drink production and food processes.

Hotels and Hospitality Facilities: Preferred for boiler systems, laundries, kitchens and utility water treatment.

Power Plants: Used in the preparation of steam boiler feed water.

Chemical Industry: Meets the demand for pure water in chemical production processes.

Pharmaceutical Industry: Offers reliable solutions for the production of high-purity process water.

Textile Industry: Improves product quality by providing good-quality water in dyeing and washing processes.

Agriculture and Greenhouse Systems: Reduces the salinity of irrigation water.

Electronics Industry: Provides low-conductivity water for electronics production processes.

ADVANTAGES

High Water Quality: Produces process water with a very low conductivity value.

Energy Saving: Energy consumption is minimised thanks to high-efficiency pump and membrane technology.

Automatic Operation: Provides fully automatic operation with a PLC-controlled automation system.

Low Operating Cost: Reduces chemical consumption and keeps maintenance costs to a minimum.

Long Membrane Life: Thanks to correct pretreatment, the membranes operate at high performance for many years.

Modular Design: Capacity can be increased easily as the facility grows.

Compact Structure: Thanks to its minimum-footprint design, it can be installed even in confined spaces.

SYSTEM FEATURES

Membranes: FRP membrane housings; TFC spiral-wound membranes of 8″ diameter.

High-Pressure Pump: AISI 304 or AISI 316 grade stainless steel vertical centrifugal high-pressure pump.

Body / Frame Structure: ST-37 epoxy-painted carbon steel frame (optional stainless steel frame).

Pre-filtration: Cartridge filter with 5 micron filtration rating (optional Styre filter)

Piping and Installation (Standard): Aspendos 180 - 3080: low and high-pressure pipes in U-PVC PN16.

Piping and Installation (High Capacity): Aspendos 3680 - 7280: low-pressure U-PVC PN16, high-pressure AISI 304 stainless steel.

Automation and Valves: PLC control system and automatic valves with electric actuators.

Power Supply: 380V / 50Hz / 3 Phase (three-phase).

ASPENDOS SERIES REVERSE OSMOSIS SYSTEM TECHNICAL DATA TABLE

MODEL	CAPACITY (m^3/h)	VOLTAGE (V/Hz)	SYSTEM EFFICIENCY (%)	ENERGY (kW)	OPERATING PRESSURE	DIMENSIONS (mm)	NUMBER OF PRESSURE VESSELS	NUMBER OF MEMBRANES	MEMBRANE DIMENSIONS
Aspendos 180	1	380V/50Hz	50	3	12	1250×1300 x900	1	1	8" x 40"
Aspendos 280	2	380V/50Hz	50	3	12	1250×1300 x900	2	2	8" x 40"
Aspendos 380	3	380V/50Hz	60	4	12	1400×4000 x900	1	3	8" x 40"
Aspendos 480	4	380V/50Hz	60	4	12	1400×4000 x900	2	4	8" x 40"
Aspendos 680	6	380V/50Hz	60	4	12	1550×1000 x900	2	6	8" x 40"
Aspendos 880	8	380V/50Hz	70	7.5	12	1750×1750x 900	2	8	8" x 40"
Aspendos 1080	10	380V/50Hz	70	11	12	1750×5750 x900	2	10	8" x 40"
Aspendos 1280	12	380V/50Hz	75	11	12	1750×7000 x900	2	12	8" x 40"
Aspendos 1580	15	380V/50Hz	75	11	12	1800×5750 x900	3	15	8" x 40"
Aspendos 1880	18	380V/50Hz	75	18.5	12	1800×7000 x900	3	18	8" x 40"
Aspendos 2480	24	380V/50Hz	75	22	12	1800×7000 x900	4	24	8" x 40"
Aspendos 3080	30	380V/50Hz	75	22	12	2200×7000 x1000	5	30	8" x 40"
Aspendos 3680	36	380V/50Hz	75	30	12	2200×7000 x1400	6	36	8" x 40"
Aspendos 4280	42	380V/50Hz	75	30	12	1800×7000 x1400	7	42	8" x 40"
Aspendos 4880	48	380V/50Hz	75	30	12	1800×7000 x1400	8	48	8" x 40"
Aspendos 6080	60	380V/50Hz	75	37	12	2500×7000 x1400	10	60	8" x 40"
Aspendos 7280	72	380V/50Hz	75	45	12	2100×7000 x2100	12	72	8" x 40"

- Feed water TDS: 0 - 2,000 ppm
- Feed water pressure: 2 to 5 bar
- Feed water pH range: 6 - 8
- Silica (SiO_2) tolerance: Maximum 25 ppm
- Feed water temperature (Min. / Max.): 10 °C - 30 °C
- Max. iron (Fe) tolerance: 0.05 ppm (if ASC is not dosed) / 0.2 ppm (if ASC is dosed)
- Hydrogen sulphide must not be present.
- Turbidity must not be present (NTU < 1), oil and grease must not be present, SDI < 5, microbiological contamination must not be present.

Olympos Series Industrial Reverse Osmosis System

It is an advanced treatment technology that separates dissolved salts, heavy metals, bacteria, viruses and other contaminants from water by means of a semi-permeable membrane. Today it is used in many fields, from drinking water production to industrial process water and the conversion of seawater into drinking water.





APPLICATIONS

- Olympos Series Industrial Reverse Osmosis Systems are used in many sectors.

Food and Beverage Industry: Provides high-quality process water in beverage production, dairies, soft drink production and food processes.

Hotels and Hospitality Facilities: Preferred for boiler systems, laundries, kitchens and utility water treatment.

Power Plants: Used in the preparation of steam boiler feed water.

Chemical Industry: Meets the demand for pure water in chemical production processes.

Pharmaceutical Industry: Offers reliable solutions for the production of high-purity process water.

Textile Industry: Improves product quality by providing good-quality water in dyeing and washing processes.

Agriculture and Greenhouse Systems: Reduces the salinity of irrigation water.

Electronics Industry: Provides low-conductivity water for electronics production processes.

ADVANTAGES

High Water Quality: Produces process water with a very low conductivity value.

Energy Saving: Energy consumption is minimised thanks to high-efficiency pump and membrane technology.

Automatic Operation: Provides fully automatic operation with a PLC-controlled automation system.

Low Operating Cost: Reduces chemical consumption and keeps maintenance costs to a minimum.

Long Membrane Life: Thanks to correct pretreatment, the membranes operate at high performance for many years.

Modular Design: Capacity can be increased easily as the facility grows.

Compact Structure: Thanks to its minimum-footprint design, it can be installed even in confined spaces.

SYSTEM FEATURES

System Type: Seawater desalination system.

Membrane Housings and Type: FRP housings, 8 inch diameter TFC spiral-wound membranes.

High-Pressure Pump: AISI 316 or duplex grade stainless steel high-pressure pump.

Frame Structure: ST-37 epoxy-painted carbon steel or AISI 304 / AISI 316 stainless steel.

Pre-filtration: Cartridge filtration with 5 micron rating.

Piping Lines: Low-pressure U-PVC PN16; high-pressure AISI 316Ti or duplex stainless steel.

Control & Safety: Inlet butterfly valve with electric actuator, low and high pressure switches.

Measurement & Indicators: Water flow meters, glycerine-filled pressure gauges, 0-2000 µS/cm conductivity indicator (optional pH meter).

Automation & Panel: PLC control, On-Off switch, alarm/status lamps, 380V/50Hz/3ph, IP56 panel.

OLYMPOS SERIES REVERSE OSMOSIS SYSTEM TECHNICAL DATA TABLE

MODEL	CAPACITY (m^3/day)	SYSTEM EFFICIENCY (%)	NUMBER OF HOUSINGS	MEMBRANE DIMENSIONS	NUMBER OF MEMBRANES
Olympos 880	100	40	2	8"x40"	8
Olympos 1280	150	40	3	8"x40"	12
Olympos 1880	250	40	3	8"x40"	18
Olympos 2480	300	40	4	8"x40"	24
Olympos 2580	350	40	4	8"x40"	24
Olympos 3080	400	40	5	8"x40"	30
Olympos 3680	500	40	6	8"x40"	36
Olympos 4280	700	40	2	8"x40"	42
Olympos 6080	800	40	6	8"x40"	36
Olympos 7280	1000	40	12	8"x40"	72
Olympos 11480	1500	40	19	8"x40"	114

- Feed water TDS: 38,000 – 41,000 ppm
- Operating pressure: between 50 and 70 bar
- Feed water pressure: between 2 and 5 bar
- pH range: 6 – 8
- Max. feed water temperature: 30 °C max.
- Hydrogen sulphide must not be present.
- Turbidity must be absent (NTU < 1)

Ultrafiltration System

Ultrafiltration (UF) is an advanced water treatment method that uses membrane technology to remove suspended solids, colloids, bacteria, viruses and high molecular weight organic substances from water.





APPLICATIONS

- Drinking water treatment plants
- Seawater reverse osmosis pre-treatment
- Industrial process water
- Food and beverage industry
- Pharmaceutical industry
- Hotels and hospitality facilities
- Municipalities
- Wastewater reclamation systems
- Agricultural irrigation water preparation

ADVANTAGES

- Reduces chemical use.
- Produces continuous, high-quality water.
- Has low energy consumption.
- Provides long membrane life through automatic backwash.
- Provides excellent pre-treatment for reverse osmosis (RO) systems.

OPERATING PRINCIPLE

Technology: Water is passed under pressure through membranes with a pore diameter of approximately 0.01–0.1 micron.

Passes through (Permeate): Water, dissolved minerals, salts, low molecular weight substances.

Retained (Concentrate): Suspended solids, particles causing turbidity, bacteria, the vast majority of viruses, algae, colloids.

WHY SHOULD AN ULTRAFILTRATION SYSTEM BE CHOSEN?

Ultrafiltration systems are one of the most efficient solutions for producing quality water, protecting equipment and reducing operating costs. Thanks to membrane technology, they provide consistently high performance while also contributing to environmental sustainability by reducing chemical consumption.

THE DIFFERENCE BETWEEN ULTRAFILTRATION AND REVERSE OSMOSIS

An ultrafiltration system does not remove dissolved salts and minerals. Instead, it filters suspended solids and microorganisms. Reverse osmosis systems, on the other hand, also remove dissolved salts, heavy metals and ions from the water, producing water of much higher purity. For this reason, ultrafiltration systems are often used as the pre-treatment unit of reverse osmosis systems.

Seawater Desalination Systems

Seawater desalination systems are advanced water treatment solutions that use advanced membrane technologies to convert seawater with a high salinity level into drinking water, process water or utility water.





How Does a Seawater Desalination System Work?

Treatment Process Stages

Model	Description	Note
1. Water Intake System	Seawater is taken into the system through an open sea intake line or beach wells.	—
2. Pre-treatment	—	Pre-treatment improves system performance by reducing membrane fouling.
3. High-Pressure Pump	A pressure of approximately 55–80 bar is applied so that seawater can pass through the reverse osmosis membranes.	—
4. Reverse Osmosis (SWRO)	Under high pressure, seawater is passed through special membranes. The following are removed at this stage: • 98–99.8% of dissolved salts • Bacteria and viruses • Heavy metals • Most of the organic contaminants	—
5. Post Treatment	Depending on the intended use, the treated water is made ready for use by pH adjustment, mineral balancing (remineralisation), UV disinfection and chlorine dosing.	—

System Components and Energy Recovery

Main System Components

- Seawater intake system
- Automatic self-cleaning filter
- Sand filtration system
- Cartridge filter
- Chemical dosing systems
- High-pressure pump
- SWRO membranes
- Energy recovery device (ERD) (optional)
- CIP (Clean-in-Place) system
- UV disinfection system
- Mineral balancing unit
- PLC-controlled automation system

Energy Recovery Systems (ERD)

Parameters to Consider

Critical Design Criteria

- Salinity (TDS)
- Conductivity
- Turbidity (NTU)
- Temperature
- SDI (Silt Density Index)
- pH
- Organic matter content
- Risk of algae and biological contamination

Important Note: Correct pre-treatment and regular maintenance extend membrane life and reduce operating costs.

Areas of Use and Advantages

Areas of Use

- Hotels and holiday villages
- Islands and coastal settlements
- Municipalities
- Industrial production facilities
- Power plants
- Ships and offshore platforms
- Mining facilities
- Military facilities
- Agricultural irrigation projects
- Emergency water supply systems

System Advantages

- Converts seawater into high-quality fresh water.
- Provides a continuous and reliable water source.
- Offers high salt removal efficiency.
- Can be integrated with energy recovery systems for low operating costs.
- Minimises user intervention thanks to automatic operation.
- Capacity can be increased easily thanks to its modular structure.
- It is a sustainable solution for regions experiencing water scarcity.

AFG Dubai Solutions

Turnkey Seawater Desalination Systems

- Project-specific engineering design
- High-efficiency SWRO membrane technology
- Low energy consumption with energy recovery systems
- Fully automatic PLC-controlled operation
- Remote monitoring and control options
- Modular and compact design
- Low operating cost and easy maintenance

With performance characteristics compliant with national and international drinking water standards, it provides reliable and sustainable water production.

Arsenic Removal System

An arsenic removal system is an advanced water treatment technology used to reduce arsenic, which may occur in groundwater and surface water sources naturally or as a result of industrial activities, to safe levels.





WHAT IS AN ARSENIC REMOVAL SYSTEM?

An arsenic removal system is an advanced water treatment system that removes dissolved Arsenic III (As^{3+}) and Arsenic V (As^{5+}) compounds from water using special filtration media and suitable pre-treatment processes.

Thanks to the filter media and process design selected according to the raw water analysis, the arsenic level is reduced below the applicable drinking water standards. The system also contributes to retaining particles that cause turbidity.

HOW DOES AN ARSENIC REMOVAL SYSTEM WORK?

The systems designed by AFG Dubai can operate with different process combinations according to the water analysis.

Pre-filtration: Sand, sediment and suspended solids in the water are removed by sand filters.

Oxidation (Where Required): Depending on the chemical form of the arsenic, oxidation is applied to increase filtration efficiency.

Arsenic Removal Filter: Dissolved arsenic is retained in the filter bed by means of special adsorption media or arsenic-removing minerals.

Final Filtration: As required, the water is given a final treatment with activated carbon filters, cartridge filters or ultraviolet (UV) disinfection systems.

ADVANTAGES OF AFG ARSENIC REMOVAL SYSTEMS

- Arsenic removal in compliance with drinking water standards
- High filtration efficiency
- Automatic backwash feature
- Low operating cost
- Long-life filter media
- Fully automatic PLC-controlled operation
- Capacity increase thanks to modular design

- Easy maintenance and service
- Engineering solutions specific to different water analyses
- Turnkey installation and commissioning service

TECHNICAL SPECIFICATIONS

- Automatic or manual control options
- FRP, carbon steel or stainless steel filter vessel
- Automatic valves with electric or pneumatic actuators
- PLC automation system
- Flow and pressure indicators
- Automatic backwash programme
- Multiple filter design as required
- High-quality arsenic adsorption media

APPLICATIONS

AFG Arsenic Removal Systems are widely used in the following areas:

- Municipalities
- Drinking water treatment plants
- Village and neighbourhood water tanks
- Hotels and tourism facilities
- Industrial production facilities
- Food and beverage factories
- Hospitals
- Schools and public institutions
- Mass housing projects
- Agricultural irrigation projects
- Bottled water production facilities

WHY AFG DUBAI?

AFG Dubai carries out a water analysis specific to each project and determines the most suitable arsenic removal technology. Design, manufacturing, installation, commissioning and after-sales technical support services are offered under one roof. The company's solutions are engineered on a turnkey basis for drinking water, process water and industrial applications.

Iron and Manganese Removal Systems

An iron and manganese removal system is a special water treatment system that removes dissolved iron (Fe) and manganese (Mn) ions naturally present in groundwater and surface water, improving the colour, taste and quality of the water.





WHAT IS AN IRON AND MANGANESE REMOVAL SYSTEM?

An iron and manganese removal system is a special water treatment system that removes dissolved iron and manganese ions from water by oxidation and filtration methods.

Iron and manganese are generally present in dissolved form in groundwater. When these minerals come into contact with air, they oxidise and begin to precipitate. Iron forms brown deposits and manganese forms black deposits, which spoil the appearance of the water and cause build-up in piping systems.

In the systems developed by AFG Dubai, these minerals are removed effectively by using a suitable oxidation method and high-performance filter media.

PROBLEMS CAUSED BY IRON AND MANGANESE

Water with a high iron and manganese concentration may cause the following problems:

- Brown or black stains on taps and sinks
- Colour change in laundry
- Deposits and blockages in piping systems
- Loss of performance in pumps and valves
- Reduced efficiency in heat exchangers
- Build-up in boiler systems
- Quality problems in food and beverage production
- Fouling in membrane systems
- Deterioration in the taste and odour of the water
- Increase in maintenance and operating costs

HOW DOES AN IRON AND MANGANESE REMOVAL SYSTEM WORK?

- AFG Dubai systems may consist of different processes according to the water analysis.

1. Pre-filtration: Sand, sediment and suspended solids in the raw water are retained in mechanical filters.

2. Oxidation: Dissolved iron and manganese are converted into an insoluble form with the help of oxidants such as oxygen, air, chlorine, potassium permanganate or ozone.

3. Filtration: The oxidised iron and manganese are separated from the water by passing through special filter media. The filter media used may include options such as Manganese Dioxide-Based Media, Greensand Plus, Catalytic Media, Birm, Filox, Pyrolox, MangOx and catalytic sand.

4. Automatic Backwash: Contaminants accumulated in the filter bed are removed from the system by automatic backwashing at set intervals.

ADVANTAGES OF AFG IRON AND MANGANESE REMOVAL SYSTEMS

- High iron and manganese removal efficiency
- Low operating cost
- Fully automatic operation and PLC-controlled automation
- Automatic backwash system
- Low maintenance requirement and long-life filter media
- Modular design and energy-efficient operation
- Capacity options suitable for different flow rates
- Easy installation and service

TECHNICAL SPECIFICATIONS

Filter Body: FRP (Fibre Reinforced Polyester), epoxy-painted carbon steel, AISI 304 or AISI 316L stainless steel.

Control System: Time-controlled or flow-controlled automatic valve, PLC-controlled automation, touchscreen HMI (optional).

Connection Options: Threaded or flanged connection.

Operating Conditions: Operating pressure 2–8 bar (may vary depending on the project), operating temperature 5°C – 45°C.

Filter Media: Special iron and manganese removal media selected according to the water analysis.

APPLICATIONS

AFG Iron and Manganese Removal Systems are used reliably in the following areas:

Municipalities: Reduction of iron and manganese levels in drinking water networks.

Village and Neighbourhood Drinking Water Facilities: Bringing well water into compliance with drinking water standards.

Hotels and Tourism Facilities: Improving guest utility water quality and protecting installations.

Industrial Facilities: Improving process water quality and extending equipment life.

Food and Beverage Industry: Preventing unwanted colour, taste and sediment in production processes.

Textile Industry: Improving water quality in dyeing processes.

Power Plants: In boiler feed water pre-treatment systems.

Agricultural Irrigation: Preventing clogging in drip irrigation systems.

Residential and Housing Estate Projects: In central water treatment systems.

WHY AFG DUBAI?

AFG Dubai designs each project specifically according to the water analysis. Instead of a one-size-fits-all solution, the most suitable process is determined by taking into account the iron and manganese concentration of the water, pH value, dissolved oxygen level, flow rate requirement and intended use.

Our services: Water analysis evaluation, project planning and engineering, system design, manufacturing and installation, commissioning, operator training, periodic maintenance, spare parts supply and technical service support.

CORRECT PROCESS SELECTION IN IRON AND MANGANESE REMOVAL SYSTEMS

The chemical composition of every water source is different. Therefore, a single filter medium or a standard system may not be suitable for every application. AFG Dubai develops high-efficiency solutions by determining the oxidation method, filter media and automation structure according to a detailed water analysis. When required, the systems are integrated with activated carbon filters, water softening units, reverse osmosis (RO) systems and ultraviolet (UV) disinfection units to create comprehensive water treatment solutions.

Boron Removal Systems

A boron removal system is a water treatment system used to reduce the boron concentration found in natural waters, groundwater, surface waters or various industrial process waters to the desired levels.



Mechanical Filters





Key Features of Automatic Self-Cleaning Filters

Model	Description
Full Automation	Fully automatic backwash, PLC and differential pressure-controlled automation.
Continuous Operation	Continuous filtration with the possibility of backwash at low water consumption.
Cleaning Systems	Electric motor or hydraulic piston options; brush, vacuum nozzle and patented hybrid cleaning systems.
Filtration Range	Filtration options ranging from 10 to 3000 micron depending on the model.
Material and Design	AISI 304L and AISI 316L stainless steel body options, with a design suitable for high-flow industrial applications.

Main Areas of Use

- Reverse osmosis (RO) pre-filtration and Ultrafiltration (UF) systems
- Seawater desalination plants and surface/well water filtration
- Cooling towers, heat exchanger and pump protection lines
- Iron and steel industry, mining facilities and chemical plants
- Food and beverage production, agricultural irrigation and fish farms
- Hydroelectric power plants

Model List

Model	Description	Area of Use
NTU Terminator	Developed for the removal of high suspended solids (TSS) and turbidity.	Surface waters, river, lake, dam water
SPT-WBV-MR	Patented dual-action cleaning system with brush and vacuum nozzle.	Waters with a high dirt load
PFH-MR	Motor-driven, heavy-duty automatic self-cleaning filter.	Industrial processes, washing systems
FMS-V-MR	Motorised filter for low-flow applications.	Process water, equipment protection
FMS-W-MR	Motorised filter with Wedge Wire (slotted wire) screen.	Low-flow industrial applications
CFH-MR	Patented two-stage filtration system.	Applications requiring both fine and coarse filtration
KFH-WBVV-MR	Model developed for very high dirt loads.	Seawater, surface water, heavy industry
KFH-B-MR	Performs coarse filtration with brush and automatic backwash.	Pre-filtration systems
PTW-MR	Model that can be connected directly to large-diameter pipelines.	High-flow industrial facilities
PTW-VMR	Motorised, high-capacity version of the PTW series.	Main transmission lines
KQR-B-VMR	Automatic filter with full stainless steel body.	Seawater, surface water, RO pre-filtration
KTW-B-MR	Provides automatic coarse and fine filtration in a single body.	Sea, lake and surface waters
PFH	Standard automatic self-cleaning filter with piston.	General industrial filtration
SFH-P	Single-stage automatic filter with piston.	Clean water and process applications
SPT	Economical and multi-purpose automatic filtration solution.	General water filtration

Model List

Model	Length	Inlet / Outlet	Approximate Flow Rate
BIG ONE 23"	23 inch	3" Flange	15 m^3/h
BIG ONE 40"	40 inch	3" Flange	30 m^3/h

Filter Models Used

Big One Melt Blown Cartridge Series (FON BIG ONE)

Model	Micron	23" Flow Rate	40" Flow Rate
FON BIG ONE	1–10 µm	8.000 L/h	16.000 L/h
FON BIG ONE	5–20 µm	15.000 L/h	30.000 L/h
FON BIG ONE	20–50 µm	20.000 L/h	40.000 L/h

Big One String Wound Cartridge Series (FA BIG ONE)

Model	Micron	23" Flow Rate	40" Flow Rate
FA BIG ONE	5 µm	16.000 L/h	32.000 L/h

Big One Washable Cartridge Series (RLA BIG ONE)

Model	Micron	23" Flow Rate	40" Flow Rate
RLA BIG ONE	80 µm	30.000 L/h	45.000 L/h

Cartridge Filter Model List

Cartridges made of polypropylene (PP) that provide depth-type filtration.

1. Melt Blown (Sediment) Cartridge Filters

Model	Length	Filtration Precision
MB-5-1	5"	1 Micron
MB-5-5	5"	5 Micron
MB-5-10	5"	10 Micron
MB-10-1	10"	1 Micron
MB-10-5	10"	5 Micron
MB-10-10	10"	10 Micron
MB-20-1	20"	1 Micron
MB-20-5	20"	5 Micron
MB-20-10	20"	10 Micron
MB-30-5	30"	5 Micron
MB-40-1	40"	1 Micron
MB-40-5	40"	5 Micron
MB-40-10	40"	10 Micron
MB-40-20	40"	20 Micron
MB-40-50	40"	50 Micron

2. String Wound Cartridge Filters

Cartridges made by winding cotton, polypropylene or glass fibre yarns.

Model	Length	Filtration Precision
SW-10-1	10"	1 Micron
SW-10-5	10"	5 Micron
SW-10-10	10"	10 Micron
SW-20-5	20"	5 Micron
SW-20-10	20"	10 Micron
SW-20-25	20"	25 Micron
SW-30-5	30"	5 Micron
SW-40-1	40"	1 Micron
SW-40-5	40"	5 Micron
SW-40-10	40"	10 Micron
SW-40-25	40"	25 Micron
SW-40-50	40"	50 Micron

3. Pleated Cartridge Filters

Cartridges that offer a long service life thanks to their large filtration area.

Model	Length	Filtration Precision

PL-10-0.2	10"	0.2 Micron
PL-10-0.45	10"	0.45 Micron
PL-10-1	10"	1 Micron
PL-10-5	10"	5 Micron
PL-20-0.2	20"	0.2 Micron
PL-20-0.45	20"	0.45 Micron
PL-20-1	20"	1 Micron
PL-20-5	20"	5 Micron
PL-30-1	30"	1 Micron
PL-40-0.2	40"	0.2 Micron
PL-40-0.45	40"	0.45 Micron
PL-40-1	40"	1 Micron
PL-40-5	40"	5 Micron

4. Stainless Steel Cartridge Filters

Metal filter elements that provide long-life use thanks to their washable design.

Model	Length	Filtration Precision
SS-10-50	10"	50 Micron
SS-10-100	10"	100 Micron
SS-20-50	20"	50 Micron
SS-20-100	20"	100 Micron
SS-20-200	20"	200 Micron
SS-30-100	30"	100 Micron
SS-40-50	40"	50 Micron
SS-40-100	40"	100 Micron
SS-40-200	40"	200 Micron
SS-40-500	40"	500 Micron

Disinfection Systems





Ultraviolet Disinfection Systems Model List

UV Series Models

Model	Capacity	Connection Diameter	Number of Lamps	Body Material
UVS-500	0.5 m³/h	1/2"	1	SS304 / SS316L
UVS-1000	1 m³/h	1/2"	1	SS304 / SS316L
UVS-2000	2 m³/h	3/4"	1	SS304 / SS316L
UVS-3000	3 m³/h	1"	1	SS304 / SS316L
UVS-5000	5 m³/h	1¼"	1	SS304 / SS316L
UVS-8000	8 m³/h	1½"	2	SS304 / SS316L
UVS-10000	10 m³/h	2"	2	SS304 / SS316L
UVS-15000	15 m³/h	2½"	2	SS304 / SS316L
UVS-20000	20 m³/h	DN65	3	SS304 / SS316L
UVS-30000	30 m³/h	DN80	4	SS304 / SS316L
UVS-40000	40 m³/h	DN100	5	SS304 / SS316L
UVS-50000	50 m³/h	DN125	6	SS304 / SS316L
UVS-75000	75 m³/h	DN150	8	SS304 / SS316L
UVS-100000	100 m³/h	DN200	10	SS304 / SS316L
UVS-150000	150 m³/h	DN250	14	SS304 / SS316L
UVS-200000	200 m³/h	DN300	18	SS304 / SS316L

UV Lamp Options

Lamp Series

Model	Power
UVL-40	40 W
UVL-65	65 W
UVL-80	80 W
UVL-120	120 W
UVL-155	155 W
UVL-320 HO	320 W High Output

Optional Equipment

- UV intensity sensor
- UV dose monitoring system
- Touchscreen PLC control panel
- Automatic quartz sleeve cleaning system (Wiper)
- Online operating hours counter
- Lamp failure alarm
- High temperature protection
- Remote monitoring (Modbus / Ethernet)
- 220 V or 380 V operating options
- SS316L body option
- Hygienic design suitable for the food and pharmaceutical industries

Areas of Use

- Drinking water treatment systems
- Industrial process water
- Reverse osmosis (RO) systems
- Ultrafiltration (UF) systems
- Food and beverage facilities
- Pharmaceutical and cosmetics production
- Hospitals and laboratories
- Hotels and tourism facilities
- Bottling and filling lines
- Municipal drinking water facilities
- Seawater desalination systems
- Wastewater reclamation systems
- Agricultural irrigation systems
- Fish farms and aquaculture facilities

Standard Technical Specifications

UV-C Wavelength: 254 nm

- Effective disinfection against microorganisms
- Treatment without the use of chemicals
- Low energy consumption
- Stainless steel (SS304 or SS316L) reactor body
- Quartz protective sleeve
- Electronic ballast system
- Easy maintenance and lamp replacement
- Compact and modular design
- Continuous and reliable operation

Industrial Ozone Generators

- Model with Built-in Compressor (T Series)
- Model with External Air Supply (MH Series)
- Model with External Oxygen Supply (GH Series)
- Tube Systems
- Plate Systems
- Container Series
- Ozone Destruction Unit (DST Series)
- Remote Control Systems

Semi-Industrial Ozone Generators

- Air Plus Series
- Air Refresh Series
- Ozzy Series
- 97 Series
- TKZ-P98 Plus Series (98 Series)

Oxygen Generators

- PSA Oxygen Generators
- Industrial Oxygen Production Systems

Ozone Gas Measuring and Control Instruments

- OAC19 Series Industrial Ozone Gas Concentration Measuring Instrument
- OLC Series Industrial Dissolved Ozone Concentration Measuring Instrument
- Ozone Gas Analyser

- Ambient Air Ozone Gas Measuring Instruments
- Dissolved Ozone Measuring Instruments
- Ozone Gas Capacity Measuring Instruments

Accessories

- Venturi Injector
- Static Mixer
- Microbubble Pump
- Diffuser
- Check Valve

System Components

- Reaction Tanks
- Remote Monitoring and Control Systems
- Ozone Destruction (Off-Gas Destructor) Units

Greywater Treatment Systems

Greywater treatment systems are environmentally friendly water recycling systems that treat wastewater from baths, showers, washbasins and washing machines so that it can be reused. These systems help protect clean drinking water sources while significantly reducing water consumption and operating costs.





Greywater Sources

Places Where Greywater Is Obtained

- Shower and bathtub water
- Washbasin water
- Washing machine water

- Hotel and dormitory bathrooms
- Gyms
- Hospitality facilities

Note: Toilet (WC) wastewater is not included in greywater systems.

How Does a Greywater Treatment System Work?

Treatment Process Stages

Model	Description	Technologies Used	Methods Used
1. Pre-Filtration	Hair, fibres, sand, sediment and large particles are removed by mechanical filters.	—	—
2. Equalisation Tank	The collected greywater is held in the equalisation tank in order to balance variations in flow rate and quality.	—	—
3. Biological Treatment	—	MBR (Membrane Bioreactor), MBBR (Moving Bed Biofilm Reactor), Activated sludge system	—

4. Membrane Filtration	With ultrafiltration (UF) or MBR membranes, suspended solids, bacteria, most viruses and turbidity are removed with high efficiency.	—	—
5. Disinfection	—	—	UV disinfection, Chlorine dosing, Ozonation

Areas of Use

Places Where Treated Greywater Can Be Used

Important Warning: Treated greywater must not be used for drinking.

- Landscape and garden irrigation
- WC cistern supply
- Cooling towers
- Vehicle washing
- General cleaning
- Technical water in industrial processes
- Supply of fire water tanks

Advantages of Greywater Treatment Systems

System Advantages

- Significantly reduces clean water consumption.
- Saves on water bills.
- Reduces the volume of wastewater discharged.
- Contributes to sustainable water management.
- Provides an alternative water source during periods of drought.
- Reduces environmental impact.
- Can contribute to green building certificates (LEED, BREEAM, etc.).

AFG Dubai Solutions

Turnkey Greywater Recycling Systems

- Project-specific engineering design
- High-efficiency MBR, MBBR and ultrafiltration technologies
- Fully automatic PLC-controlled operation
- Low energy and operating costs
- Compact and modular design
- Easy maintenance and long equipment life

By offering solutions in line with national and international water quality standards, it helps businesses use their water resources more efficiently.

Wastewater Treatment Systems

Wastewater treatment is the whole of the physical, chemical and biological processes applied to bring water polluted by domestic, industrial or commercial activities to a quality that will not harm the environment or that allows reuse.

Reinforced Concrete Wastewater Treatment Systems

General Information and Process

Wastewater Treatment Process

Model	Equipment/ Units	Purpose	Equipment Used	Chemicals Used	Pollutants Removed	Most Common Systems	Parameters Removed	Systems Used	Methods
1. Pretreatment	Screens, grit and oil traps, equalisation tank.	Protection of pumps and equipment.	—	—	—	—	—	—	—
2. Physical Treatment	—	—	Sedimentation tanks, lamella clarifiers, DAF (Dissolved Air Flotation).	—	—	—	—	—	—
3. Chemical Treatment	—	—	—	PAC, ferric chloride, aluminium sulphate, polymer.	Phosphorus, heavy metals, colour, suspended solids.	—	—	—	—
4. Biological Treatment	—	—	—	—	—	Activated Sludge Process, MBBR, IFAS, SBR, MBR.	BOD, COD, ammonia, nitrogen, organic matter.	—	—
5. Advanced Treatment	—	—	—	—	—	—	—	Sand filters, activated carbon filters, ultrafiltration (UF), nanofiltration (NF), reverse osmosis (RO).	—
6. Disinfection	—	—	—	—	—	—	—	—	UV, ozone, chlorination.

7. Sludge Treatment	—	—	Thickener, belt press, filter press, screw press dewatering, centrifuge.	—	—	—	—	—	—

Areas of Use

- Organised Industrial Zones
- Food facilities
- Hotels and holiday villages
- Hospitals
- Textile factories
- Chemical facilities
- Metal plating facilities
- Beverage production facilities
- Slaughterhouses
- Dairy and dairy product plants
- Municipalities
- Housing projects

Benefits of Wastewater Treatment

- Ensures discharge in compliance with environmental legislation.
- Protects groundwater and surface water resources.
- Reduces water consumption.
- Allows the reuse of reclaimed water.
- Reduces operating costs.
- Supports sustainable production.
- Strengthens environmental responsibility and corporate reputation.

Packaged Wastewater Treatment Systems

General Description and Operating Principle

Operating Principle Processes

Model	Description
Pretreatment	Screen, equalisation tank, oil and grit trap (where required).
Biological Treatment	Activated sludge, MBBR, SBR, MBR (according to project requirements).
Sedimentation	Separation of biological sludge from the water and return of the sludge.
Disinfection	Disinfection of the effluent by UV or chlorination.
Sludge Management	Storage or dewatering of excess sludge.

Advantages

- Fast installation and commissioning
- Compact, space-saving design
- Low operating and maintenance costs
- Fully automatic operation possible
- Capacity can be increased thanks to the modular structure
- Portable and can be installed at a different location when required
- Shorter investment time than a reinforced concrete plant
- Treated water discharge in compliance with environmental legislation

Areas of Use

- Hotels and holiday villages
- Residential complexes
- Construction sites
- Factories
- Hospitals
- Schools and campuses
- Military facilities
- Mining sites
- Organised industrial zones
- Camps and living areas

Capacity Ranges

- 5–20 m^3/day
- 20–100 m^3/day
- 100–500 m^3/day
- 500–2,000 m^3/day

Note: Can be scaled up with modular systems for higher capacities.

AFG Dubai Solutions

End-to-End Engineering and Packaged Solutions

Demineralisation Systems

A water treatment system that removes all dissolved ions in water by means of ion exchange resins, producing pure water with very low conductivity.





Operating Principle

Demineralisation Process Stages

Model	Description
1. Pre-Filtration	• Sand filter • Activated carbon filter • Cartridge filter
2. Cation Resin	Removes positively charged ions and exchanges them with H^+ ions.
3. Anion Resin	Removes negatively charged ions and exchanges them with OH^- ions.
4. Mixed Bed (Optional)	A final polishing unit containing cation and anion resins together. It produces water of very high purity.
5. Pure Water Tank and Distribution System	The treated water is stored and sent to the points of use.

Areas of Use

Industrial Application Areas

- Power plants
- Boiler feed water
- Steam boilers
- Electronics manufacturing
- Pharmaceutical industry
- Laboratories
- Food and beverage facilities
- Chemical industry
- Automotive sector
- Paint and coating facilities
- Glass manufacturing
- Battery manufacturing

System Advantages

Advantages of the Demineralisation System

- Produces water with very low conductivity.
- Prevents scaling in boilers.
- Extends equipment life.
- Reduces energy consumption.
- Improves production quality.
- Reduces maintenance costs.
- Provides high-purity process water.

Demineralisation with Reverse Osmosis and RO + DI Solutions

Differences Between the Technologies and Their Combination

Model	Description
Demineralisation vs. Reverse Osmosis	Demineralisation (DI) and Reverse Osmosis (RO) are two different treatment technologies used to reduce dissolved minerals and contaminants in water. Although both systems produce high-quality water, they differ significantly in operating principles, operating costs and areas of use.
The Most Efficient Solution: RO + Demineralisation	In many industrial facilities that require high-purity water, reverse osmosis and demineralisation systems are used together. In this method, the reverse osmosis system first removes most of the dissolved salts in the water. The demineralisation (or mixed bed) unit then removes the remaining ions, producing high-purity water with very low conductivity. This combination reduces resin consumption, lowers operating costs and extends system life.

AFG Dubai Solutions

Engineering and Automation

Electrodeionisation (EDI) Systems

Electrodeionisation (EDI) is an advanced pure water production technology, used after reverse osmosis (RO), that combines ion exchange resins with an electric field to continuously remove dissolved ions from water.





Operating Principle

EDI Process Mechanism

Model	Description
Ion Removal	• Positively charged ions (cations) are removed by passing through cation-selective membranes. • Negatively charged ions (anions) are removed by passing through anion-selective membranes.
Continuous Regeneration	Because the electric field continuously renews the resins, regeneration with acid and caustic is not required. As a result, high-purity deionised water is obtained continuously.

System Components

EDI System Equipment

- Reverse osmosis (RO) system
- EDI modules
- DC power supply
- Pre-filtration system
- UV disinfection (optional)
- Polishing filter (optional)
- PLC-controlled automation system
- Conductivity and resistivity measuring instruments

Why Is RO + EDI Integration Important?

Advantages of Combining Reverse Osmosis and EDI

- Provides lower energy and operating costs.
- Eliminates the need for chemical regeneration.
- Offers continuous high-purity water production.

- Meets the high-purity requirements of the pharmaceutical, electronics and energy sectors.

Areas of Use

Industrial Application Areas

- Pharmaceutical and biotechnology facilities
- Electronics and semiconductor manufacturing
- Power plants
- Steam boiler feed water
- Laboratories
- Food and beverage industry
- Cosmetics manufacturing
- Chemical industry
- Hospitals
- All industrial processes requiring pure water

System Advantages

Advantages of the EDI System

- Does not require chemical regeneration.
- Produces pure water continuously and without interruption.
- Water with very low conductivity is obtained.
- Reduces operating and maintenance costs.
- Environmentally friendly; there is no acid or caustic consumption.
- Can operate fully automatically.
- Long resin life.
- Provides high reliability and process stability.

AFG Dubai Solutions

Engineering and Automation

Modular Water Tank

A modular water tank is a water storage solution assembled on site from bolted panels, which can easily be enlarged to suit different capacity requirements.





What Is a Modular Water Tank?

System Definition and Structure

Model	Description
General Features	A modular water tank is a water storage system built by assembling standard panel components, manufactured in the factory, at the project site, and it can be produced in the required volume. Unlike reinforced concrete tanks, the panels are joined with a bolted system. Thanks to this structure, the tank can be enlarged when required, relocated, or dismantled and reassembled for maintenance. This flexible structure makes modular tanks an ideal solution both for new investments and for facilities requiring a capacity increase.

Advantages of Modular Water Tanks

Main Advantages

- Can be produced in the required capacity.
- Quick assembly allows commissioning in a short time.
- Offers a more hygienic structure than reinforced concrete tanks.
- Has a long service life.
- Allows easy maintenance and cleaning.
- Repairs can be carried out part by part.
- Tank capacity can be increased later.
- Can be installed easily in different areas.
- Can be designed in compliance with earthquake regulations.
- Can be produced with materials suitable for drinking water storage.

What Should Be Considered When Selecting a Modular Water Tank?

Key Selection Criteria

- Daily water consumption
- Peak consumption volume
- Installation area
- Characteristics of the water to be stored
- Use for drinking water or process water
- Material selection (GRP, stainless steel, galvanised)
- Climatic conditions
- Future capacity expansion requirement
- Maintenance access
- Relevant standards and regulations

Expert Support: Design carried out with expert engineering support contributes both to optimising the investment cost and to building a long-lasting system.

Capacity Options

Production Ranges

1 m^3 - 5 m^3:

10 m^3 - 25 m^3:

50 m^3 - 100 m^3:

250 m^3 - 500 m^3:

1,000 m^3 and above:

Technical Specifications

Design and Equipment Elements

- Square or rectangular design
- Modular panel structure
- Bolted assembly system
- Internal and external support options
- Different panel thicknesses
- Overflow, drain and ventilation connections
- Level indicator integration
- Float system
- Sampling points
- Manhole cover
- Ladder and platform options

Maintenance and Cleaning

Periodic Inspection Steps

- Cleaning of internal surfaces
- Disinfection procedures
- Gasket checks
- Tightness check of fasteners
- Checking of ventilation filters
- Testing of level indicators
- Checking of inlet and outlet connections

Areas of Use

Hotels and Hospitality Facilities

Utility water storage, drinking water storage, fire water reserve, pool feed systems, boiler feed water storage.

Industrial Facilities

Food production facilities, beverage plants, textile industry, chemical plants, iron and steel industry, power plants, automotive and white goods manufacturing facilities.

Fire Water Tanks

- Sprinkler systems, fire cabinets, hydrant lines, fire brigade supply systems.

Greenhouses and Agricultural Irrigation Systems

Drip irrigation systems, sprinkler irrigation, greenhouse irrigation, fertiliser dosing systems, rainwater storage.

Hospitals and Healthcare Institutions

Operating theatres, intensive care units, laboratories, sterilisation centres, dialysis systems.

Municipalities and Drinking Water Facilities

- Drinking water storage, pumping stations, drinking water treatment plants, distribution tanks.

AFG Dubai Solutions

Engineering and Services

Feature	GRP	Stainless steel	Galvanised
Corrosion Resistance	Very high	Very high	Medium
Suitability for Drinking Water	Yes	Yes	Depends on the coating
Service Life	Long	Long	Medium–Long
Maintenance Requirement	Low	Low	Medium
Area of Use	Drinking water, process	Hygienic applications	Fire and industrial storage

Feature	Modular Water Tank	Reinforced Concrete Tank
Installation Time	Short	Long
Hygiene	High	Medium
Capacity Increase	Easy	Difficult
Portability	Yes	No
Maintenance	Easy	More Difficult
Repair	Panel by Panel	Structural Repair
Assembly	Bolted System	On-site Reinforced Concrete Construction
Corrosion Resistance	High	Medium
Cleaning and Disinfection	Easy	More Difficult
Capacity Change	Can Be Expanded Later	Reconstruction May Be Required
Operating Cost	Low	Medium
Service Life	Long	Long

FRP Filtration Tanks



Model	Volume (Litres)	Weight (kg)	Maximum Working Pressure	Temperature Range	Maximum Vacuum
14×47	101	11.6	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
14×52	115	12.55	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
14×65	148	14.80	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
16×28	76	10.46	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
16×52	153	15.75	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
16×65	194	18.65	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
18×65	261	41.5	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
21×62	330	49.1	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
24×65	413	84.4	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
24×72	491	58.8	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
30×72	708	90.25	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
36×72	984	123	150 PSI (10.5 BAR)	1-49 °C	-5'' Hg (127 mm Hg)
42×63	1274	195	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
42×72	1494	215	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
48×72	1895	247	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
63×67	2451	306	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)
63×86	3306	360	150 PSI (10.5 BAR)	1-65 °C	-5'' Hg (127 mm Hg)

Automatic Control Valves

Automatic control valves are among the most important equipment for efficient, reliable and uninterrupted operation in water treatment systems. Used in filtration, water softening, activated carbon filtration, iron and manganese removal and multimedia filter systems, these valves carry out backwash, rinse, service and regeneration operations fully automatically. By eliminating the need for manual intervention, automatic control valves increase the performance of water treatment systems while also reducing operating costs. They are preferred in many areas, from domestic applications to large industrial facilities.



Model	Application	Control Type	Regeneration	Max. Flow Rate	Inlet/Outlet	Drain	Tank Conn.	Distributor Tube	Suitable Tank	Working Pressure	Temperature	Power Supply
F67B1	Filter	Automatic	Time-based	4	1"	1"	2.5"-8N PSM	1.05" OD (26.7 mm)	6"–14"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F67B1-A	Filter	Automatic	Time-based	6	1"	1"	4"-8UN	1" (32 mm)	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F67C1	Filter	Automatic	Flow-Based	4	1"	1"	2.5"-8N PSM	1.05" OD	6"–14"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V

F67C3	Filter	Automatic	Flow-Based	4	1"	1"	2.5"-8N PSM	1.05" OD	6"–14"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F67G1	Filter	Automatic	Time + Pressure	4	1"	1"	2.5"-8N PSM	1.05" OD	6"–14"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F67I1	Filter	Automatic	External Signal	4	1"	1"	2.5"-8N PSM	1.05" OD	6"–14"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F67M	Filter	Automatic	Multiple Programmes	4	1"	1"	2.5"-8N PSM	1.05" OD	6"–14"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F71B1	Filter	Automatic	Time-based	2	1"	1"	2.5"-8N PSM	1.05" OD	6"–10"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F71B3	Filter	Automatic	Time-based	2	1"	1"	2.5"-8N PSM	1.05" OD	6"–10"	0.15–0.60 MPa	5–50°C	AC100–240V → DC12V
F75A1	Filter	Automatic	Time-based	10	2"	2"	4"-8UN	1.5"	16"–24"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F75B1	Filter	Automatic	Flow-Based	10	2"	2"	4"-8UN	1.5"	16"–24"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F77B1	Filter	Automatic	Time-based	15	2"	2"	4"-8UN	1.5"	18"–30"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F77AS	Filter	Automatic	Time-based	15	2"	2"	4"-8UN	1.5"	18"–30"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F77CS	Filter	Automatic	Flow-Based	15	2"	2"	4"-8UN	1.5"	18"–30"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F79A-LCD	Filter	LCD Display	Time-based	20	2½"	2½"	4"-8UN	2"	24"–36"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F79B-LCD	Filter	LCD Display	Flow-Based	20	2½"	2½"	4"-8UN	2"	24"–36"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F80	Filter	Automatic	Time-based	25	3"	3"	Flanged	2"	30"–48"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F83A3	Filter	Automatic	Time-based	40	DN65	DN65	Flanged	2.5"	36"–63"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F83B3	Filter	Automatic	Flow-Based	40	DN65	DN65	Flanged	2.5"	36"–63"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F84	Filter	Automatic	Time-based	50	DN80	DN80	Flanged	3"	42"–72"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F85	Filter	Automatic	Time-based	60	DN100	DN100	Flanged	3"	48"–72"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F86	Filter	Automatic	Flow-Based	80	DN100	DN100	Flanged	4"	54"–84"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F87	Filter	Automatic	Flow-Based	100	DN125	DN125	Flanged	4"	63"–96"	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V

F88A	Filter	Automatic	Time-based	120	DN150	DN150	Flanged	4"	72"+	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F88C	Filter	Automatic	Flow-Based	120	DN150	DN150	Flanged	4"	72"+	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F90A	Filter	PLC	Time-based	150	DN150	DN150	Flanged	4" Ind.	Industrial	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F90B	Filter	PLC	Flow-Based	150	DN150	DN150	Flanged	4" Ind.	Industrial	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F90C	Filter	PLC	Differential Pressure	150	DN150	DN150	Flanged	4" Ind.	Industrial	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F90D	Filter	PLC	External Signal	150	DN150	DN150	Flanged	4" Ind.	Industrial	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F91	Filter	Automatic	Time-based	200	DN200	DN200	Flanged	4" Large	Industrial	0.15–0.60 MPa	5–50°C	AC100–240V → DC24V
F95B1	Filter	Automatic	Time (Side)	21.6	2"	2"	Side Mnt	2"	30"–36"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F95B3	Filter	Automatic	Flow (Side)	21.6	2"	2"	Side Mnt	2"	30"–36"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F95C3	Filter	Automatic	Flow (Upflow)	21.6	2"	2"	Side Mnt	2"	20"–30"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F95D1	Filter	Automatic	Time (Upflow)	21.6	2"	2"	Side Mnt	2"	36"–40"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F95D3	Filter	Automatic	Flow (Upflow)	21.6	2"	2"	Side Mnt	2"	36"–40"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F96B1	Filter	Automatic	Time (Side)	50	DN80	DN80	Side Mnt	DN80	36"–48"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F96B3	Filter	Automatic	Flow (Side)	50	DN80	DN80	Side Mnt	DN80	36"–48"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F98A	Filter	Automatic	Time-based	10	2"	2"	4"-8UN	1.5"	16"–24"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F98C	Filter	Automatic	Flow-Based	10	2"	2"	4"-8UN	1.5"	16"–24"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F99B1	Filter	Automatic	Time-based	15	2"	2"	4"-8UN	1.5"	10"–30"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F99B3	Filter	Automatic	Flow-Based	15	2"	2"	4"-8UN	1.5"	10"–30"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F99D1	Filter	Automatic	Time (Upflow)	15	2"	2"	4"-8UN	1.5"	10"–30"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V
F99D3	Filter	Automatic	Flow (Upflow)	15	2"	2"	4"-8UN	1.5"	10"–30"	0.20–0.60 MPa	5–50°C	AC100–240V / DC24V

F104	Filter	Automatic	Timer	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F107A	Filter	Timer	Timer	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F107B	Filter	Volumetric	Flow-Based	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F107C	Filter	Timer	Timer	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F107D	Filter	Volumetric	Flow-Based	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F109	Filter	Automatic	Timer	8	1½"	4"	-	-	14"–24"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F111B1	Filter	Timer	Timer	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F111B3	Filter	Volumetric	Flow-Based	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F112AS	Filter	Timer	Timer	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F112B1	Filter	Timer	Timer	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F112B3	Filter	Volumetric	Flow-Based	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F112C3	Filter	Volumetric	Flow-Based	20	2"	4"	-	-	24"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F118A	Filter	Timer	Timer	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F118B	Filter	Volumetric	Flow-Based	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F120A3	Filter	Volumetric	Flow-Based	8	1½"	4"	-	-	14"–24"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F120B	Filter	Timer	Timer	8	1½"	4"	-	-	14"–24"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F131A	Filter	Timer	Timer	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F131B	Filter	Volumetric	Flow-Based	5	1"	2.5"	-	-	10"–16"	0.15–0.60 MPa	5–50°C	AC100–240V / DC12V
F134A1	Filter	Timer	Timer	8	1½"	4"	-	-	14"–24"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V
F138	Filter	Automatic	Timer	25	2½"	4"	-	-	30"–48"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V

F139	Filter	Automatic	Timer	30	3"	Flange	-	-	36"–63"	0.15–0.60 MPa	5–50°C	AC100–240V / DC24V

Model Code	Control / Operation Type	Flow Capacity	Inlet / Outlet	Drain	Tank Connection	Application Area
F65P3 / F65Q	Time-Based (Automatic)	4.5 m^3/h	1" NPT	1" NPT	2.5"-8NPSM	Domestic-type water softening systems
F69A3 / F69Q	Flow / Volume-Based (Automatic)	4.5 m^3/h	1" NPT	1" NPT	2.5"-8NPSM	Domestic-type smart softening
F68	Upflow	4.5 m^3/h	1" NPT	1" NPT	2.5"-8NPSM	High-efficiency domestic softening
F92A	Flow-Based (LED/LCD)	2.5 - 4.0 m^3/h	3/4" or 1"	1"	2.5"-8NPSM	Compact residential-type softening
F63B / F63C	Manual (Hand-Operated)	4.0 m^3/h	1" NPT	1" NPT	2.5"-8NPSM	Economical, non-electric systems
F73 / F73A	Duplex (Twin / Alternating)	4.5 - 6.0 m^3/h	1" NPT	1" NPT	2.5"-8NPSM	Uninterrupted soft water 24 hours a day
F74 / F74A	Commercial-Type Automatic	10.0 m^3/h	1.5" - 2"	1" - 1.5"	4"-8UN	Commercial and light industrial facilities
F117 / F117Q	High-Flow Commercial	10.0 - 20.0 m^3/h	1.5" NPT	1"	4"-8UN	Large commercial businesses and hotels
N74 / N77	Industrial Flanged	25.0 - 35.0 m^3/h	2" - 2.5" Flanged	2"	Flanged / Special	Large-scale industrial facilities

Dosing Pump and Measuring Instrument Models





1. NOVA SERIES DOSING PUMPS

- This is the latest-generation series of electromagnetic diaphragm dosing pumps.

Models and Areas of Use:

- Nova A: Analogue / General chemical dosing
- Nova AP: Analogue Pulse / Flow-controlled dosing
- Nova APS: Analogue Pulse + Level / Water treatment systems
- Nova DS: Digital / Industrial processes
- Nova DMS: Digital Volumetric / Precision dosing
- Nova PR: pH / ORP Controlled / Automatic pH and ORP control

Key Features: Microprocessor-controlled, solenoid diaphragm technology, manual or automatic operation, pulse input, level sensor input, alarm output, analogue and digital options, pH / ORP controlled models.

2. LARA SERIES DOSING PUMPS

- This is Enelsa's most widely used series of electromagnetic dosing pumps.

Models:

- Lara A: Analogue, with On/Off Button
- Lara APS: Analogue, Liquid Level Controlled, 1/10 Adjustable
- Lara DS: Digital, Time-Adjustable, Flow-Controlled
- Lara DMS: Digital Volumetric Dosing
- Lara PR: Digital pH / ORP Controlled

Areas of Use: pH Dosing, Chlorine Dosing, Antiscalant, Caustic, Acid, Coagulant, Flocculant, Biocide, Food Chemicals.

3. OPTIMA SERIES DOSING PUMPS

- High-precision digital dosing pumps.

Models: Optima A, Optima APS, Optima DS, Optima DMS, Optima PR.

Features: LCD screen, digital control, pulse inputs, 4-20 mA control, pH control, ORP control, timer function, flow-controlled dosing.

4. NANO SERIES DOSING PUMPS

- Developed for compact applications.

Models: Nano A (Analogue Dosing Pump).

Areas of Use: Small RO systems, laboratories, pools, small chemical dosing applications.

5. LIKYA SERIES DOSING PUMPS

- High-flow electromagnetic dosing pumps.

Models: Likya A, Likya APS, Likya DS, Likya DMS, Likya PR.

Areas of Use: Municipal treatment plants, large industrial facilities, cooling towers, wastewater treatment plants.

6. EMD SERIES ELECTRO-MECHANICAL DIAPHRAGM DOSING PUMPS

- A series of motor-driven, high-flow dosing pumps.

Models:

- EMD P: Electro-Mechanical Diaphragm with Plastic Housing
- EMD M: Electro-Mechanical Diaphragm with Metal Housing

Technical Specifications: Continuous operation, high flow rate, industrial use, chemical-resistant housing, low maintenance requirement.

7. PERISTALTIC DOSING PUMPS

- Developed for precise, low-flow dosing applications.

Models: Peristaltic Analogue, Peristaltic Digital, Peristaltic Timer-Controlled.

Areas of Use: Sampling, laboratories, food sector, chemical dosing, low-flow processes.

TECHNICAL CAPACITIES AND USAGE INFORMATION

Technical Capacities:

- Minimum Dosing: precision below 0.1 ml/stroke
- Maximum Flow Rate (Solenoid): 25 L/h
- Maximum Pressure (Solenoid): 20 bar
- Mechanical Diaphragm Flow Rate: 1.4 – 150 L/h
- Maximum Pressure (Mechanical): 5–7 bar
- Control Type: Analogue / Digital / pH / ORP / Pulse / 4–20 mA

Chemicals That Can Be Used: Sodium Hypochlorite, Sulphuric Acid, Hydrochloric Acid, Caustic (NaOH), Antiscalant, Coagulant, Flocculant, Ferric Chloride, Alum, Polymer, Hydrogen Peroxide, Nutrient Chemicals, Biocide, pH Regulators.

Main Areas of Use: Drinking water treatment plants, wastewater treatment plants, reverse osmosis (RO) systems, ultrafiltration (UF) systems, pool and SPA systems, food and beverage production, chemical industry, textile facilities, power plants, cooling towers, paper and pulp industry, pharmaceutical and cosmetics production, municipal water treatment plants, agricultural irrigation and fertigation systems.

AQUATIC SERIES

The Aquatic Series consists of compact measuring and control instruments developed especially for swimming pools, SPA systems, ornamental pools and water disinfection applications.

Models and Areas of Use:

- Aquatic: pH + ORP / Swimming Pools
- Aquatic FCL: pH + Free Chlorine / Pool Disinfection
- Aquatic pH ORP: pH + ORP Control System / Hotel and Residential Complex Pools
- Aquatic pH FCL: pH + Free Chlorine Control System / Drinking Water and Pool Water
- Aquatic Peristaltic: pH & ORP Control System with Built-in Peristaltic Pump / Compact Pool Systems

General Features: pH measurement, ORP (redox) measurement, free chlorine measurement, automatic chemical dosing control, LCD screen, digital calibration, alarm outputs, dosing pump control, compact panel design, easy installation. Optimised for swimming pools and SPA systems.

OMNICON SINGLE-PARAMETER SERIES

The OmniCon Series is a family of professional measuring and control instruments developed by Enelsa with a modular structure.

Models and Measurements:

- OMNICON pH: pH Measuring and Control Instrument
- OMNICON ORP: Redox (ORP) Measuring and Control Instrument
- OMNICON CON: Conductivity (EC) Measuring and Control Instrument
- OMNICON FCL: Free Chlorine Measuring and Control Instrument
- OMNICON FCL Selective: Selective Free Chlorine Measuring System
- OMNICON Chlorine Dioxide: ClO_2 Measuring and Control Instrument
- OMNICON Ozone: Ozone Measuring and Control Instrument

- OMNICON Hydrogen Peroxide: H_2O_2 Measuring and Control Instrument
- OMNICON GP: General-Purpose 4–20 mA Measuring Instrument

OMNICON DUAL-PARAMETER SERIES

Models and Measured Parameters:

- OMNICON pH ORP: pH + ORP
- OMNICON pH CON: pH + Conductivity
- OMNICON pH FCL: pH + Free Chlorine
- OMNICON pH GP: pH + General-Purpose Input
- OMNICON 2 GP: Dual General-Purpose Analogue Input

OMNICON TRIPLE-PARAMETER SERIES

Models and Measured Parameters:

- OMNICON pH ORP CON: pH + ORP + Conductivity
- OMNICON pH ORP FCL: pH + ORP + Free Chlorine
- OMNICON pH ORP GP: pH + ORP + General-Purpose
- OMNICON pH CON GP: pH + Conductivity + General-Purpose
- OMNICON EXPERT: pH + Conductivity + Free Chlorine + Total Chlorine + Combined Chlorine

OMNICON MULTI PARAMETER SERIES

Models and Measured Parameters:

- OMNICON Multi Parameter: measurement of up to 6 parameters
- OMNICON Tower: pH + Conductivity + Temperature
- OMNICON Tower AS: pH + EC + Temperature
- OMNICON Tower S272G: Cooling Tower Control System
- OMNICON pH ORP CON FP: pH + ORP + EC + Temperature + Trace Element
- OMNICON pH ORP FCL Selective: pH + ORP + Selective Free Chlorine
- OMNICON pH ORP FCL: pH + ORP + Amperometric Free Chlorine
- OMNICON pH FCLp TEMP: pH + Potentiostatic Free Chlorine + Temperature
- OMNICON pH CLO2p TEMP: pH + Chlorine Dioxide + Temperature
- OMNICON pH H2O2 Selective: pH + Hydrogen Peroxide

OMNICON WEB INTERFACE AND TECHNICAL SPECIFICATIONS

- A software solution developed for remote monitoring and control.

Web Interface Features: Web-based monitoring, alarm management, graphical trend analysis, data logging system, Ethernet communication, Modbus TCP support, remote parameter setting, historical data reporting, SCADA integration.

Supported Measurement Parameters: pH, ORP (Redox), Conductivity (EC), TDS, Temperature, Free Chlorine (FCL), Total Chlorine (TCL), Combined Chlorine (CCL), Chlorine Dioxide (ClO_2), Ozone (O_3), Hydrogen Peroxide (H_2O_2), Peracetic Acid, Dissolved Oxygen (DO), Turbidity, Humidity, 4–20 mA analogue sensor inputs.

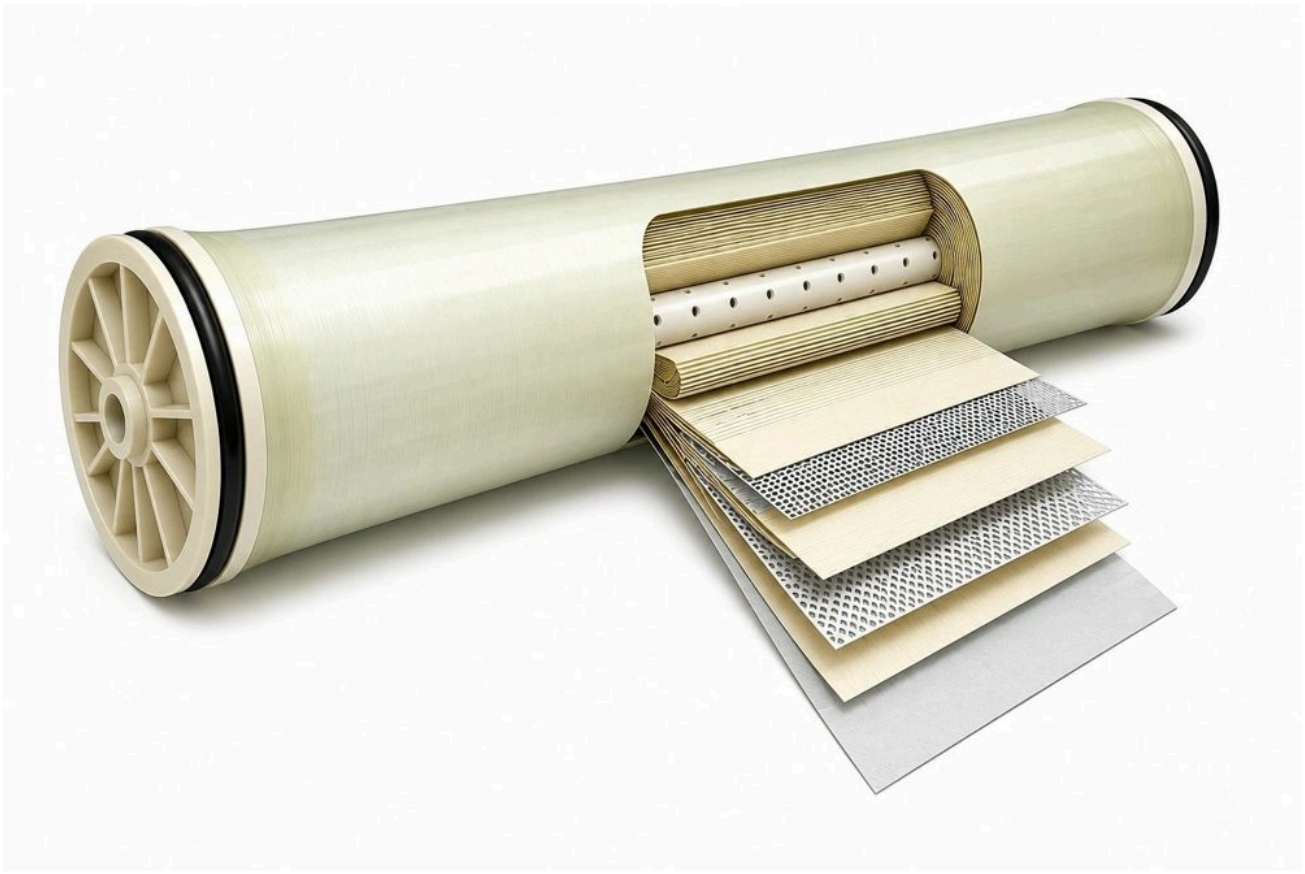
APPLICATION AREAS

Aquatic and OmniCon products are widely used in the following areas:

- Swimming pools and SPA facilities
- Drinking water treatment plants
- Industrial water treatment systems
- Wastewater treatment plants
- Reverse osmosis (RO) systems
- Ultrafiltration (UF) systems
- Cooling towers
- Food and beverage industry
- Chemical facilities
- Power plants
- Hospitals
- Hotels
- Municipalities
- Process water control systems

Industrial Reverse Osmosis Membranes

A reverse osmosis (RO) membrane is a semi-permeable membrane that removes with high efficiency the salts, heavy metals, bacteria, viruses, organic matter and many other contaminants dissolved in water. Today it is the most widely used membrane technology in many fields such as drinking water production, industrial process water preparation, seawater desalination and wastewater reclamation. RO membranes allow only water molecules to pass while retaining most of the dissolved ions and contaminants, thus producing high-quality treated water (permeate).



Series	Model	Application	Sub-series / Feature	Diameter (inch)	Flow rate (m^3/day)	Flow rate (GPD)	Salt Rejection (%)	Thickness (mil)
TM700D	TM710D	Brackish Water	High Rejection	4	9.8	2.600	99.80	34
TM700D	TM720D-400	Brackish Water	High Rejection	8	41.6	11.000	99.80	34
TM700D	TM720D-440	Brackish Water	High Rejection	8	45.7	12.100	99.80	28
TMG(D)	TMG10D	Brackish Water	Low Pressure	4	10.0	2.650	99.70	34
TMG(D)	TMG20D-400	Brackish Water	Low Pressure	8	45.8	12.100	99.70	34

TMG(D)	TMG20D-440	Brackish Water	Low Pressure	8	50.3	13.300	99.70	28
TMHA	TMH10A	Brackish Water	Ultra Low Pressure	4	9.1	2.400	99.30	34
TMHA	TMH20A-400C	Brackish Water	Ultra Low Pressure	8	41.6	11.000	99.30	34
TMHA	TMH20A-440C	Brackish Water	Ultra Low Pressure	8	45.7	12.100	99.30	28
TBW-HR	TBW-4040HR	Brackish Water	Low Pressure / High Neutral Molecule Rejection	4	5.9	1.550	99.80	34
TBW-HR	TBW-400HR	Brackish Water	Low Pressure / High Neutral Molecule Rejection	8	26.0	6.900	99.80	34
TBW-HR	TBW-440HR	Brackish Water	Low Pressure / High Neutral Molecule Rejection	8	30.0	7.900	99.80	28
TBW-XHR	TBW4040XHR	Brackish Water	High Neutral Molecule Rejection	4	7.2	1.900	99.80	34
TBW-XHR	TBW-400XHR	Brackish Water	High Neutral Molecule Rejection	8	32.0	8.500	99.80	34
TBW-XHR	TBW-440XHR	Brackish Water	High Neutral Molecule Rejection	8	36.0	9.500	99.80	28
TSSU-710T	TSSU-710T	Brackish Water	Heat Sanitized	4	6.5	1.700	99.40	37
TSSU-720TS	TSSU-720TS	Brackish Water	Heat Sanitized	8	26.0	6.900	99.40	34
SUL-G	SUL-G10TS	Brackish Water	Heat Sanitized	4	5.0	1.300	99.50	37
SUL-G	SUL-G20TS	Brackish Water	Heat Sanitized	8	30.0	7.900	99.50	34
SUL-G	SUL-G20FTS	Brackish Water	Heat Sanitized	8	36.0	9.500	99.50	28
TSW-M	TSW-400M	Sea Water	Standard	8	26.5	7.000	99.91	34
TSW-M	TSW-440M	Sea Water	Standard	8	29.2	7.700	99.91	30
TSW-V	TSW-400V	Sea Water	Low Energy	8	34.1	9.000	99.90	34
TSW-V	TSW-440V	Sea Water	Low Energy	8	37.5	9.900	99.90	30
TSW-K	TSW-400K	Sea Water	Highest Rejection	8	21.9	5.800	99.92	34
TSW-K	TSW-440K	Sea Water	Highest Rejection	8	24.2	6.400	99.92	30
TSW-LE	TSW-400LE	Sea Water	Super Low Energy	8	23.0	6.100	99.60	34
TSW-LE	TSW-440LE	Sea Water	Super Low Energy	8	25.3	6.700	99.60	28
TM800M	TM820M-400	Sea Water	Standard	8	26.5	7.000	99.80	34
TM800M	TM820M-440	Sea Water	Standard	8	29.2	7.700	99.80	28
TM800V	TM810V	Sea Water	Low Energy	4	7.2	1.900	99.80	34

TM800V	TM820V-400	Sea Water	Low Energy	8	34.1	9.000	99.80	34
TM800V	TM820V-440	Sea Water	Low Energy	8	37.5	9.900	99.80	28
TM800K	TM820K-400	Sea Water	Highest Rejection	8	21.9	5.800	99.86	34
TM800K	TM820K-440	Sea Water	Highest Rejection	8	24.2	6.400	99.86	28
TLF-DG	TLF-400DG	Fouling Water	Ultra Low Pressure / Low Fouling	8	43.5	11.500	99.70	34
TMLD	TMLD10D	Fouling Water	Low Fouling / High Tolerance	4	7.2	1.900	99.80	34
TMLD	TMLD20D-400	Fouling Water	Low Fouling / High Tolerance	8	39.7	10.500	99.80	34
TLF-HD	TLF-400HD	Fouling Water	High Durability	8	39.7	10.500	99.80	34
TLF-ULD	TLF-400ULD	Fouling Water	Ultra Low Differential Pressure	8	43.5	11.500	99.80	38
TZD-HP	TZD-HP	ZLD / MLD	Ultra High Pressure	8	28.0	7.400	99.70	37
TZD-LP	TZD-LP	ZLD / MLD	High Pressure / Low Differential Pressure	8	24.6	6.500	99.70	37
TZD-HR	TZD-HR	ZLD / MLD	High Pressure / High Rejection	8	34.1	9.000	99.80	34
TZD-HF	TZD-HF	ZLD / MLD	High Pressure / High Flow	8	37.5	9.900	99.70	30
TZD-LF	TZD-LF	ZLD / MLD	Low Pressure / Low Fouling	8	39.7	10.500	99.80	34

Product Name	Flow rate (GPD, m^3/day)	NaCl Rejection (%)	Diameter / Length (inch)	Category / Feature
RE8040-BE440	12.000 (45.4)	99.7	8.0 / 40	Brackish Water (Standard)
RE8040-BE HR	11.000 (41.6)	99.8	8.0 / 40	Brackish Water (Standard)
RE8040-BE34	11.000 (41.6)	99.7	8.0 / 40	Brackish Water (Standard)
RE8040-BE	11.000 (41.6)	99.7	8.0 / 40	Brackish Water (Standard)
RE4040-BE	2.400 (9.1)	99.7	4.0 / 40	Brackish Water (Standard)
RE2540-BE	1.000 (3.8)	99.5	2.5 / 40	Brackish Water (Standard)
RE4021-BE	1.200 (4.5)	99.5	4.0 / 21	Brackish Water (Standard)
RE8040-BLF440	12.650 (47.9)	99.5	8.0 / 40	Low Pressure (LP High Flux)
RE8040-BLF	11.500 (43.5)	99.5	8.0 / 40	Low Pressure (LP High Flux)
RE8040-BLR440	12.500 (47.3)	99.6	8.0 / 40	Low Pressure (LP Standard)
RE8040-BLR	11.500 (43.5)	99.6	8.0 / 40	Low Pressure (LP Standard)
RE8040-BLN440	13.000 (49.2)	99.6	8.0 / 40	Low Pressure (LP Standard)

RE8040-BLN	12.000 (45.4)	99.6	8.0 / 40	Low Pressure (LP Standard)
RE4040-BLF	2.500 (9.5)	99.2	4.0 / 40	Low Pressure (LP High Flux)
RE4040-BLN	2.600 (9.8)	99.4	4.0 / 40	Low Pressure (LP Standard)
RE4040-BLR	2.100 (7.9)	99.6	4.0 / 40	Low Pressure (LP Standard)
RE8040-UL440	11.000 (41.6)	99.5	8.0 / 40	Ultra Low Pressure
RE8040-UL	10.000 (37.9)	99.5	8.0 / 40	Ultra Low Pressure
RE8040-HUE440	10.000 (37.9)	99.5	8.0 / 40	Ultra Low Pressure / High Uniformity
RE4040-UL	2.400 (9.1)	99.2	4.0 / 40	Ultra Low Pressure
RE2540-UL	950 (3.6)	99.2	2.5 / 40	Ultra Low Pressure

Our service areas



Drinking water plants

Drinking and utility water treatment plants in compliance with national and international standards, for municipalities, communal living areas, public institutions and private enterprises.



Hospitality facilities

Drinking water, utility water, pool water, boiler feed water and wastewater reclamation applications for hotels, holiday villages, apart hotels and thermal facilities.



Industrial facilities

Reverse osmosis, ultrafiltration, softening, demineralisation and seawater desalination systems tailored to the food, textile, chemical, metal, energy and many other sectors.



Agriculture and greenhouses

Solutions for irrigation water treatment, greenhouse applications and livestock operations that improve product quality and reduce water consumption.



07 · FEATURED PROJECT

Avşa Island Seawater Desalination Plant

At the Avşa Island seawater desalination plant of Balıkesir Metropolitan Municipality, we carried out a capacity increase to meet the water demand that rises in the summer months.

Additional reverse osmosis units, high-pressure pumps, energy recovery systems and automation were added to the plant, raising production capacity; energy efficiency was maintained.

SECTOR	Public / Metropolitan Municipality
LOCATION	Avşa Island, Balıkesir
CAPACITY	4,000 m³/day → 6,000 m³/day
TECHNOLOGY	Seawater reverse osmosis units, filtration systems, high-pressure pumps, energy recovery systems
WORK	Capacity increase of the seawater desalination plant

6,000 m³/day drinking water from seawater

Selected reference projects

PROJECT	SECTOR	LOCATION	CAPACITY	TECHNOLOGY
Manisa Metropolitan Municipality Drinking Water Treatment Plant	Public	Manisa	**9,225 m³/day**	Arsenic, iron and manganese removal
Avşa Island Seawater Desalination Plant	Public	Balıkesir	**6,000 m³/day**	SWRO, energy recovery
Fethiye 5-Star Hotel	Hospitality	Muğla	**5,000 m³/day**	Sand filter, activated carbon, softening
Karachi MBBR Wastewater System	Industry	Pakistan	**5,000 m³/day**	MBBR
Antalya Laundry Facility	Industry	Antalya	**3,000 m³/day**	Water softening
Kemer 5-Star Hotel	Hospitality	Antalya	**2,500 m³/day**	Mechanical filter, UF, RO, dolomite
Belek 5-Star Hotel	Hospitality	Antalya	**2,000 m³/day**	Mechanical filter, UF, RO, dolomite
Alanya 5-Star Hotel	Hospitality	Antalya	**2,000 m³/day**	Sand filter, activated carbon
Kundu 5-Star Hotel	Hospitality	Antalya	**1,500 m³/day**	Water softening
Serik 5-Star Hotel	Hospitality	Antalya	**1,200 m³/day**	UF, SWRO, dolomite, RO
Bodrum 5-Star Hotel	Hospitality	Muğla	**1,000 m³/day**	Mechanical filter, SWRO, dolomite
Side 5-Star Hotel	Hospitality	Antalya	**750 m³/day**	Water softening
Kuşadası 5-Star Hotel	Hospitality	Aydın	**360 m³/day**	Mechanical filter, SWRO, dolomite
Antalya Banana Greenhouse	Agriculture	Antalya	**36 m³/h**	RO, ultrafiltration
Turkmenistan Flower Greenhouse	Agriculture	Turkmenistan	**30 m³/h**	Water treatment system
Azerbaijan Tomato Greenhouse	Agriculture	Azerbaijan	**18 m³/h**	Water treatment system
Antalya Blackberry Greenhouse	Agriculture	Antalya	**18 m³/h**	RO, filtration
Ankara Blackberry Greenhouse	Agriculture	Ankara	**15 m³/h**	Boron removal
Denizli Textile Factory	Industry	Denizli	**6 m³/h**	Sand filter, RO

Our service process

From analysis to service, one team, one point of contact.

STEP 01
Water analysis and requirements definition

STEP 02
Technical consultancy

STEP 03
System design and project engineering

STEP 04
Production and quality control

STEP 05
Installation and commissioning

STEP 06
Operator training

STEP 07
Periodic maintenance

STEP 08
Technical service and spare parts support



Our Technologies

- Reverse Osmosis (RO)
- Seawater Reverse Osmosis (SWRO)
- Ultrafiltration (UF)
- Nanofiltration (NF)
- Water Softening
- Sand and Multimedia Filters
- Activated Carbon Filters
- Demineralisation
- Chemical Dosing
- Ultraviolet (UV) Disinfection
- Ozone Systems
- PLC and SCADA Automation

Those who trust us

OUR QUALITY CERTIFICATES

ISO 9001

Quality Management System

ISO 14001

Environmental Management System

ISO 45001

Occupational Health and Safety

TSE-HYB

Certificate of Service Competence

Share your water analysis, we design the system.

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Send us your water analysis and capacity requirement; we will reply with a system proposal and a quotation.