



 **ESLI**
POLLET WATER GROUP

ESLI IS A POLLET
WATER GROUP
COMPANY

AQUA^{LINE}
Water and Waste Water Treatment Systems

www.esli.com.tr

FILTRATION SYSTEMS

SYSTÈMES DE FILTRATION

أنظمة الفلترة

SEPERATOR FILTERS

FILTRES SÉPARATEURS

فلتر الفصل

Separator Filter Systems works according to principle of sending solid particles which have higher specific gravity than water away from water by centrifuge power.

- 1- Holds all particles between 70-110 micron.
- 2- Works in high capacity range.
- 3- Do not need of cutting of water during cleaning.
- 4- Do not need spare part, does not have moving part inside.
- 5- Filter material is SS304 stainless steel and St-37 carbon steel.
- 6- Its care is just cleaning reservoir where stiff items are collected.
- 7- Pressure loss is fixed; there is no change at flow even at high capacity.
- 8- Maximum pressure that separator filters can be work is 6-8 bar.
- 9- There is no risk of plugging as there is no filter element.



Separator Filters has 24 hour non-stop working feature.

CARTRIDGE AND BAG FILTERS

FILTRES À CARTOUCHE ET FILTRES À SAC فلاتر خرطوشية وفلاتر أكياس

AQUALINE Cartridge Filter Systems consist of filter body and cartridges. Filter body is house for main element-cartridge that will purify water. Cartridges that are used at cartridge filter systems have different micron sensitivity. For this reason, for different capacities, it is possible to do sensitive filtration based on micron with suitable number and specification of cartridges.



Raw water parameters affect service life and fouling period of cartridges. Contaminated cartridges should be changed since they cause both increasing amount of pressure loss and decreasing in filtration sensibility.

Bag Filter Systems consist of filter body and bag filters. Filter body is house for main element- bag filter that purify water. Liquid flow from inside to outside and all particles and dirt remain inside bag filter. Bag filter can be washed when it is fouled.



MULTIMEDIA FILTERS

FILTRES À MULTIMÉDIAS

فلتر متعدد الطبقات

Multi Media Filters are used for purpose of removing suspended solid, cloudiness and other particles. System is consisting of settling different degree of gravel sizes with more than one layer inside the body. Second duty of Multi Media Filters besides removing solid items from water is to protect the equipment that will be located from it. Multi Media Filters are used as pre-treatment at purification of process water and drinking water or getting rid of cloudiness of purified water that has drained from waste water purification system. Multi Media Filters present the most suitable solution that will meet your filtration need for various capacity and speed. They work at optimum time with administration comfort and service support.



IRON AND MANGANASE FILTERS

FILTRES DE FER ET MANGANÈSE فلاتر إزالة الحديد والمنغنيز

Aqualine Iron and Mangan Filters can decrease iron and mangan amount that is up to 5ppm in water into drinking and usage water standards (Fe=0,2ppm-Mn=0,05 ppm) by means of special minerals. For these special minerals, there is no need for extra reagent equipment.

Beside this, these filters move hydrogen sulphite, metan, free carbon dioxide available at water and organic wastes at high concentration.

Since human health is priority in aqualine filtration systems, minerals which are used in our systems are suitable for world standards.



ACTIVATED CARBON FILTERS

FILTRES À CHARBON ACTIF

فلتر فحمية

Active carbon filters are used for purification of dissolved gas, wastes and organic materials that give undesirable chlorine, colour, taste and smell to water. Active carbon is like coal but a material with very wide surface area (1000-1500 cubic meter / gr). Productivity of active carbon filter are determined by features of active carbon used at filter media and correct choose of filtration speed of water. Active Carbon Filters renew itself by doing daily 15-20 minutes of automatic back-wash.



Another important subject that must be paid attention about active carbon is, mineral media can form suitable environment for bacteria production because active carbon collects organic material inside its structure and if there is bacteria at water, and bacteria can use this organic material as food and reproduce. At such situations, bacteria leakage is possible. For this reason, disinfection of water is important before and after of active carbon.

SURFACE PIPING MULTIMEDIA AND ACTIVATED CARBON FILTER SYSTEMS

فلتر متعددة الطبقات وفلاتر فحمية

SYSTÈMES À TUYAUX EXTÉRIEURS FILTRES À MULTIMÉDIAS ET À CHARBON ACTIF

بأنابيب سطحية

Multi Media Filters are used for purpose of removing suspended solid, cloudiness and other particles. For high capacity, we prefer to use surface piping multimedia filter systems.



For high capacity, surface piping multimedia filter systems are used.

SOFTENING FILTERS

FILTRES D'ADOUCCISSEMENT

أنظمة التليئة

Water softening process is ion changing method. Ion change is materialized by passing water with Ca and Mg that causes hardening through Na form cationic resin. While hard water pass through sodium based cationic resin, hardening ions (Ca+2 and Mg+2) change place with Na tied to resin. After certain amount of firm water pass through resin media, resin particles are completely covered with hardening minerals. At this case, joining of hardness minerals end.

To be able to remain at water hardness ions, resin particles must be rid of from hardness minerals, again sodium particles must be tied. This process is called Regeneration. As a result of this proces, while resin, calcium (Ca2+) and Magnesium (Mg2+) leave their ions, sodium (Na+) again combines ions to itself and be ready to service position.

When design of AQUALINE Water Softening Units is made, resin quantity is calculated according to raw water characteristic, average daily flow and peak flow consumption. Beside this, regeneration process can be made time control, flow control or with hardness analyzer and in connection with measuring of hardness degree of pure water, regeneration process can be made with automation.

SINGLE SOFTENING FILTERS

FILTRES D'ADOUCCISSEMENT SIMPLEX أنظمة التليئة المفردة

The system carries out regeneration according to the set time (timer) or flowrate (volumetric) on value, without requiring human intervention.



DUPLEX SOFTENING FILTERS

FILTRES D'ADOUCCISSEMENT DUPLEX أنظمة التليئة المتكررة

Tandem Softening Systems consist of two softening unit. System can be controlled as volume metric as per the volume of water that passes.

At TANDEM system, each softening device do regeneration period in turn order and when it becomes ready, wait for saturation of process unit and wait for handover of process. By this way, soft water is produced constantly 24 hours a day without need of human interference and without stopping of process for regeneration operation.

TANDEM systems produce soft water completely automatic without interference of human



SURFACE PIPING
SINGLE AND DUPLEX
SOFTENING SYSTEMS

أنظمة تليئة مفردة

ومتكررة بأنابيب سطحية

SYSTÈMES À TUYAUX EXTÉRIEURS SIMPLEX ET DUPLEX
D'ADOUCCISSEMENT

For high capacity, tandem or single surface piping softening systems are used.



REVERSE OSMOSIS SYSTEMS

SYSTÈMES D'OSMOSE INVERSE

أنظمة التناضح العكسي

Membran filtration transaction devoted to pure water provision is called REVERSE OSMOS which is applied for water where classical purification systems become insufficient (seawater, well water with high conductivity etc.), separating all undesirable minerals from water.

Working principle of Reverse Osmosis is by means of membranes over the equipment. Water has difficulty passing along the pores over the membran at high pressure. By the time of this process, while water molecules and some inorganic molecules can pass from these pores, most of the elements in water cannot pass from these pores and dispose out as concentrated water.

Together with advanced technology, it has been possible to manufacture completely automatic Reverse Osmosis equipments and with supply of high quality water at requested flow, Reverse Osmosis Equipments have rise upside at Professional purification.

AQUALINE Reverse Osmosis Systems have variations of home based and industrial use. Dosage pumps, analyzer groups and similar equipments are designed over complete chasis based on capacity of purified water and it's characteristic.

BUDGET SERIES

SÉRIE BUDGET سلسلة بادجيت

Budget series can be thought as an economic alternative of Alfa Series although they are used for same capacities.



ALFA SERIES

SÉRIE ALFA سلسلة ألفا

For the obtaining of 1m3/d to 75 m3/d fresh water from well or tap water



GAMA SERIES

SÉRIE GAMA سلسلة غاما

For the obtaining of 100m3/d to 2500 m3/d fresh water from well or tap water



TETRA SERIES

SÉRIE TETRA سلسلة تيترا

For obtaining fresh water from sea water



ULTRAFILTRATION SYSTEMS

SYSTÈMES D'ULTRAFILTRATION

أنظمة الألترا فلتتر

UF modules, together with perfect filtration of surface water are used very commonly for pre-treatment of sea water osmosis systems, waste water recycling projects and enable conventional biologically and chemically treated water for reverse osmosis systems.

Moreover, UF systems are used successfully for sea water treatment, food sector, beverage process, natural drinking water factories, disinfection of water indirectly and lots of special projects. It constitutes pivots for systems of special designs of waste water recycling and processing of recycling of water origin MBR.



Membranes pore diameters which are using in Ultrafiltration systems are smaller than microorganisms diameters so they can be safely provided as %100 effective for water treatment. In addition, Organic substances chlorine compounds in water creates, THM (trihalometans) affect negatively on human structure and they can cause disease. Ultrafiltration doesn't cause any additives in water, doesn't produce waste, any unwanted oxidative substances and that is the most important advantage of it.



ULTRAVIOLET SYSTEMS

SYSTÈMES À RAYONS ULTRAVIOLETS

أنظمة التعقيم بالأشعة

Disinfection with Ultraviolet Systems is the process for making microorganisms inactive without adding any chemical or oxidant to water.

This ultraviolet lights breaks DNA structure of microorganisms and makes them inactive unaffected. By this way, %99,9 average ratio of disinfection productivity is supplied. To be able to kill microorganisms with this system, Ultraviolet light must directly hit over them. For this reason, before water enters in ultraviolet system, parameters such as sediment, cloudiness must be removed from water. Sand filter or cartridge filters are recommended to be used before ultraviolet.



PLUS Model



ES Model



PRO Model

To obtain good productivity from ultraviolet units, periodical maintenance is important. UV lamp change once a year and periodical Quartz glass cleaning depending on raw water quality must be made. In case, if this cleaning is not done, UV light affect and output of equipment will decrease.



WASTE WATER FILTRATION SYSTEMS

SYSTÈMES DE FILTRATION DES EAUX USÉES

أنظمة معالجة الصرف

PACKAGE

COMPACT

أنظمة المجموعات

The operation principle (working-principle) of this biological treatment unit is "sequencing batch reactor" system which is the advanced technology for treatment of domestic waste water.

The waste water collected within the waste water equalization tank is separated from the solid contaminants by means of a basket type fine-meshed grating located at the inlet section of the system. Within the sequencing batch reactor, the organic contaminants in the waste water are converted to CO₂ and water by the help of aerobic bacteria. In order to achieve this reaction, the necessary oxygen and mixture-air are provided by the blower included within the unit.



CONCRETE

STRUCTURE EN BÉTON

أنظمة الخرسانة المسلحة

The air produced by the blower is distributed into the tank equally through the use of rubber membrane diffusers providing the fine-meshed air bubbles. The organic contamination within the waste water is removed in the sequencing batch reactor and then the waste water is left to sedimentation process with the bacteria flocks.

The treated water separated from the bacteria flocks by means of sedimentation process is discharged through the use of submersible type discharge pump, during the discharge operation the treated water is disinfected by dosing hypochlorite with the help of dosage pump.

