



# Abram Company

Water and wastewater  
treatment packaget

## CONTACT US

The Abram Engineering Company (Water Management Company), with the support of the rich and elite manpower and the elite equipment of the world and the use of innovation capacities at Shahid Beheshti University.



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# Resin hardeness reducer:

Resin hardeness reducer are one of the methods for reduce water harding, which are made in different capacities as needed. The overall structure of the disintegrators is similar and the difference is only in the type of controls. A cylindrical reservoir made of steel plate welded from inside and out and equipped with at least two openings for access. Inside the tank, a bed of silica has been exist on the resin floor. Both machines have a tube to enter the hard water and a pipe for the soft water outlet with connections and valves, or a multi-way cable. In order to uniformly distribute the inlet water in the upper part, a diffuser is fitted in the device. For the purpose of collecting soft water and uniform distribution of outlet water, a reversible water wash is provided with a steel plate for insertion of Faucet.

The plastic Faucet are mounted on a plate of steel in a hardened cabinet to an appropriate number of at least 3 per square inch of hardening surface. When the water contains calcium and magnesium sulfate compounds, they pass through the resin. Calcium and magnesium replace their sodium content with this resin material, thereby reducing the water hardness. When all sodium ion resin was consumed, the resin was saturated. It can be restored by passing salt solution (sodium chloride). In this way, the action taken takes the calcium and magnesium of the separated resin and sodium ion.

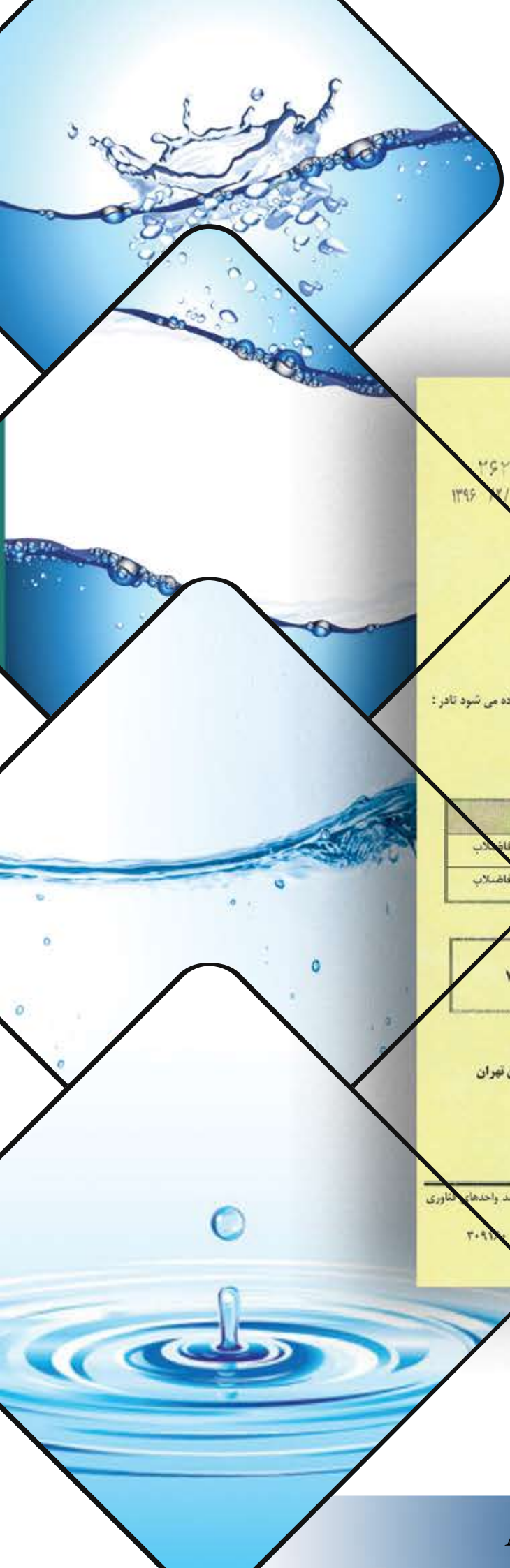
The size of the hardeners depends on the amount of water passing through the unit of time (discharge) from the hardening agent and the amount of solute in the water. The power of both machines depends on the flow of water



# ABRAM

The Abram Engineering Company designer and manufacturer of wastewater treatment packages, located at Shahid Beheshti University Development Center, is licensed by the environmental

Abram Company in Water and Sewage Treatment Industry Certified by Ministry of Industry, Mining and Commerce. We have Succeed to designing and manufacturing a sewage treatment system for massive aeration and activated sludge (EAAS), mobile bedding growth (MBBR), fixed bedding growth (IFAS), biomagnetic biologic reagent (MBBR), bioluminal rotary contactor (RBC), septic tanks, stabilization ponds and for the treatment of hospital waste, paper and carton industries slaughterhouses, dairy industries, paints And Dyeing, glass, cement, wood industry, electrical industry, food, rug cleaning, steel, electrolating indutries, cosmetic, petrochemical, refinery and oil industry, animal husbandry, pharmaceutical provide valuable services.



جمهوری اسلامی ایران  
وزارت صنعت، معدن و تجارت

**جواز تاسیس  
واحد فنی و مهندسی**

به موجب این جواز به **شرکت آب راهبر مناسب** اجازه داده می شود تا در:

استان: **تهران**      شهرستان: **تهران**  
نسبت به تاسیس واحد فنی مهندسی با مشخصات ذیل اقدام نماید.  
- مشخصات نیروی انسانی:

ردیف	نام و نام خانوادگی	رشته و درجه تحصیلی
۱	محمد محمودزاده	کارشناسی مهندسی عمران- آب و فاضلاب
۲	اشکان قلاسی مود	کارشناسی مهندسی عمران- آب و فاضلاب

- زمینه تخصصی:

صنایع زیست محیطی، آب و فاضلاب و فیلتراسیون      کد: ۷۴۲۱۲۹۰۱

محمد رضا حسن فروش  
رئیس سازمان صنعت، معدن و تجارت استان تهران

نشانی دارنده جواز تاسیس: تهران، بولنجک بلوار دانشجو دانشگاه شهید بهشتی مرکز رشد واحدهای فناوری  
و کارافزینی طبقه همکف شرکت دانش فناوری ابرام  
تلفن: ۲۲۴۱۹۴۰۹      فاکس: ۴۳۸۵۵۶۸-۰۲۱      کد پستی: ۱۹۸۳۹۶۳۱۱۳      ش.ب: ۳۰۹۱۳۰۰  
(به مندرجات پشت این برگ توجه فرمایید))



# Sand Filter

# Sand Filter

A sand filter is used for medium sized granular layers of a specific size and depth that drains pre-purified water or refined effluent from the filtrate through the filter, and a large proportion of the particles in the entire bed are removed uniformly. The first thing to look at when designing a sandblast is to provide optimal quality water with minimal investment and guidance.

There are many factors in the design of the filtration process for medium sand filters:

Topography of the place

Workshop size

Raw water quality

Types of pre-treatment processes

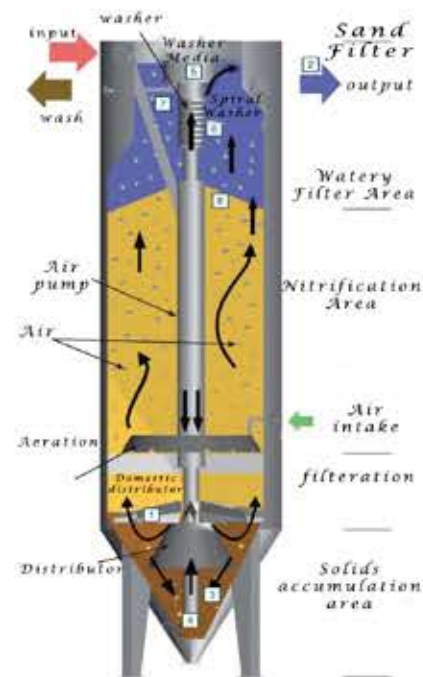
New and advanced filter types

Types of filtering and cleaning systems

Control the filtration rate

Types of filter packages

Chemical supply points



the topography of the refinery site should be carefully evaluated before design. Because the type and arrangement of each of the filtration processes is determined based on it.

Available new filter sand filters, filter media and filter control systems are available at any moment in the market. Although there are a variety of sandblasting products on the market, there may be a problem one or two years after shelling. For example, small companies can be named as small aluminum chips like filter media. The finished parts dissolve aluminum chloride slowly and cause the coagulation and flocculation to occur in the filter bed and eliminate the need for a coagulant. the phenomenon is very interesting and makes the filters work well during the first three to six months. But after 9 to 12 months of navigation, the filter bed turns into large pieces with molten aluminum chips.

# About Us

Abram Company (Water Management Company) has set its goal of water health because water has become a problem that has been more than ever before considered. Because the occurrence of environmental disasters not only threatens the livelihood of the surrounding living organisms, but also overlooks the lives of future generations.

Because human survival depends on peaceful coexistence with water resources and nature, and untapped exploitation of water resources has led to the use of this divine blessing to face the crisis. We, a group of graduates of civil engineering, water and wastewater of Shahid Beheshti University, have done their mission in protecting this Divine Blessing, so we have been setting up the Abram International Technology Unit. The ABRAM Technology Unit consists of a group of graduates of civil engineering, water and wastewater located at Shahid Beheshti University Development Center, whose activities are based on the use of water and sanitation projects, Monitoring of environmental pollutants in the country has been monitored by domestic experts and has been a valuable activity since its inception. At present, with the help of experienced experts and utilizing scientific resources, technical knowledge and experienced experts' experiences, they have been able to complete various projects. The prospect of this company, using the valuable elites of the country, is moving towards improvement, efficiency and effectiveness of the country's water and sewage system, which today is very important and sensitive in various fields such as water management and water distribution management in the world...



### Save Money

Have you ever wondered how much money is being paid to pay a water bill in a washing



### Save water

when you use from gray treatment package in fact you save more than 70% water from all of wastewater



### Save time

we are soo fast ..thats meaning when you buy a package ..we can counstract your package at a week

## Applications

- Carwash sewage
- Domestic gray wastewater from dishwasher sinks, washbasins and ... (sewage of residential areas other than human waste)
- Grain wastewater from organizations and departments (sewage from residential units other than human sewage)
- Dyeing sewage, paint factory and factories with high organic matter

## Advantages

- Provide treated sewage output in accordance with EPA standards
- Small and fast dimensions
- Possibility to transfer the package after installation
- The least amount of bad breath is when you have the right path
- Simple navigation and maintenance
- The concentration of sludge was low



### RO Water purification

Abram Company sell Ro water Purification. in fact Ro package is well for all type of water and you can use this water for drink



### Diffuser & Blower

Abram's company uses the best tools to provide the necessary components in sewage treatment packages, for example, it can be noted for the company's diffusers and blowers.



wastewater treatment by electrical coagulation is a specific method of chemical coagulation.that coagulation parameters are formed by dissolving the anode with the flow between the anode & cathode electrodes. Electrocoagulation causes less coagulation ions to be used, but more pollutant removal and the need to add conventional chemicals such as coagulation and flocculation are not common.As a result, it reduces pollutants and reduces the amount of sludge. The reaction time is low in the EC coagulation process, therefore the size of the reactor is small and its operation and maintenance is simple and environmentally friendly.

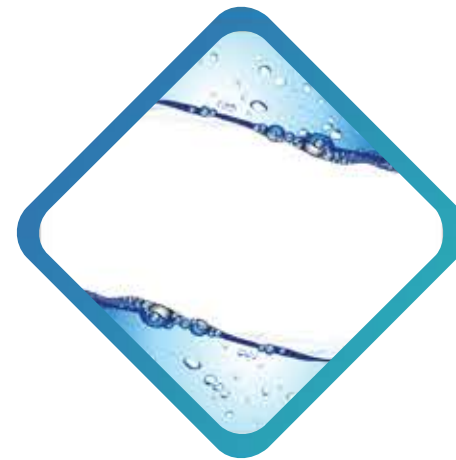
# EC



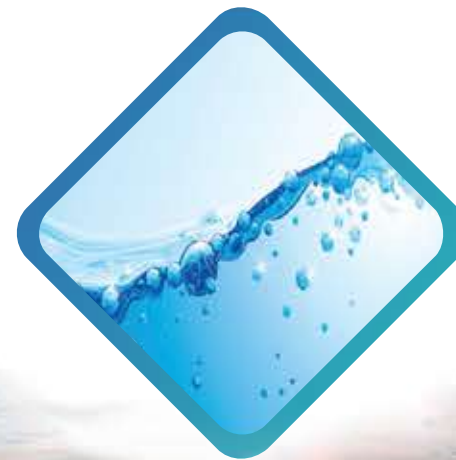
## ABRAM COMPANY GRAY SEWAGE TREATMENT PACKAGE



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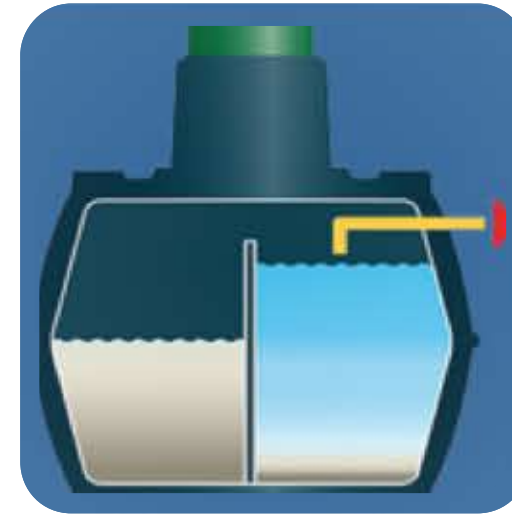
Wastewater treatment by electrical coagulation for industrial waste water that is not biologically treated and conventional methods are not treated, such as



# Waste water Treatment By EAAS

Wastewater Active Treatment (EAAS) is one of the methods of sanitary sewage treatment. This method is based on low waste water loading in the sewage aeration basin. In this method, active sludge treatment is treated, the wastewater is first depleted, then enters the aeration basin. Subsequently, the sedimentation process begins, when part of the sludge is returned to the aeration pond, and the cleared effluent from the bottom of the settling pond The side of the chlorine tank is directed. This level of loading causes bacteria to be abundant in oxygen and in relatively less nutritious foods, and thus more fully utilize organic matter in the sewage. In this type of filtration system, the concentration of MLSS in the aeration pond is higher than that of conventional activated sludge.

## Process of a SBR system



### Charging

The wastewater goes first into primary treatment (1st chamber), where the solid substances are retained. From there the wastewater is fed into the SBR tank (2nd chamber).

### Aeration

The actual biological cleaning by microorganisms now takes place in the SBR tank. Short aeration and rest phase alternate in a controlled cleaning process. The so-called activated sludge can now develop with millions of microorganisms and clean the water thoroughly



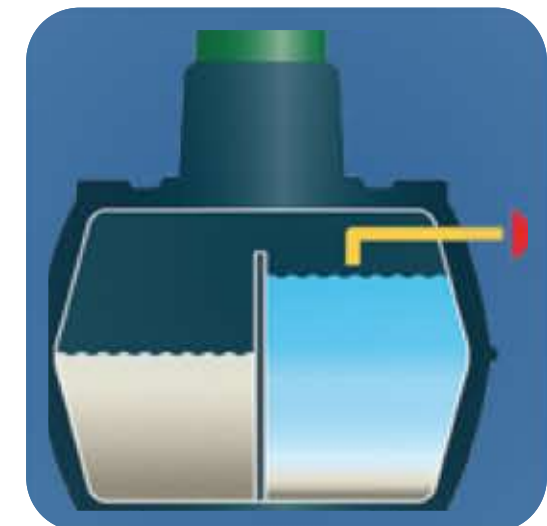
### Rest phase

A rest phase now follows, during which the live sludge sinks to the bottom of the system. This allows a clarified water zone to form at the top of the SBR tank.



### Clear water extraction

The purified wastewater is now fed into a discharge system (stream, river, sea) or into an infiltration system. Afterwards, the sludge is fed back from the SBR tank into the first.





# SBR

The Abram company's sbr treatment system is a filling and emptying reactor. Sbr treatment is one of the active sludge treatment methods. In this method, with complete mixing, the sewage first enters the aeration pond, enough time is given to the oxidized sewage to be deposited

Sbr systems consist of the following sections:

1. garbage collactore
2. Arration part
3. Choloration
4. Electrical Switchgear



Aeration by EAAS methode

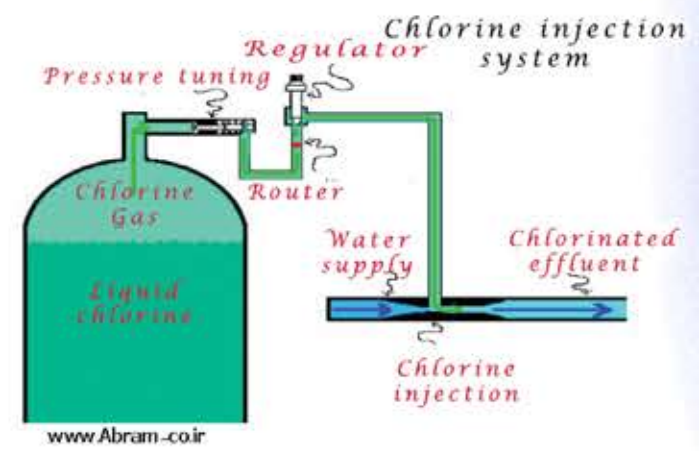
## Application:

1. Sewage treatment of residential and office
2. complexes Sewage treatment of hospitals & clinics  
Wastewater treatment of factories & industries
3. Sewage treatment of military centers and terminals & airports
4. Wastewater treatment of travelers and hotels and resettlement centers
4. Refining of food and dairy factories (considering the quality of sewage)



# Chlorine injection package

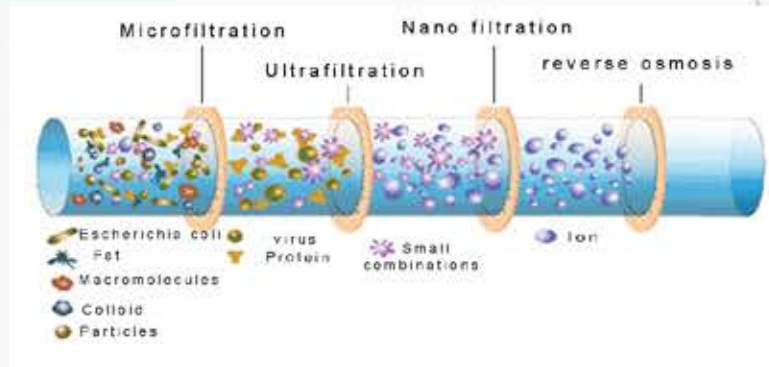
Sewage chlorination is used at the outlet of sewage treatment plants to standardize pathogenic coliforms. One of the methods for disinfection of sewage is chlorine that is suspected of producing trihalomethanes. But considering that the chlorination properties are still most used in disinfection. Drainage Chlorine Drainage Chlorine Design includes three parts of chlorination equipment, chlorine building and chlorine contact tank. The chlorine used in the treatment plant is usually chlorine gas  $Cl_2$  or in the form of sodium hypochlorite or calcium hypochlorite. Hypochlorites can be solid or liquid solids in the form of powder or granules.



## Advantage:

1. Provide treated sewage output in accordance with EPA standards
2. Small and fast dimensions
3. Possibility to transfer Package after installation
4. The least amount of bad smell is produced in the correct direction
5. Simple navigation and maintenance
6. The concentration of sludge was low

# WATER PURIFIER RO



The ro water purifier is suitable for treating all types of well water, seawater and river water. The ro-water treatment plant is used to reduce the mineral water solubility (total solvent solids TDS). The water purification package developed by Abram Company consists of several sections including pre-treatment, main purification and water disinfection systems. This device is used in areas where the quality of drinking water is different from that of the National Standard Organization. It is also used at the outlet of wastewater treatment plants to recycle the final waste water.

The minimum requirements for reverse osmosis water purification (RO) are high pressure pump, modulus, pressure valve valve, safety valve, measurement and control systems (pressure gauge and flow meter). The simplest diagram of a water treatment plant is reverse osmosis. This system includes a high pressure pump, a reverse osmosis module and two pressure gauges on the input and output of modulus installations that show the modulus pressure. Two measuring devices, each of which shows the amount of water purified and the effluent. The ratio between the refined water and the effluent is determined from these two flowmeters.

## Wastewater treatment by EAAS



air transfer valve for aeration



a mbbbr package under construction



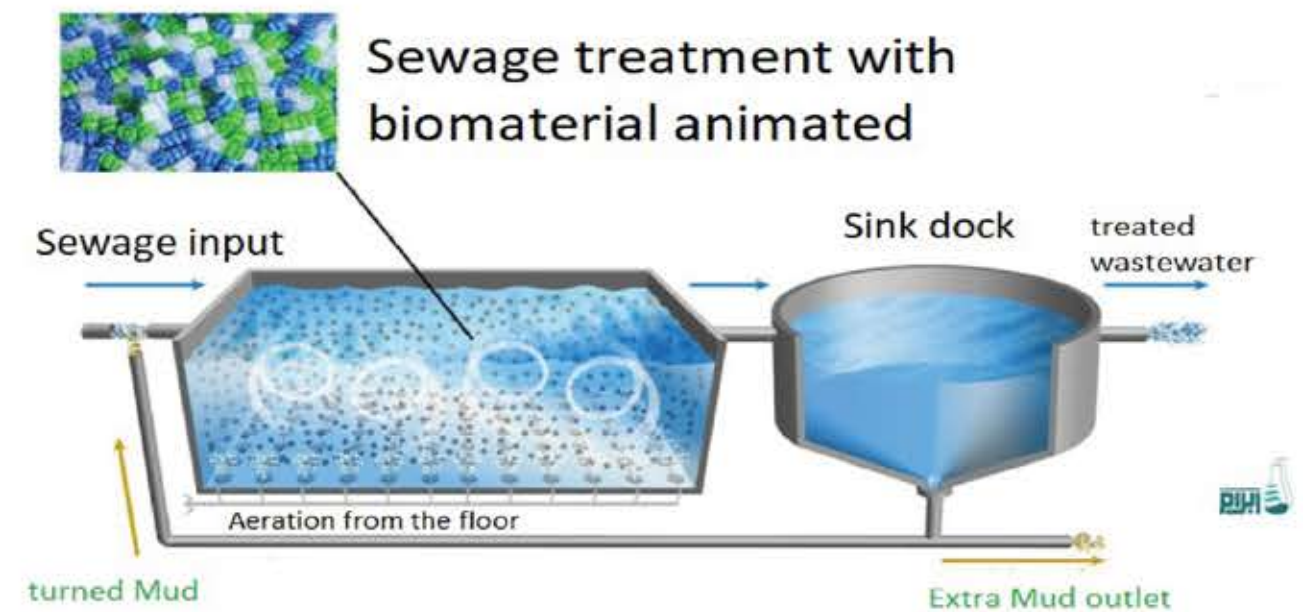
step to build a MBBR package



sewage outlet valve and sludge disposal

# Advantages

- Provide treated sewage output in accordance with EPA standards
- Small and fast dimensions
- Possibility to transfer the package after installation
- The least amount of bad breath is when you have the right path
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- The concentration of sludge was low



# Applications

- Sewage treatment of residential and office complexes
- Sewage treatment of hospitals and clinics
- Wastewater treatment of factories and industries
- Sewage treatment of military centers and terminals and airports
- Sewage treatment for hotels and hotels and resettlement centers
- Refining of food and dairy factories (considering the quality of sewage)