



**ATAL Containerized
Biological Aeration Filter
一体化曝气生物滤池
(ABAFII)**

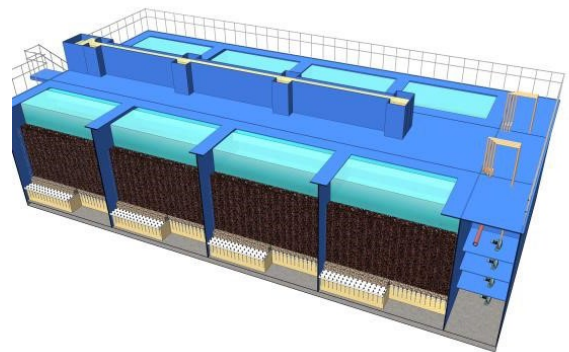
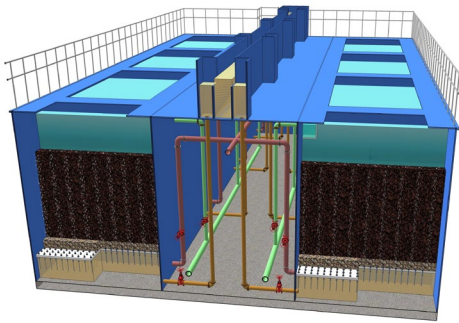
Engineering with passion
用心創造

Introduction 简介

ATAL Containerized Biological Aeration Filter (ABAF II) 一体化曝气生物滤池

ATAL Containerized Biological Aeration Filter (ABAFII) is a patented technology (patent number: ZL2004 1 0033940.7) developed by ATAL Engineering Limited. Our Group has accumulated rich experience and good performance in the process design, equipment integration and "turnkey" project. We have a team of engineers with strong technical capabilities and rich experience in project management. In the process design, equipment supply, installation, commissioning and operation of the process package, it is practical to achieve safety, reliability, economical application, advanced technology, and ensure that the effluent meets the standards.

一体化曝气生物滤池 (ABAF II) 是安乐工程有限公司研发的专利技术 (专利号: ZL2004 1 0033940.7)。我司在此工艺的设计、成套设备集成和“交钥匙”工程上积累了丰富的经验和良好的业绩，并拥有一支专业技术能力强、工程管理经验丰富的工程师队伍。在工艺包的工艺设计、设备选购、施工、安装、调试和运营中，切实做到安全可靠、经济适用、技术先进、确保出水达标。



3D model of ABAFII
一体化曝气生物滤池3D效果图

Major Features 主要特点

Combination of Physical Filtration and Biological Treatment 物理截留与生物处理的结合

Highly compacted downstream ABAFII system have biological treatment and physical filtration function together. It reduces site space and saves investment cost.

高度紧凑的顺流式曝气生物滤池将生化处理和物理截留功能集于一体，不仅减少占地面积，还可以节省投资。



Filter media made of clay
黏土制成的滤料

Backwash 反冲洗

The filter usually runs for 18-72 hours, with the increase of retained suspended solids and thickening of biofilm on the surface of the filter material, it is necessary to backwash the filter to ensure the treatment performance of filter. The wastewater after backwashing can be directly discharged to the primary sedimentation tank of the sewage treatment plant or the intake well of the intake pump station.

滤池通常在运行18-72小时后，随着截留的悬浮物增多和滤料表面生物膜的增厚，需要对滤池进行反冲洗，以保证滤池良好的处理效果。反冲洗后的废水可以直接排到污水厂的初沉池或进水泵房进水井内。

Major Features 主要特点

Decarbonisation 除碳

The process is used to degrade chemical oxygen demand (COD) and biochemical oxygen demand (BOD) in wastewater treatment. Air blower piping is installed in water and air distribution system. The filter area is filled with oxygen and biochemical reaction will remove carbon pollutants. SS is simultaneously removed by filtration.

对于通常仅要求降低化学需氧量 (COD) 和生化需氧量 (BOD) 的污水处理可以采用此工艺。一般在滤池的配水配气区设置工艺空气管。滤池过滤区充满氧气，生化反应会去除碳污染物。悬浮物也同时被过滤去除。

Nitrification 硝化

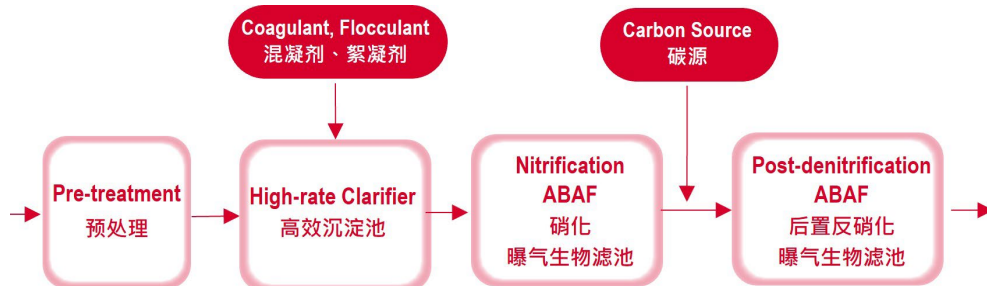
The nitrification filter design is similar to decarbonisation filter. The aerobic zone is to remove ammonia nitrogen along with biodegradable carbon-containing pollutants. SS is simultaneously removed by filtration.

硝化滤池在设计上类似于除碳型滤池。滤池用于去除氨氮，并一同去除可生物降解含碳污染物。悬浮物也同时被过滤去除。

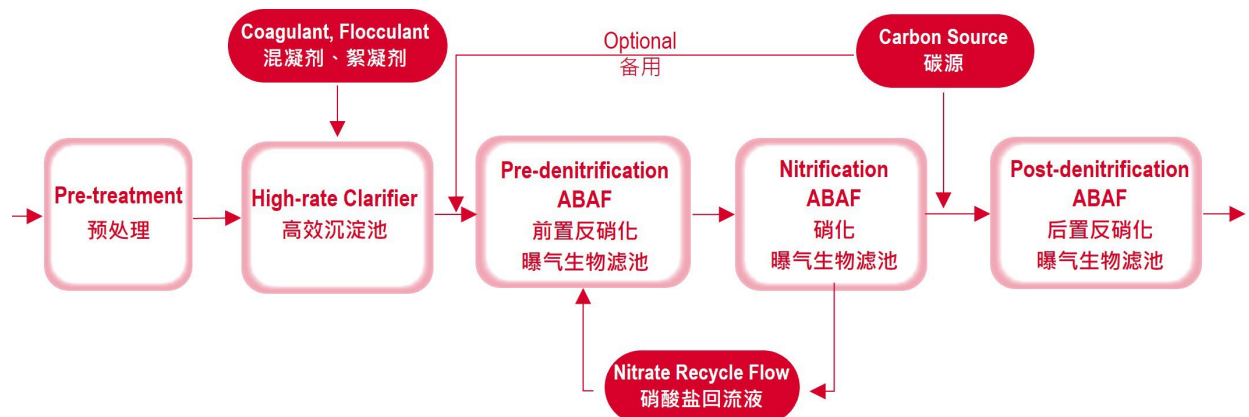
Pre-denitrification and Post-denitrification 前置反硝化和后置反硝化

The denitrification filter can be set at the front or the back of the nitrification filter to remove total nitrogen. When it is set in the front of nitrification filters as a pre-denitrification filter, it uses the organic pollutants as a carbon source to reduce the recirculated nitrate into gaseous nitrogen. When it is set in the back of nitrification filters as a post-denitrification filter, it relies on external carbon sources to remove total nitrogen.

反硝化曝气生物滤池可以设置在硝化滤池前端或后端用于去除总氮。当设置在前端时，作为前置反硝化滤池，可以利用原水中的有机物作为碳源，将回流的硝态氮还原成气态氮去除。当设置于硝化滤池的后端时，作为后置反硝化滤池时，依靠外加碳源去除总氮。



Process flow diagram of two-stage ABAF
二级曝气生物滤池工艺流程图



Process flow diagram of three-stage ABAF
三级曝气生物滤池工艺流程图

Job Reference 案例

Mature and Leading Technology 成熟领先的生物处理技术

- Combined removal of carbon and nitrogen pollutants
- Upflow velocity: 4-30 m/h
- High loading of carbon and nitrogen
- High effluent quality
- Less impact from hydraulic loading variation
- Overall automatic control
- Modular manufacturing, a variety of specifications can be applied to different processing sizes and sites
- 同一滤池内可去除含碳和氮污染物
- 4-30 m/h的上升流速
- 较高的碳和氮去除负荷
- 出水水质高
- 水力负荷变化影响小
- 处理过程全自动控制
- 工厂模块化制造·各种规格的组合·可适用不同的处理规模和场所

High Quality Filter Media 高质量的滤料

- Manufactured by pure natural materials
- Robust mechanical structure with long service life
- Low loss rate of filter media
- Different specification to match various treatment purposes
- Honeycomb surface with large surface area
- High biological organic removal rate
- 采用纯天然材料加工而成
- 机械结构强度高·使用寿命长
- 滤料损耗率低
- 各种规格形状·满足各种处理目的
- 表面蜂窝状·比表面积大
- 生物处理有机物去除率高

Excellent Filtration Performance 卓越的过滤效率

- Precipitation is not needed for effluent, which goes directly to the next process
- Double layer-effect between filter media and biofilm, which makes the capture of SS more prominent
- Patented distribution of water and air by distribution system
- Integrated design, suitable for initial rainwater, polluted river water treatment
- 出水无需沉淀·直接进入下一工序
- 滤料和生物膜的双层作用·使悬浮固体的捕获性能更加突出
- 专利的配水配气系统使布水、布气更均匀
- 一体化设计·适用初期雨水、受污染的河道水处理

Less Pollutant Discharged 污染物排放少

- Surrounding air only contact with treated effluent to avoid second pollution
- Backwash wastewater is discharged to confined space rather than exposed to air
- Less odor and volatile
- Use treated effluent as backwash source
- 滤池周围的空气仅和处理后的水接触·避免二次污染
- 反冲洗污水排放到密闭的空间内·而不是暴露在空气中
- 臭味和挥发物更少
- 反冲洗水源为处理后的出水

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