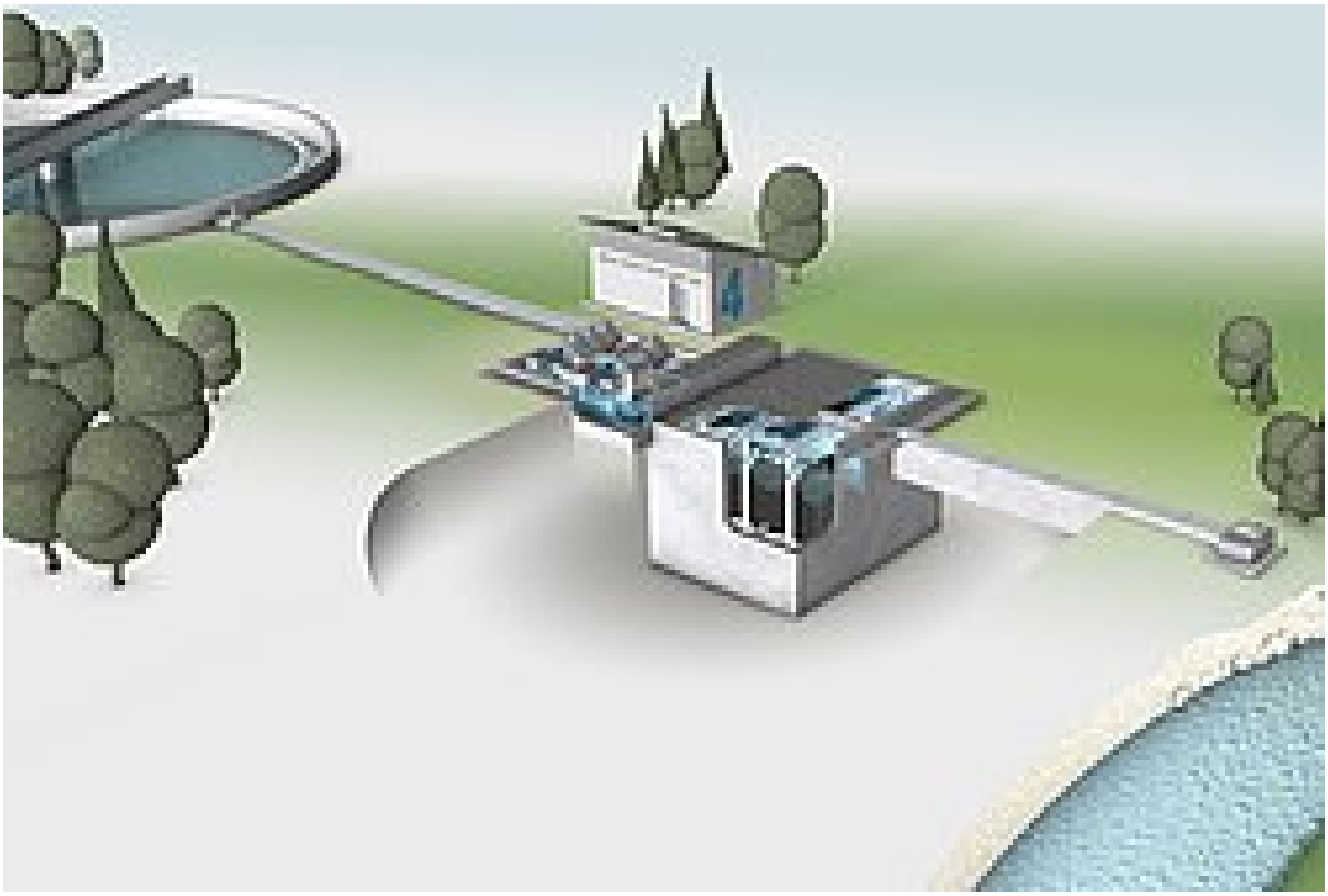
HUBER Technology Hungary
Silex Water Technologies Kft.

Quaternary Treatment: HUBER Solutions for the Removal of Micropollutants



- **Reliable machine technology for preliminary treatment**
- **Reliable separation of powdered activated carbon (polishing filter)**
- **Simple elimination of trace substances with granulated activated carbon**

TThe demands on the effluent quality of municipal and industrial sewage plants are becoming increasingly challenging and complex, particularly with regard to dissolved organic substances.

Especially municipal sewage plant effluents are among the most critical paths of entry for micropollutants into surface waters. Many of these so-called trace substances are hazardous to the environment and health, are not readily biodegradable and can accumulate in the environment.

The objective of the fourth treatment stage is to reliably and efficiently remove these dissolved organic substances from the wastewater treatment plant effluent.

HUBER offers versatile key modules for this process. Depending on individual requirements and boundary conditions, ideally matched product solutions for pretreatment, adsorption or PAC removal can be provided:

- Adsorption process with granulated activated carbon (**GAC**)
- Adsorption process with powdered activated carbon (**PAC**)
- HUBER preliminary treatment components reduce solids and microplastics by means of upstream filtration or screening. This ensures stable and trouble-free operation of the fourth treatment stage on a permanent and reliable basis.

Optionally, further treatment stages such as ozonation, phosphate precipitation (3rd treatment stage) or UV disinfection (5th treatment stage) can be easily and modularly integrated into the respective solution concept, especially if simultaneous elimination of

microplastics, phosphorus, trace substances and dangerous pathogens is desired.

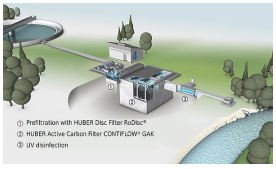
GAC Process

ADSORPTION PROCESS WITH GRANULATED ACTIVATED CARBON (GAC)

Adsorption with granulated activated carbon (GAC) is a simple, reliable and, above all, low-maintenance process.
Therefore, it is ideally suited as a fourth treatment step for smaller wastewater treatment plants. The core component is the HUBER Active Carbon Filter CONTIFLOW® GAK, ideally in combination with a HUBER Disc Filter RoDisc® as upstream treatment stage.

Depending on requirements and boundary conditions, the process can be extended by an intermediate ozonation stage. This significantly increases the broadband effect and additionally extends the service life of the activated carbon.

The adsorption process with its simple and low-maintenance plant operation is ideal for smaller wastewater treatment plants (< 50,000 p.e.). No secondary downstream filtration is required an the activated carbon can be regenerated and largely reused.



Combination of disc filtration with activated carbon filtration (GAK) and downstream UV disinfection (5th treatment stage)

HUBER Active Carbon Filter CONTIFLOW® GAK as 4th treatment stage on STP Fridingen

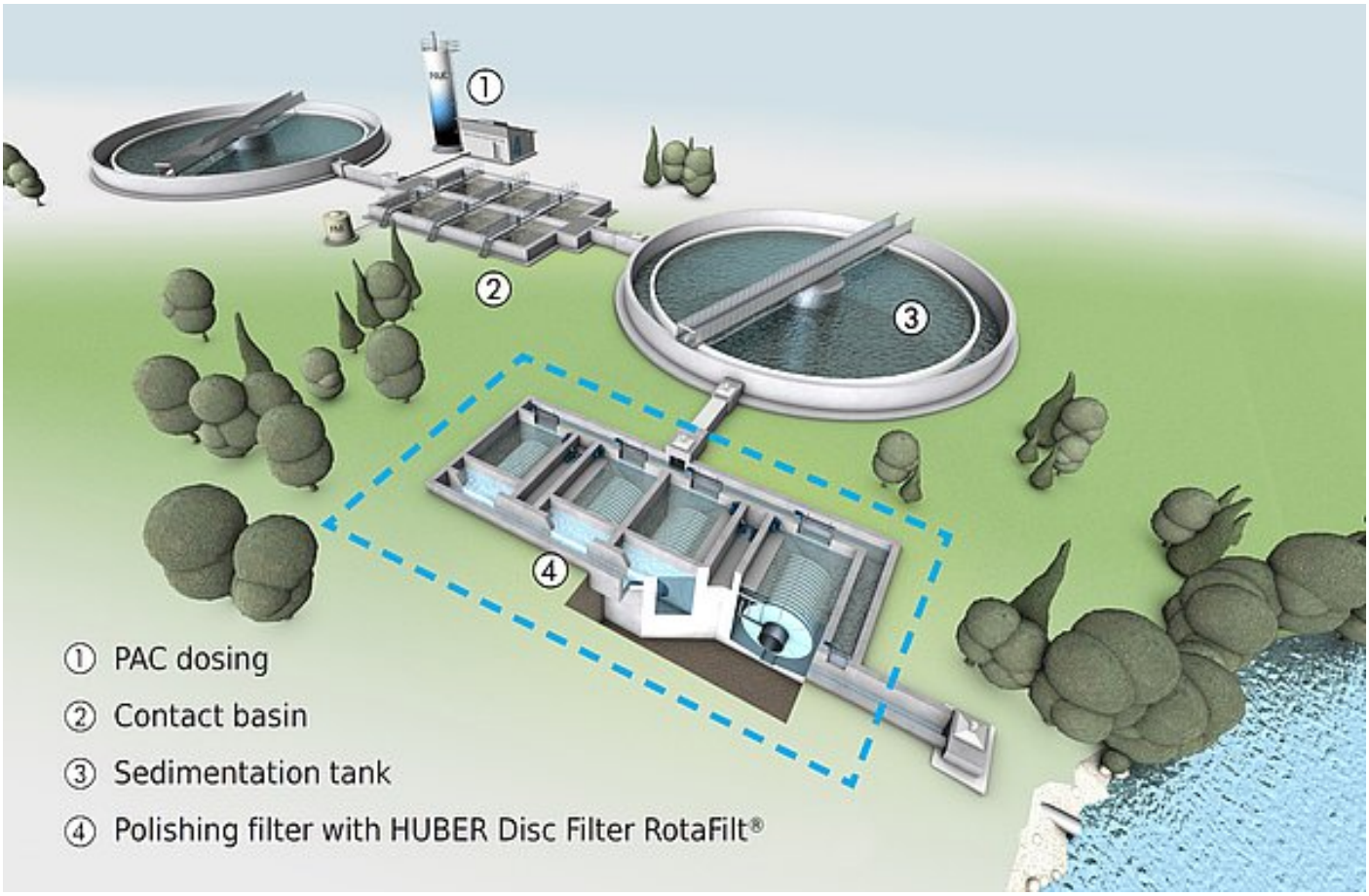
PAC Process

ADSORPTION PROCESS WITH POWDERED ACTIVATED CARBON (PAC)

The adsorption process with powdered activated carbon (PAC) consists of a PAC dosing unit, a contact basin with precipitation and flocculation, and a sedimentation basin. The final stage of the process is a special polishing filter.

The HUBER Disc Filter RotaFilt® is an ideal product solution for this purpose. It reliably retains even the finest carbon slip that could not be separated in the sedimentation tank.

This very reliable and operationally safe process is economically interesting especially for large wastewater treatment plants (> 100,000 p.e.).



Fourth treatment stage: Typical process with HUBER Disc Filter RotaFilt® as downstream polishing filter

Downloads

- Brochure: Solutions for the fourth stage of wastewater treatment [pdf, 1.02 MB]
- Brochure: HUBER Active Carbon Filter CONTIFLOW® GAK [pdf, 360 KB]
- Brochure: HUBER Sandfilter CONTIFLOW® [pdf, 402 KB]
- Brochure: HUBER Disc Filter RoDisc® [pdf, 359 KB]
- Brochure: HUBER Disc Filter RotaFilt® [pdf, 657 KB]

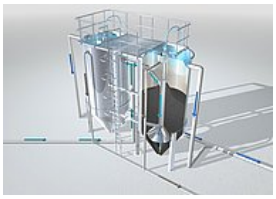
Tapasztalatok

- Two HUBER lighthouse projects of the fourth treatment stage: construction of the micropollutant removal plants in Bickenbach and Uhldingen is progressing rapidly
- Trade fair novelty for advanced wastewater treatment: The advantages of the new HUBER Pile Cloth Media Filter RotaFilt®
- Bickenbach Wastewater Treatment Plant: HUBER supplies technologies for Hesse’s first plant for elimination of trace substances
- HUBER offers convincing key components for a tailor-made 4th treatment stage
- Research project: removal of micropollutants with the use of ozone and granulated active carbon
- Removal of micropollutants: Fourth treatment stage with the HUBER Sandfilter CONTIFLOW®

Products

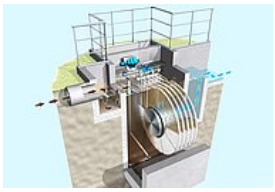
HUBER offers various high-performance key components for process solutions for a tailor-made 4th treatment stage.

The HUBER Active Carbon Filter CONTIFLOW® GAK is a reliable product for the removal of trace substances. Combined with the HUBER Disc Filter RoDisc® as a microscreen or the HUBER Sandfilter CONTIFLOW® as pre-treatment, it forms a versatile key component and an ideally matched process solution for the 4th treatment stage.



HUBER Active Carbon Filter CONTIFLOW® GAK

For the so-called "Ulm process", the classical adsorption process with powdered activated carbon (PAC), HUBER has now added to its product portfolio the new HUBER Disc Filter RotaFilt®, a reliable, high-performance polishing filter. This filter is placed downstream of the adsorption stage and the sedimentation tank and, with its innovative pile fabric material, ensures an almost completely particle-free effluent.



HUBER Disc Filter RotaFilt®

- HUBER Active Carbon Filter CONTIFLOW® GAK
- HUBER Sandfilter CONTIFLOW®
- HUBER Disc Filter RoDisc®
- HUBER Disc Filter RotaFilt®

A HUBER csoport képviselete

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