



FLEXBED FILTER

**COMPACT
POWERFUL
FOR UNIVERSAL USE**



APPLICATIONS OF THE FILTER

- Phosphorus removal after precipitation
- Forth treatment stage for communal waste water
 - Removal of micropollutants in combination with powdered activated carbon
 - Prefiltration upstream
 - Granulated activated carbon adsorbers
 - Ozonisation
- Prefiltration for
 - UV disinfection
 - Ultrafiltration
- TSS removal downstream overloaded secondary clarification
- Police filter before discharge into sensitive waters
- Universally applicable for removing all types of particles and turbidity from
 - Waste water
 - Raw water / drinking water
 - Industrial water
 - Process water

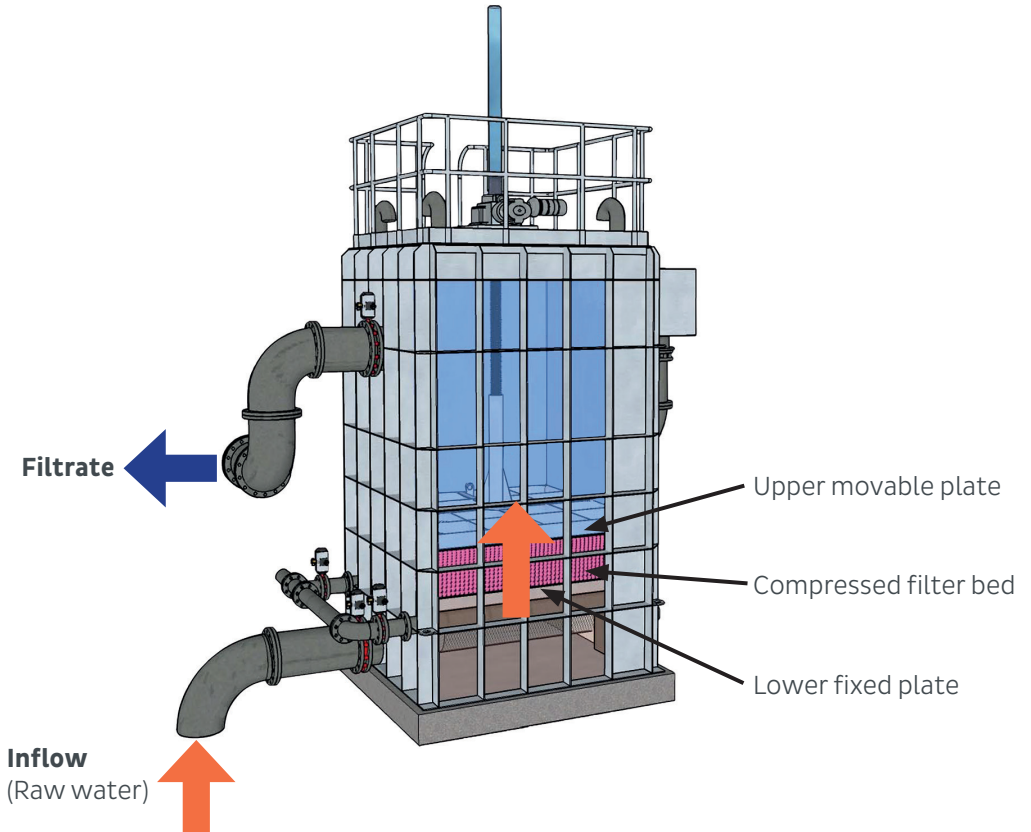
YOUR BENEFITS AT A GLANCE

- 💧 Universally applicable depth filtration technology
- 💧 Modular design, easy to retrofit
- 💧 Low space requirement due to high hydraulic load ($75\text{m}^3/\text{m}^2\cdot\text{h}$)
- 💧 Backwashable filter bed
- 💧 Low wash water consumption
- 💧 No filtrate nor fresh water needed for back washing
- 💧 Adjustable pore sizes (works like a multilayer filter)
- 💧 No blocking of the filter bed
- 💧 High load capacity (approx. $15\text{ kg}/\text{m}^3$)
- 💧 Long life cycle (10 years or more)
- 💧 Low wear and maintenance costs
- 💧 No loss of filter material
- 💧 Fully automatic operation

HOW THE FLEXBED FILTER WORKS

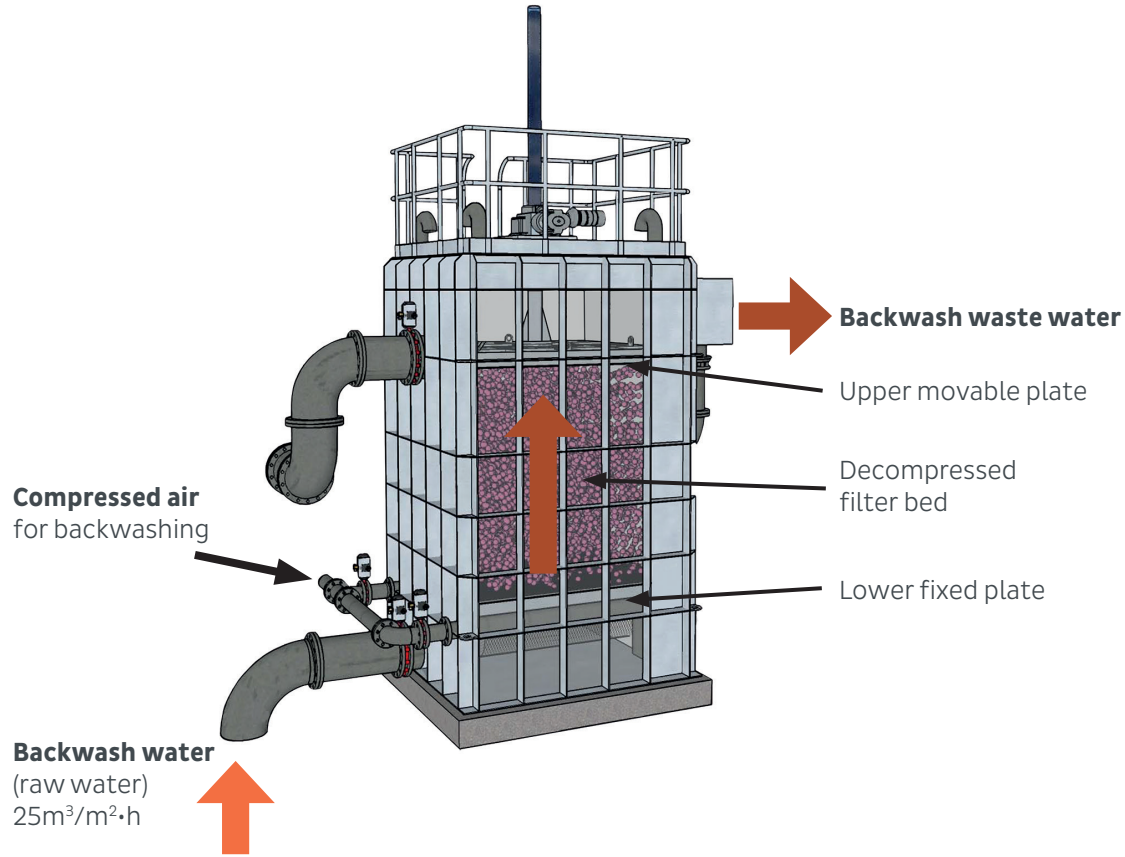
FILTRATION

- Up-stream process at high hydraulical load (75m/h)
- Compressed filter bed
- Graduated pore sizes
- No clogging of the filter bed
- Insensitive to TSS concentration peaks
- Monitoring of the loading status by monitoring the pressure increase
- No pressurized filter (max. pressure in filter 550 mbar)



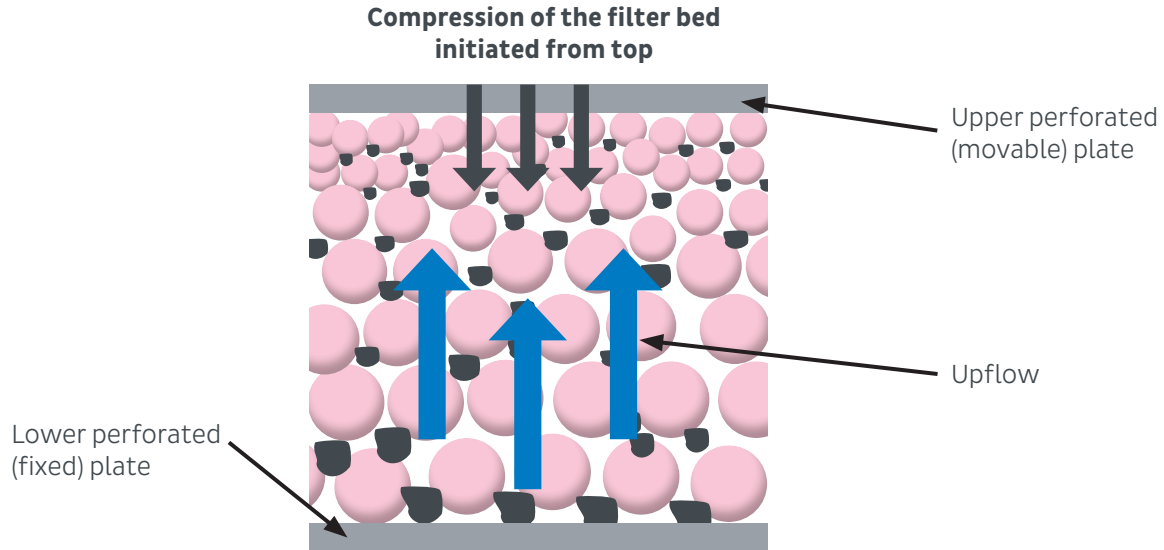
BACKWASH

- Automatically when maximum pressure is reached
- Backwash with raw water (no filtrate or fresh water)
- Low backwash water consumption (20 to 25 min at $25 \text{ m}^3/\text{m}^2\cdot\text{h}$)
- Low energy consumption for purge air (max. 600 mbar pressure necessary)



HOW THE FLEXBED FILTER WORKS

PORE SIZES IN THE FILTER BED ARE STEARED BY COMPRESSION RATE



- 💧 Formation of a compression gradient / pore size gradient in the filter bed
- 💧 Filter performs like a multi-layer filter during the filtration process
- 💧 Backwashing is as simple as with a mono (single-layer) filter
- 💧 Simultaneous loading of the whole filter bed
- 💧 No formation of an unintended barrier layer possible



OUR SERVICES

SINGLE SOURCE - FROM INDIVIDUAL FILTERS TO COMPLETE SYSTEMS

- Flexbed Filter systems as a complete package and / or turnkey solutions for micropollutant, phosphorus and TSS removal
- Maintenance contracts
- Service package
- Providing of an intelligent dosing system for powdered activated carbon and precipitation agents
- Online monitoring by using a cloud-based operating system

AVAILABLE FLEXBED FILTER SIZES

Type	Filter surface [m x m]	Capacity at v = 75 m/h [m ³ /h]
1	0,5 x 0,5	19
2	0,75 x 0,75	42
3	1,0 x 1,0	75
4	1,25 x 1,25	117
5	1,5 x 1,5	169
6	1,75 x 1,75	230
7	2,0 x 2,0	300

Dimensions				
Type	a	b	c	d
1	0,8	0,8	2,6	3,8
2	1,0	1,0	2,7	3,9
3	1,4	1,4	3,0	4,5
4	1,6	1,6	3,2	4,6
5	1,9	1,9	3,5	4,9
6	2,1	2,1	3,9	5,2
7	2,4	2,4	3,8	5,3

External dimensions a = Width, b = Length,
c = Height without spindle, d = Height incl. spindle



REFERENCES

FOURTH TREATMENT STAGE AT BARNTRUP MUNICIPAL WASTE WATER TREATMENT PLANT (NRW, GERMANY)

💧 Removal of micropollutants (powdered activated carbon) and phosphorus

- Commissioning 2018
- 13.000 PE
- Capacity 160l/s (Complete wet weather flow treated)
- 4 Flexbed Filters type 7, total filter area 16m²

LANDFILL LEACHATE TREATMENT „ALTE SCHANZE“ PADERBORN (NRW, GERMANY)

💧 Removal of suspended solids (TSS) and particulate COD

- Commissioning 2019
- Capacity 19 m³/h
- Duplex stainless steel filter vessel
- 2 Flexbed Filters type 1



BECAUSE EVERYONE HAS THE RIGHT TO HAVE CLEAN WATER!



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