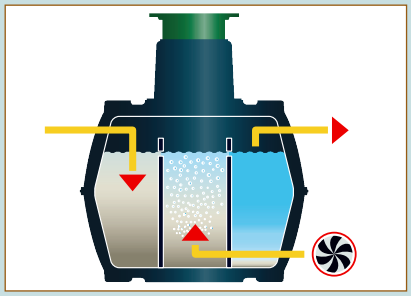
How does a wastewater treatment system work?

Cleaning process Moving Bed system



>> **System Picobell**
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1. A Moving Bed system comprises three chambers. The wastewater first enters the first chamber. All solids sink to the bottom here. Floating particles is retained thanks to the overflow openings.

2. The wastewater enters the second chamber through the overflow openings. Actual biological cleaning by micro-organisms occurs here. Those micro-organisms stick to the carrier material, which is made of plastic. The carrier material has a very large surface. The bacteria needed for purification stick to the carrier material such as a „biofilm".

So that the bacteria receive enough oxygen to „breathe", the Moving Bed is regularly streamed with air. An air compressor is used for this purpose, which is installed in the cellar or in the garden outside the reservoir.

3. Then the wastewater enters the third chamber for final treatment. The remaining solids settle there and they are pumped back to the first chamber from here. The purified wastewater can now be fed into a discharge system (stream, river, sea) or into a GRAF infiltration system.

Cleaning process SBR system

With the SBR technology (sequencing batch reactor) there is separate primary treatment to retain the coarse material and a combined sludge activation and final treatment reservoir, the so-called SBR reservoir. This system comprises 2 chambers.

>> **System Klaro Easy**
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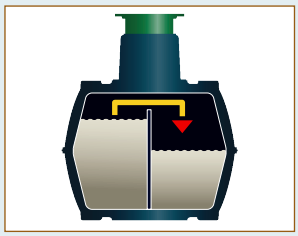
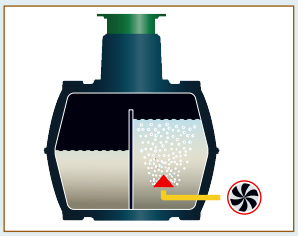
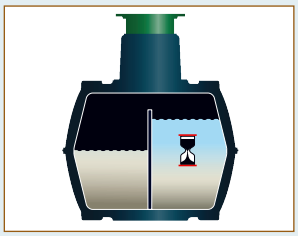


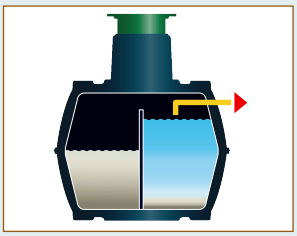
1. Coating phase
The wastewater goes first into primary treatment (1st chamber), where the solid substances are retained. From there, the wastewater is fed into the SBR reservoir (2nd chamber).



2. Aeration phase
The actual biological cleaning by microorganisms now occurs in the SBR reservoir. Short aeration and rest phases interchange in a controlled cleaning process. The so-called live sludge can now develop with millions of microorganisms and clean the water thoroughly.



3. 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 reservoir.



4. Sewage water draw-off
The purified wastewater is now be fed into a discharge system (stream, river, sea) or into a infiltration system. Afterwards, the sludge is fed back from the SBR reservoir into the first chamber.

Moving Bed wastewater treatment system GRAF Picobell

Simple and cost-effective

With the development of the Picobell Moving Bed system, a GRAF treatment system is now available which has simple technology and, at the same time, offers high cleaning performance.
The system's technology comprises just one air compressor, a pipe ventilator, sludge removal and the carrier material.
The system works completely without electronic control, pumps and magnetic valves.
A further advantage of the Moving Bed system is that the high cleaning performance is also maintained with strong underfill.

System control Picobell

15 years warranty 3 years warranty

CE

15-year warranty on sewage reservoirs
15-year warranty for Picobells
3-year warranty on technology

Cost-effective and well thought-out

The compact and quiet air compressor is integrated in compact housing. It reduces the system's energy consumption to a minimum and is easily installed in the plant room of the house. Additionally, this means the system does not need consistent integration of live technology in the tank.
All the movement processes are performed by the whisper quiet air compressor.

Maintenance

The need for maintenance is kept to a minimum. This is mainly due to the permanent self-cleaning of the carrier material and the modern control technology. Thus, maintenance just consists of regular function testing and sludge removal.

Self-cleaning Picobells

The carrier material is constantly mixed in the wastewater through aeration. During the mixing and swirling these will get automatically cleaned. The possible degradiation with the time of the cleaning performance belongs now to the past.

The biofilm, which is responsible for cleaning the wastewater, settles on the approx. 3 cm wide Picobells. The unique, lamellae-shaped design gives the carrier material a maximum surface and this is where the cleaning power lies.

Picobell one-reservoir system

Inhabitants [max.]	Total volume [ltrs]	Capacity [ltrs]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
2-4	3750	3750	2280	1755	2200	200
4-6	4800	4800	2280	1985	2430	255
6-8	6500	6500	2390	2190	2710	310

Scope of supply: 1 Carat S underground tank with 2 baffles, telescopic dome shaft, system pack Picobell for one-reservoir system (page 23 – the modular system). Please order air hose separately (accessories).

Picobell two-reservoir system

Inhabitants [max.]	Total volume [ltrs]	Capacity [ltrs]	Length [mm]	Width [mm]	Height [mm]	Weight [kg]
8-10	7500	2 x 3750	2280 2280	1755 1755	2200 2200	150 175
10-12	9600	2 x 4800	2280 2280	1985 1985	2430 2430	185 220
12-18	13000	2 x 6500	2390 2390	2190 2190	2710 2710	220 265

Scope of supply: 1 Carat S underground tank, 1 Carat S underground tank with baffle, 2 telescopic dome shafts, system pack Picobell for two-reservoir system (page 23 – the modular system). Please order air hose separately (accessories).

Accessories

Air hose sold by the metre

Order no. 372791

Plastic external switch cabinet

for 2-12 inhabitants

On request