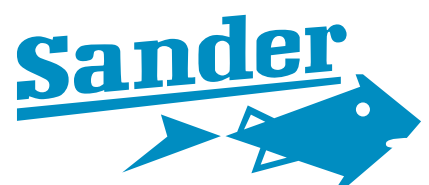




BIOLOGICAL FILTRATION



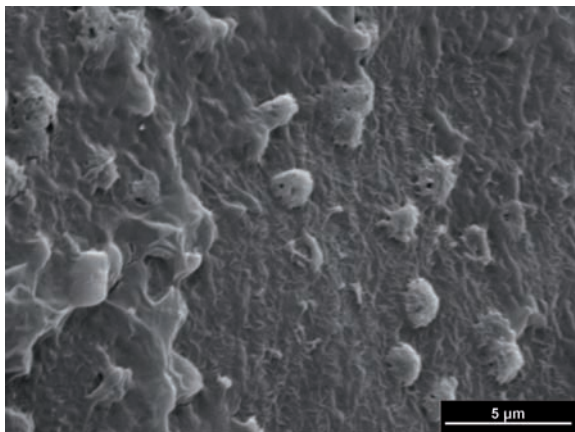
In an aquarium or in aquaculture systems fish mainly excrete - besides a multitude of metabolic products - ammoniac nitrogen which is in balance with ammonium nitrogen and which exists as an end product from protein metabolism (feed).

The most common method of removing ammoniac and thus ammonium is through biological nitrification, in which bacteria convert ammonium into nitrite and finally into non-toxic nitrate in an aerobic environment.

Sander use biofilters with special filter media that offer bacteria a maximum settlement surface area. These nitrifying biofilters are characterised by extremely large specific surface, achieving a high efficiency per unit of volume while maintaining high process stability.



Filter media made out of plastic



Electron microscope image of the biofilm on the surface of the filter media

Inside the biofilter, organic substances such as protein compounds, faeces, and non-eaten feed are converted into inorganic substances through the so-called mineralisation. This process affects the nitrification performance of the biofilter negatively. For this reason an effective solid separation in the system is of crucial importance.

Sander Biofilter - "Submers"

The Sander Biofilter Model "Submers" is in process of continuous rinsing. During the rinsing the biofilm surface of the filter media is in an uninterrupted washing process. Therefore the plugging and clogging of the filter is being avoided.

Sander Biofilter "Submers" are suitable for freshwater and seawater.

The values listed in the table below should be considered as benchmark data. Deviations are possible.



Biofilter dimensions (diameter and tank height in mm) for different aquaria volume (m³).

Diameter (mm)	Height (mm)								
	1000	1200	1500	2000	2500	3000	3500	4000	4500
250	1	2	3						
300	2	3	4						
500		5	7	11					
600			11	17	22				
850			22	34	45				
1000			31	47	62	78	94		
1500			63	98	134	169	204	204	275
2000				175	238	301	364	427	490
2500				274	373	471	569	667	765

Customers' specific fabrication in different sizes and shapes are possible.

Non binding. Benchmark data.

Sander has the know-how and a unique technology that allows the production of seawater fish in land-based indoor recirculation plants.

The design of the plants offers sustainable fish-farming, with an economic, environment-friendly and highest quality fish production.



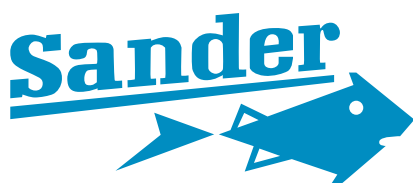
Clear water conditions are indispensable for tasty and high quality fish.



Photo sources: Erwin Sander Elektroapparatebau GmbH - www.photocase.com
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WE MAKE IT CLEAR!



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