



# CleanSewage Bio Biological Sewage Treatment

RWO  VEOLIA

The smallest system  
made by the market leader for  
marine water treatment

**WATER TECHNOLOGIES**

# Sewage treatment with no efforts

**CleanSewage Bio** is designed to put all efforts with wastewater treatment to the lowest level possible. The **accessibility from one side** allows ship designers to plan space in the engine room on a whole new level.

Operators and crew are pleased with a **hygienic no-touch-cleaning** system, an intuitive status control allows **checking at a glance**, whether the system is running or intervention is necessary. Thereby **CleanSewage Bio** works with a **proven 3-chamber-treatment concept** that ensures highest water quality according to MEPC.227(64).



One Side Access:  
All works can be done from one side, no further maintenance space is required

## Main Advantages

### Safe

- > Integrated mechanical pre-treatment
- > No harmful or flammable chemicals
- > Certified by German Authority BG Verkehr

### Easy to operate

- > No-touch-system for hygienic sludge discharge
- > 100% control through individual switches for every aggregate
- > Fast restart after maintenance due to biomass carrier in cages

### Small

- > No holding tank necessary
- > Up to 25% less space demand through unique one-side access

### Suitable for black & grey water

### Compatible with all vacuum systems

## > CleanSewage Bio – Capacities and Sizes

Typ	Organic Load (kg/d BOD <sub>5</sub> )	Hydraulic Load [m <sup>3</sup> /d]	Dimensions L x W x H (mm)	Weight	
				Net (kg)	Wet (kg)
<b>CS Bio 01</b>	n/d	n/d	n/d	n/d	n/d
<b>CS Bio 02</b>	1,38	2,16	2095 x 1250 x 1480	859	2923
<b>CS Bio 03</b>	2,07	3,24	2608 x 1346 x 1612	1149	4134
<b>CS Bio 04</b>	3,11	4,86	2559 x 1646 x 1618	1335	5293
<b>CS Bio 05</b>	4,14	6,48	2781 x 1656 x 2058	1627	7407
<b>CS Bio 06</b>	5,52	8,64	3365 x 1656 x 2058	1885	9278
<b>CS Bio 07</b>	6,90	10,80	3365 x 1986 x 2058	2121	11719

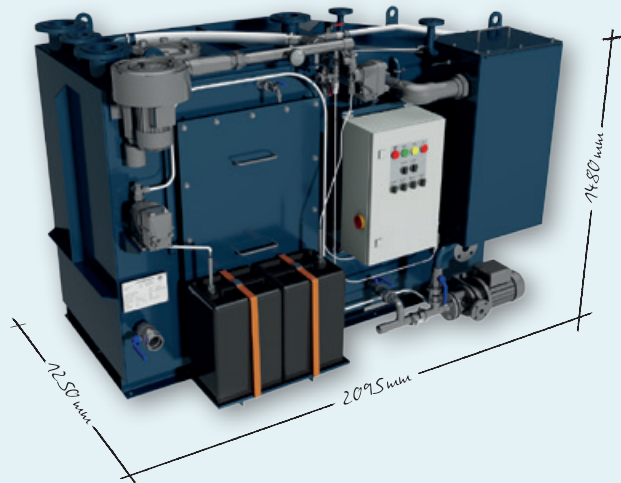
- Data are subject to change without further notice -

# How it works

**1.** RWO CleanSewage Bio works with a 3-chamber-process. In the Moving-Bed Biofilm Reactor (MBBR) organic matter is degraded into carbon dioxide and water by microbial activity. Biofilm carriers inside are clustered in cages, which significantly eases handling and maintenance. Aeration stabilises the biomass and prevents harmful and dangerous gases from forming.

**2.** In the Clarifier residual solids are separated by sedimentation and returned back into the Bioreactor. The treated wastewater flows into the Disinfection chamber.

**3.** Here a chlorine-based disinfection chemical is added. The clean water then is pumped overboard. To meet the limit values set for the chlorine content, a special neutralising agent, LC35, is dosed prior to the discharge pump.



CleanSewage Bio 02 is the smallest capacity of the CleanSewage Bio series so far. Taking into account the space demand for maintenance it is one of the smallest systems on the market.

Treated excess sludge, reduced in volume, can be discharged or collected in an external tank. Due to the biomass retained by the MBBR process, sludge discharge does not interfere with the performance of the plant.

## > Operating principle

