MBCR Filtration Container

- Sewage treatment plant for 400 to 5,000 population equivalents
- Moving Bed Ceramic Reactor (MBCR) – The advanced process combination
- Compact plug & play design
- Containerized comprehensive solution

Our solution – Your benefits

The System

IItN Nanovation's MBCR-Filtration Container is a complete mobile solution for treating municipal or similarly polluted sewage.

It combines a biological treatment process based on MBBR technology with a subsequent micro-filtration by ceramic flat membranes.

Offering an unprecedented efficient sewage treatment with robust and reliable disinfection process, the plant has been developed and is being produced by ItN Nanovation.

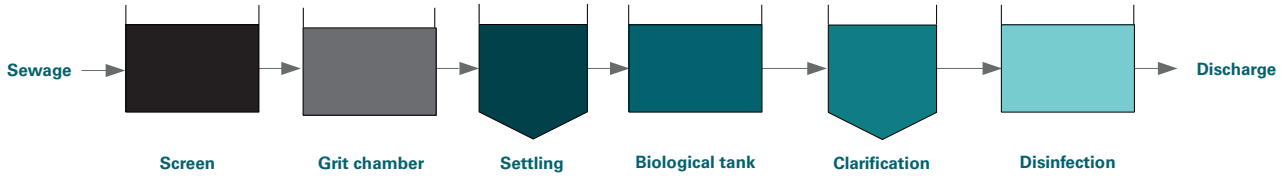
State-of-the-art monitoring and control technology ensure a simple, safe, trouble-free and continuous operation of the system.

The MBCR Filtration Container has been developed for a reliable and cost-saving sewage treatment for several reuse purposes, e.g. for irrigation or flushing water.

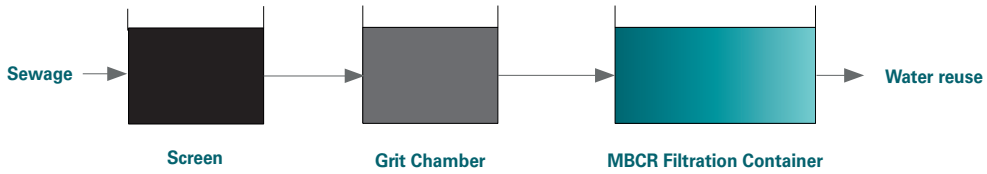
The MBCR Filtration Container can be integrated in existing treatment systems or be used as stand-alone solution.

The plug & play design makes sure commissioning is fast and trouble-free and can be done on site.

Process in a conventional sewage treatment plant



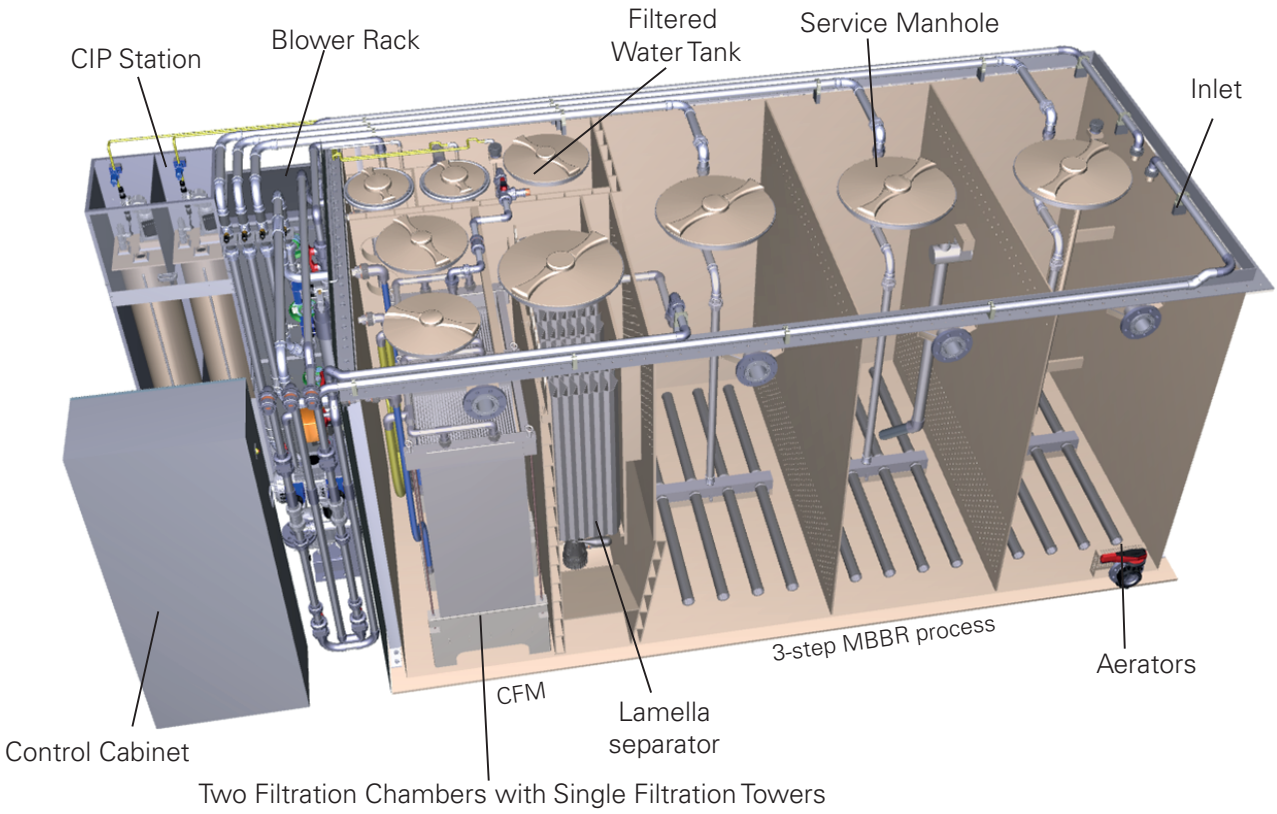
Advanced solution – MBBR Container Plant



Technology Comparison

	Conventional Sewage Treatment Plant	MBCR Filtration Container
Plant Layout	Large-size with several subprocesses.	Compact design with simple process chain.
Disinfection	Clarification alone does not remove total suspended solids (TSS), germs and bacteria. A subsequent disinfection only kills germs and bacteria, but they remain in the water. Inactivated micro-organisms remain a potential hazard which limits reuse purposes.	A filtration process using robust ceramic membranes ensures a 100% removal of suspended solids and is real barrier for germs and bacteria. The treated water can be safely reused for several purposes.

Technical Description



Two Filtration Chambers with Single Filtration Towers

Sewage is pumped into the MBCR Filtration Container. A 3-step MBBR process enables individual modes of the biological process for a targeted treatment of COD/BOD, total N and P according to the customer's requirements. The biologically treated water flows by gravity into a lamella separator to collect generated excess sludge, which needs to be discharged on a daily basis and can be collected in an external sludge holding tank.
The overflow of the lamella separator enters into the filtration chambers. The water is filtered through CFM Systems Single Filtration Towers and the filtered water is collected in a filtered water tank.
Depending on sewage characteristics and CFM performance the integrated control system monitors the process status and automatically starts required membrane CIP. The overflow of the filtered water tank can be directly reused for various purposes or alternatively be collected in external filtered water storage tanks.

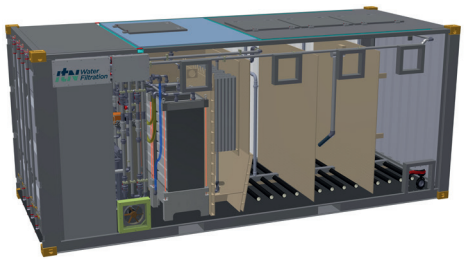
Technical Data

Technical Design Data

Biological System	Conventional 3-step MBBR process	
Sewage Parameters	Raw sewage (plant inlet)	Filtered water (plant outlet)
COD [mg/l]	300	< 50
BOD [mg/l]	150	< 5
Total N [mg/l]	15	< 10
P [mg/l]	5	None
TSS [mg/l]	100	< 5
Germs & Bacteria	-	Disinfected (certified Log Removal 3.8–4.7)

Standard Plant Sizes

Type of MBCR Container	**MBCR S-Type ISO 20′**	**MBCR M-Type ISO 40′**
Max. Capacity [m³/d]	55	110
Max. Population Equivalent	500	1,000



Core Components and Additional Data

Type of Ceramic Flat Membrane	See technical data sheet "Ceramic Flat Membrane"
Type of Filtration Module	Filtration Module T HP-S See technical data sheet "Filtration Module T-Series"
Type of Frame Design	See technical data sheet "Single Filtration Tower"
Additional Data	See technical data sheet "MBCR Filtration Container"

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