



OBERZOM S.A.
Research and Development

WASTEWATER TREATMENT SYSTEM



00 MBBR FILTER COINTAINER



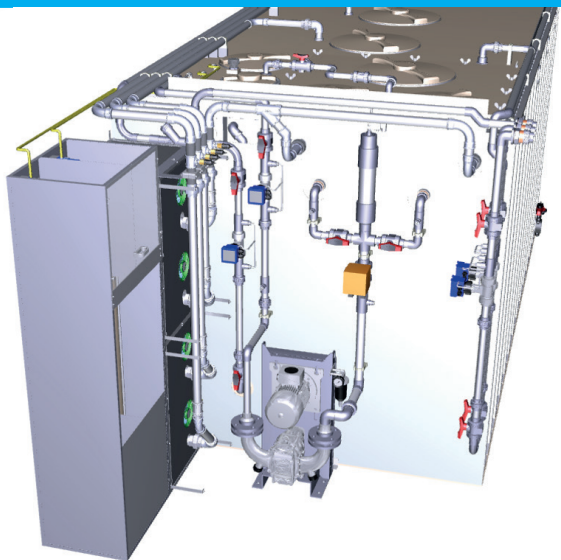
00 MBBR FILTER CONTAINER

WASTEWATER TREATMENT SYSTEM

A complete wastewater treatment system integrated into a 20' container with a cleansing/purification amount of 50m³ black water per day or an amount of 80m³ grey water per day. This unit can be used as an independent wastewater treatment system for the cleaning of municipal wastewater produced by a population of approximately 300 - 500 people.

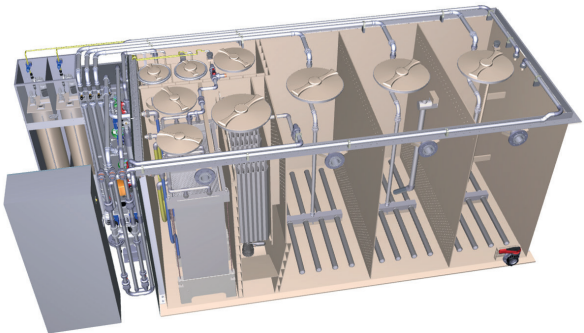


01 DESCRIPTION

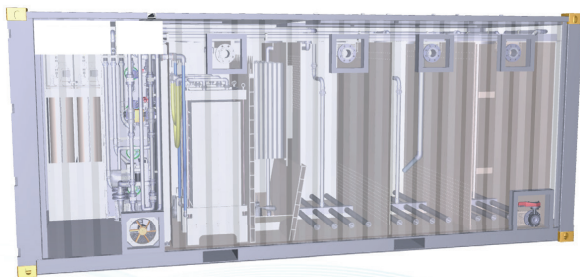


- ◆ 20' standard TEU- container out of structural steel holding the Voiglaender water brand logo at the outside.
- ◆ Main PE tank contains a coated structural steel alerting with biological reaction chambers, the lamellae separator tank, the filtration tank, the sludge storage tank and also including the permeate saving tank.
- ◆ Three independent biological reaction chambers with polymeric versatile chips, venting tubes and a hatch for simple preventive maintenance.

- ◆ a lamellae separator tank integrated between biological reaction chambers and the filtration tank
- ◆ including the hatch for simple maintenance.
- ◆ stored program controllers, men machine interface with an LCD screen, manual keys and electronic I/O- interface in the included switchgear cabinet 230 VAC 50Hz.
- ◆ CIP (Cleaning-in-place)- unit for the automatic cleaning of two chemical storage containers for
- ◆ citric acid and NaOH with single dosing pumps on the upper surface for the automatic cleansing of the filter.
- ◆ Multipole cable connection for the three - phase - grid - connection $3 \approx 400\text{VAC}/50\text{Hz}$ - max. 8,0
- ◆ $\text{kVA} \cos \Phi = 0,8$



- ◆ software to automatically control and observe the entire unit combining a communication interface for the communication of the vicinity, internet connection and wifi - service to the mobile network
- ◆ on-site training courses with an engineer or a technician (travel expenses, accommodation and daily allowance are not included in scope of delivery).
- ◆ filtration tank combining two eight module cleaning towers. Each one consists out of a
- ◆ 4m² cleaning area, coated with the Nan-ZrO module type (T) including a pipe installation and a hatch for simple maintenance.
- ◆ sludge storage with a submersible pump to recirculate into the first biological reaction chamber and to minimize the sludge volume.
- ◆ permeate saving tank for an inner backwash-water-storage holding a hatch for simple
- ◆ maintenance with a water overflow as an outlet.





- ◆ manual drain valve for the main biological reaction tank.
- ◆ main filtration pump with an integrated pump, electric motor coming from the drive of a rubber belt and also an integrated devolatilizing unit.
- ◆ a full sensor program such as sensors for temperature, fill levels, flow through the membrane, O₂ concentration and pH-level.
- ◆ three biological reaction chambers combining a fan unit with four aerators, filtration tank
- ◆ connected to a stainless steel cabinet with an external ventilation grille.

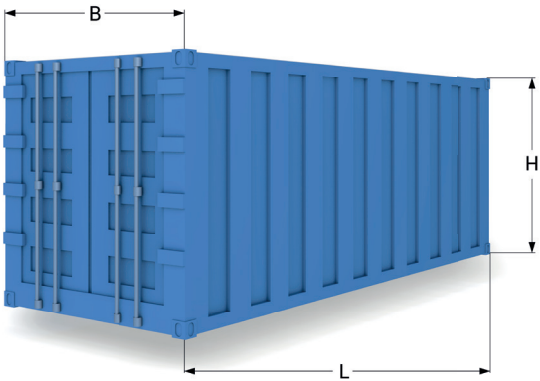
02 CONDITIONS

Before it is possible to start with the installation of the MBCR container it is urgent to consider and review the following conditions:

- ◆ local guidelines and applicable regulations
- ◆ capacity of the supporting ground (through a construction engineer)
- ◆ the position of available tanks and pipelines
- ◆ pipe connection possibility
- ◆ installation of a safety rail
- ◆ frost protection for pipelines
- ◆ scheduled emergency spillways
- ◆ sludge storage and containment possibilities
- ◆ power supply and connection
- ◆ construction and safety equipment
- ◆ infrastructural accessibility for trucks

03 MEASUREMENTS

length [L]	20' = 6,1 m
width [B]	8' = 2,44 m
height [H]	8' 6" = 2,59 m
net weight	18.735 lb = 7t



04 PHERIPHERY

Compensating reservoir
sludge tank

optional, Min. 20 m³
optional

05 FOUNDATION CALCULATION

Before installing the MBBR Filter Container, it is necessary to calculate the stability of the groundwork to ensure the proper functioning of the system. Therefore it has to be levelled into both directions.

TOTAL WEIGHT

The total weight of the container is dispersed across its four corners. The surface of each corner endures 290 cm³.

To calculate the total weight of the container it is necessary to consider the water weight, the weight of the container itself, of all connections, aggregates, membranes etc.

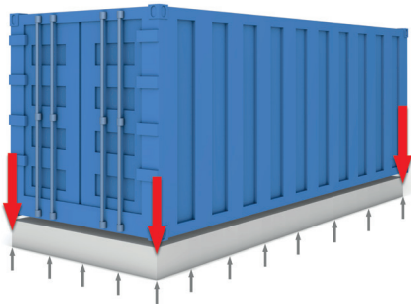
- 2.450 kg [sea freight container]
- 1.600 kg [net weight of the tank]
- 17.200 kg [total water weight]
- 550 kg [filter unit]
- 4.600 kg [Pipes and equipment]
- 800 kg [Biochip]

Gesamtgewicht: 24.200 kg

06 FOUNDATION

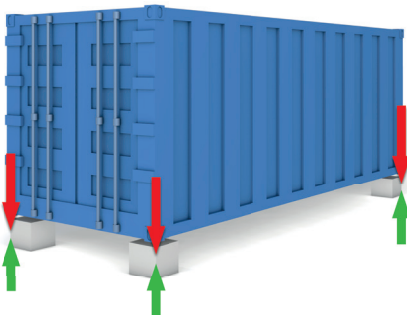
ALTERNATIVE I

gross weight	24.200 kg
foundation	15 m ²
structural stability	1.613 kg/m ²



ALTERNATIVE II

exposure of the corner	6.050 kg
foundation	0,6 m × 0,6 m = 0,36 m ²
structural stability	16.805 kg/m ²



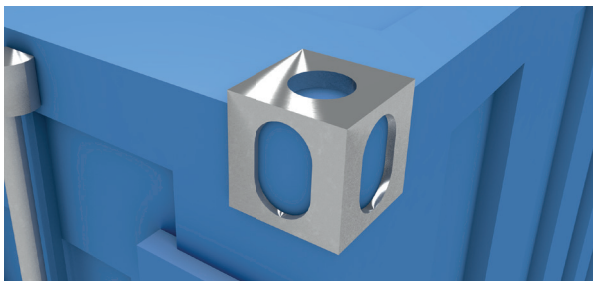
*Please keep under consideration that Alternative I and II are solely suggestions. The calculation of the foundation must be implemented by an engineer.

07 TRANSPORT AND LOADING

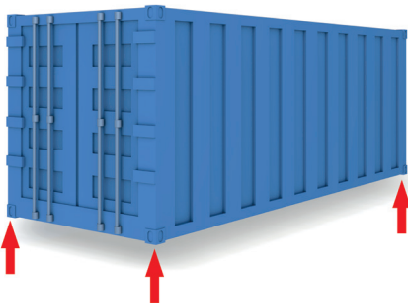
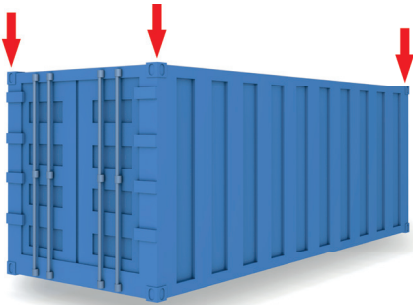
The delivery of the MBBR filter container is being proceeded by a suitable truck for a 20' sea freight container. The truck should have immediate access to the final location of the container.



Therefor the lifting device has to be suitable to lift up a 20' sea freight container. All containers are provided with corner fittings as already described in ISO 1161.



The lifting of the container should only be used by the intended lifting points. As ISO 1496 and the safety terms describe, the lifting points are located at the four under and upper corners of the container.



ALTERNATIVE I

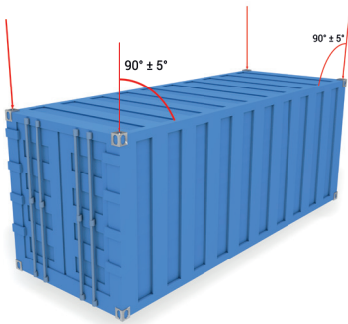
Before the container can be lifted up, the lifting points on the ground have to be connected to the lifting device. The net weight of the container amounts up to 7000 kg. The angle of the lifting device has to endure a 90° angle over the length of the edges.

Through the chain usage with abbreviated limbs it is possible to take account of the main emphasis. Before connecting with the main unit, both triangle linkings should be connected with a travers. The travers are available in two different versions: adjustable or fixed.



ALTERNATIVE II

If the container is lifted up by a top lift spreader the angle of each connection to the upper side should amount to 90° . The lifting device has to be capable of raising an up to 7000 kg.



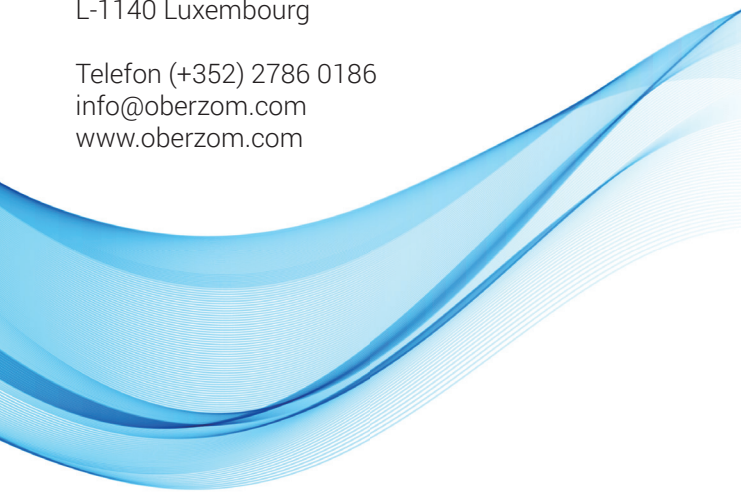
The total lift height of the crane has to be 7,15m (truck [1] + container [2] + lifting device [3] + hook [4]) and also be capable of lifting up the net weight of the MBBR.





Oberzom S.A. Research and Development
45-47 Route d'Arlon
L-1140 Luxembourg

Telefon (+352) 2786 0186
info@oberzom.com
www.oberzom.com

A decorative graphic at the bottom of the page consisting of several overlapping, wavy lines in various shades of blue, creating a sense of motion and depth.