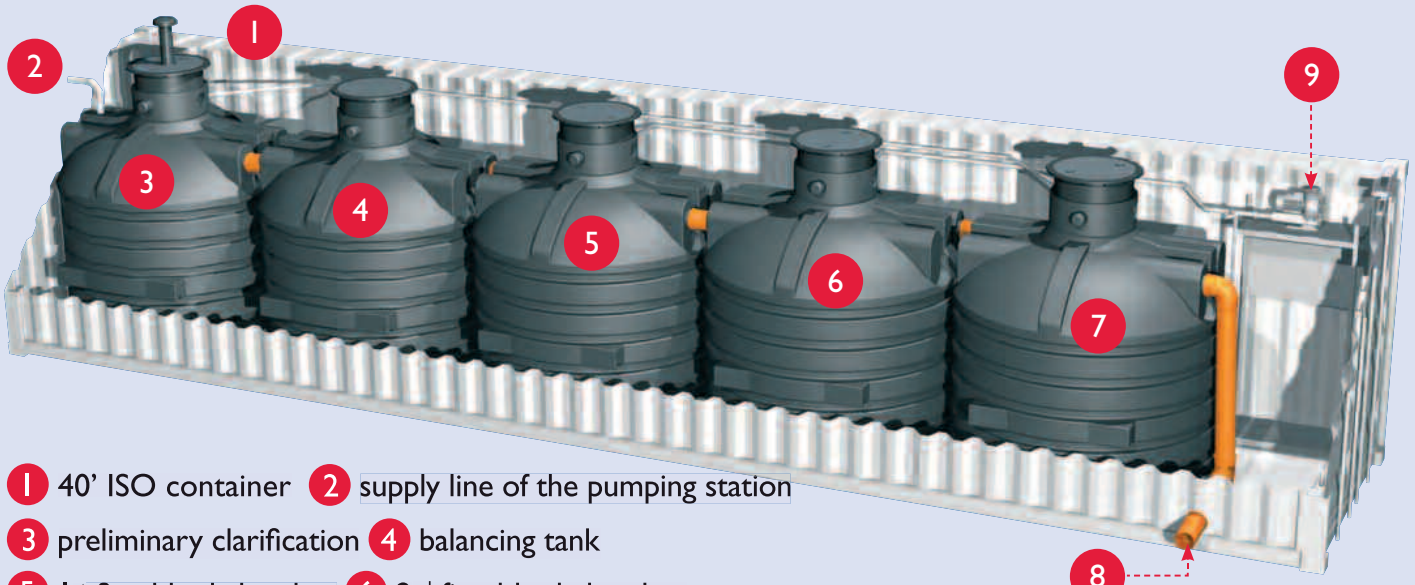
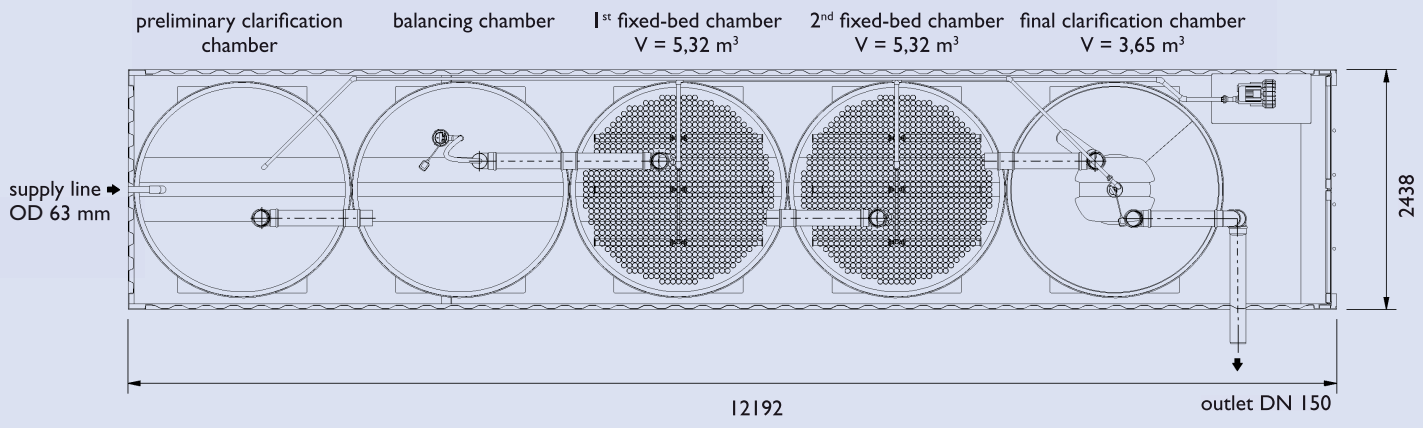


Example of a 160 IE container wastewater treatment plant **Delphin XL 2, R1**



- 1 40' ISO container
- 2 supply line of the pumping station
- 3 preliminary clarification
- 4 balancing tank
- 5 1st fixed-bed chamber
- 6 2nd fixed-bed chamber
- 7 final clarification
- 8 outlet
- 9 side-channel compressor for the aeration of the fixed bed



Layout of a 160 IE container plant

SIRIS
ENVIRONMENTAL

DELPHIN
water systems

Fully biological compact wastewater treatment
plants in an ISO container



Siris Environmental Ltd

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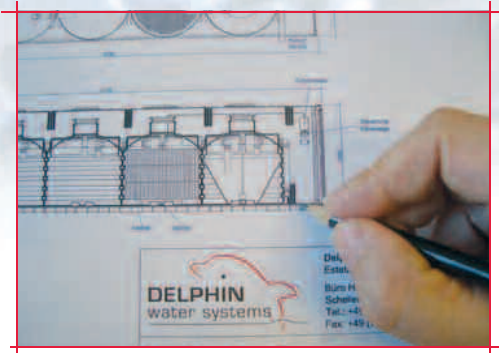
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Fully biological compact wastewater treatment plants in an ISO container



THE CLEAN SOLUTION



Fully biological compact wastewater treatment plant in an ISO container

Fully biological compact wastewater treatment plant in an ISO container
The **Delphin container wastewater treatment plant** is a fully pre-assembled biological system for the purification of domestic wastewater. Any wastewaters accruing for example in temporary sanitary facilities on construction sites or self-sufficient worker camps are treated. The connection size and the technical equipment of the plant can be adjusted to the specific needs. Starting with the smallest unit in a 20-foot ISO container for approx. 30 workers, to several 40-foot ISO containers for up to 1000 workers, a multitude of different connection sizes and configurations is available.



The basic concept is the ready-to-operate installation of the plant inside the ISO container; to allow the fastest possible on-site employment. The containers of the compact wastewater treatment plant are manufactured entirely out of weather- and wastewater-resistant PE plastic. Besides the simple transport of the plant to any place in the world, the ISO container also serves to protect the wastewater treatment plant installed above ground against external influences. Therefore, even the most challenging conditions on large-scale building sites do not affect the service life of the plant. This ensures repeated employment



Special models to meet your requirements

Construction sites are often set up at the remotest places in the world, involving special demands on the equipment. In warm regions, sufficient cooling of the biological plant through an appropriate aeration must be ensured; arctic conditions require additional heat insulation measures. Our plants have proven their suitability on almost every continent on earth. However, the regional conditions always exert an influence on the conception of the plant. With the modular design principle, special requirements with regard to environmental conditions can be taken into consideration easily by cleverly choosing the plant components. Special solutions with low space requirements are also possible. Here, the entire ISO container is lined with specific PE plates to use the full volume of the container as a wastewater treatment plant.



We have got the clean solution!



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Your advantage: superior technology

■ **Installing, connecting > ready!**

The plant is fully pre-assembled and serviceable immediately after the connection of the feed and discharge pipes.

■ **Mobility guaranteed**

Should the container wastewater treatment plant no longer be needed at its place of application, it may be transported to a new place within a very short period of time after emptying the containers.

■ **Ideal for temporary application**

With the fixed-bed method, idle times, as well as varying supply conditions can be dealt without any problems. A fixed bed, once covered, will re-achieve 100% of its initial purification efficiency just after a few days of running-in.

■ **No risk of flooding**

The wastewater travels through the entire system on a free incline.

■ **Low operating costs**

The plant requires no chemical reagents or other additives. The water is purified completely biologically only via atmospheric oxygen, which is introduced using blowers. The power consumption amounts to approx. 50 kWh per IE and annum for the standard purification efficiency or at approx. 100 kWh per IE and annum for the extended nitrogen removal.

■ **Low maintenance requirements**

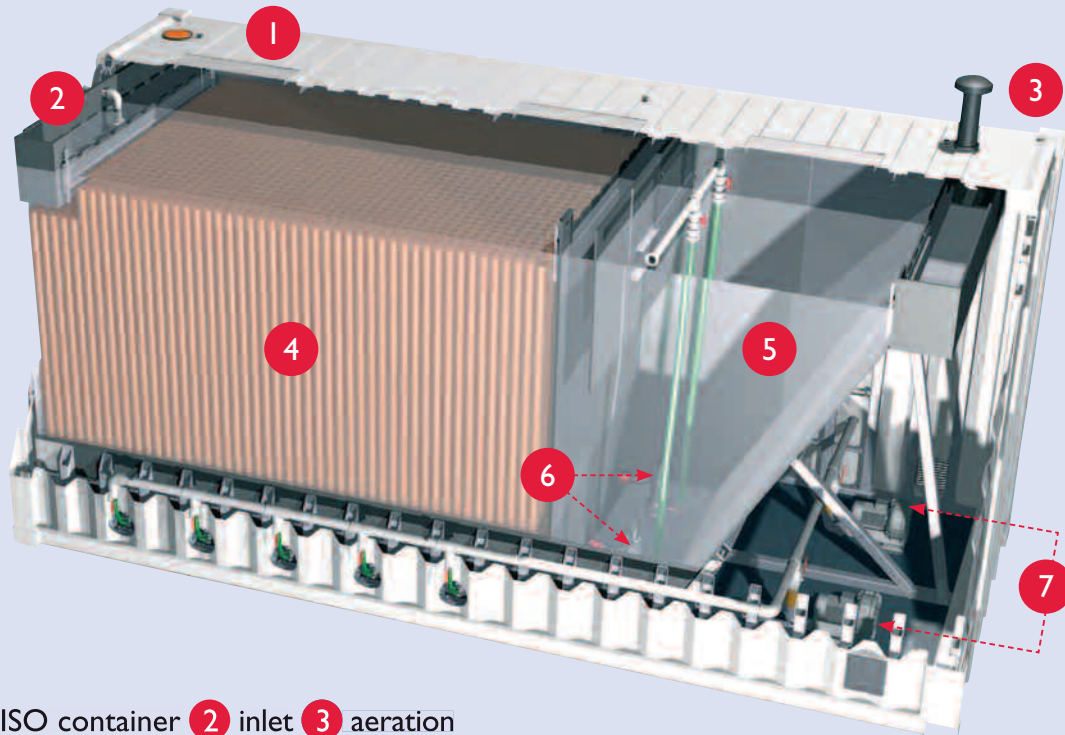
Maintenance action is reduced to a minimum as a result of the elimination of complex measurement and control technology and of fully automatic operation. The personnel can be employed for other activities on the construction site.

■ **Expandability**

The basic module of the plant can easily be expanded with additional treatment stages or with functions from our wastewater treatment plant range of products, e.g.:

- separate sludge treatment
- re-usage via UV treatment
- monitoring via long-distance data transmission

Example of a 300 IE container wastewater treatment plant **Delphin BF 20, R1**



- 1 20' ISO container 2 inlet 3 aeration
- 4 fixed-bed chamber 5 final settling chamber
- 6 sludge recirculation pumps 7 side-channel compressor for the aeration of the fixed bed

■ Purification efficiency

The **Delphin container wastewater treatment plant** is designed in accordance with DIN 4261 T2, DIN EN 12566 T3 or ATV A122, depending on the connection size. With an appropriate dimensioning of the air supply and recirculation, additional nitrification and denitrification of the wastewater is possible. The legally stipulated discharge values are met

Standard

$BOD_5^* \leq 25 \text{ mg/l}$ $CSB \leq 100 \text{ mg/l}$
Filtered substances $\leq 35 \text{ mg/l}$

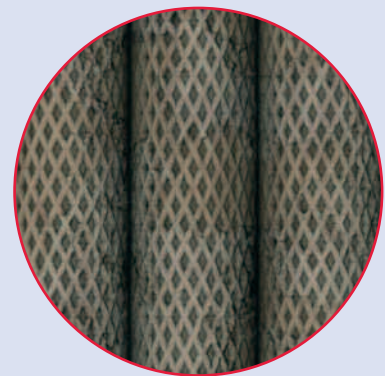
Nitrogen removal

$BOD_5^* \leq 15 \text{ mg/l}$ $COD \leq 75 \text{ mg/l}$ $NH_4\text{-N} \leq 10 \text{ mg/l}$
Filtered substances $\leq 25 \text{ mg/l}$

The operating values of the Delphin compact wastewater treatment plant clearly lie below the required limit values. The mean efficiency of the Delphin fixed-bed process, for example, is found to be 95.6 % for BOD_5 and 95.3% for $NH_4\text{-N}^{**}$.

*: membrane-filtered,

** : Measuring results obtained on a state-accredited test field



Fixed bed covered by bacteria