

## JadeWeserPort - The implementation of the „Seabin Project“

---

In order to be equipped for the ecological challenges associated with coastal development, JadeWeserPort is at the forefront of the movement alongside ports around the world. To protect the coastal ecosystems and revolutionize the role of the environmentalist, innovative technologies are needed. JadeWeserPort is committed to avoiding environmental pollution and operates according to the principle of sustainability in all its corporate divisions. In addition to the existing port catchment systems, the use of the Seabin Technology is intended to serve the professional disposal of marine debris. Creating an environmentally friendly port ultimately means creating a port with no negative impact on our environment. This in turn requires a rethink, characterised by radical innovation and new concepts.



Quelle: Seabin Project, 2019

Mistakenly, plastic is always regarded as a useful consumer product. However, it explicitly refers to the consequences of the growing amount of plastic waste. Pointing out this problem aims at an orientation of consciousness and places the issue of marine waste in a macroeconomic context. Sea debris presents itself as a cross-sectoral and complex cultural problem due to economic, ecological and social problems.

Intergenerational impacts make marine debris a global problem. Superficially, the tangible and mainly human-induced marine waste is a comparatively simple problem. However, the problem is extremely complex, with numerous underlying causes and factors influencing the amount, type and distribution of debris globally. Such complexity requires cooperative and collective efforts by a broad spectrum of the private sector, governments and civil society to cope with marine pollution.

Considering how to counteract the plastic waste problem, the "Seabin Project" proved to be the most economical and most marketable solution in direct comparison with other systems and concepts for the intention of cleaning the ports of plastic waste. The Seabin is an innovation in ocean cleaning technology that helps to create cleaner oceans with healthier marine life and contribute to a better way of life.



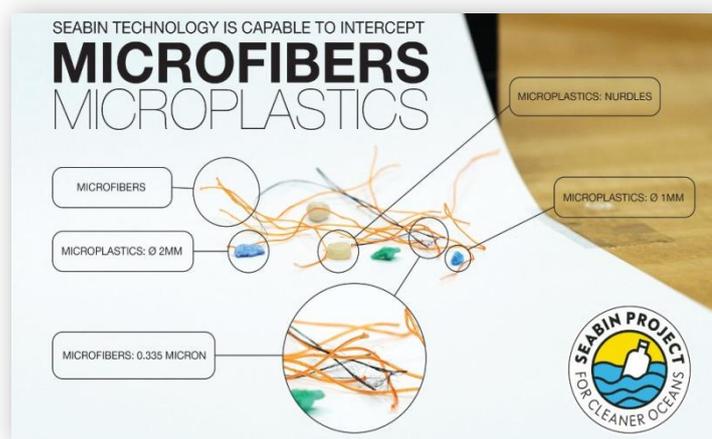
Quelle: Seabin Project, 2019

The floating sea debris separator, the Seabin, is used to combat plastic waste starting with ports, yacht clubs and marinas. The suction of water and the debris which it contains enables the interception of micro and macro plastics as well as micro fibres. In addition, this technology is designed to clean water which is contaminated by organic materials, such as algae, leaves, etc. The aim of the "Seabin Project" is to contribute to the conservation of the oceans and to the fight against plastic waste. The development of this project includes upstream solutions for more sustainable and cleaner ports, marinas, public waterways, rivers and ultimately oceans. Pollution of certain areas depends, among other things, on wind and currents. These factors push the floating debris directly into ports, yacht clubs and marinas. Thus, these relatively controllable locations provide an exemplary environment for Seabins to clean the oceans. These are areas where a 24-hour service is available, including maintenance and emptying. An increase in the rate of consumption and production of plastic is leading to the classification of marinas and ports as hot spots where there is a lack of waste management and plastic waste is discharged into the sea.

A vertical up and down movement, enabled by the installation on a floating dock, allows the Seabin to operate independently of the tidal range. Sucked in from the surface, the water flows through the internal collection bag. The mounted pump has a capacity of 25,000 litres per hour and is directly connected to a 110/220 V output. Depending on the current technology and geographical location, it can also be operated with the aid of solar, wave or wind power technology.

Equipped with oil separator cushions, the Seabin is able to accommodate the petroleum-based detergents and surface oils found in harbours around the world. Pumping the cleaned water back into the port and leaving the dirt and waste in the collection bag ensures a proper disposal. With a filling volume of 20kg, a regular, preferably daily inspection and emptying is required. However, monthly cleaning and inspection are minimum requirements. As mentioned above, the installation is carried out on a floating dock in the special "debris problem area". This strategic positioning makes it possible for the currents and the wind to push the debris directly into the Seabin.

Surface waters contain a considerable amount of microplastics. As the Seabin has the necessary technology, it is able to trap microplastic particles ranging in size from 2 to 5 millimeters. In addition to more efficient detection of macro- and microplastics, the modified collection bag also enables the removal of microfibers from the surface.



Quelle: Seabin Project, 2019

A Seabin unit is also suitable as a scientific instrument for monitoring microfibre concentrations. The separation of the microplastic particles and the associated multiplication of the microplastics in waters are prevented by the capture and removal of larger plastic particles in the micro range. The current ratio of micro/macro plastics to micro fibres of 5:1 ensures a minimal effect on microorganisms and their reproductive capabilities. However, estimates assume only a minimal occurrence of microorganisms in marinas. The advantages of this technology are the time and cost savings compared to standard methods as well as the possibility of more consistent data collection through uninterrupted use. Current global efforts to reduce marine pollution caused by microfibres and microplastics are combined with the activities of the "Seabin Project".



Quelle: Seabin Project, 2019

Sustainability can be achieved in many ways. The expansion of the project offers further design possibilities. The implementation of the "Seabin Project" at the JadeWeserPort serves not only a sustainable use, but also the creation of a uniform appearance, a joint cooperation internally and externally as well as a continuous participation in the topic of environment and sustainability. This is achieved in particular through public relations work. Marine waste, as such an elementary problem area of the economy, must be subject to consistent consideration in order to advance its disposal in a success-oriented manner. Understanding and being aware of this problem is the first step towards effective and sustainable solutions. Any waste that is improperly disposed of may end up in the sea or other waterways, and anyone who learns to dispose of waste properly may be one less "source" that encourages the input of waste. The proper disposal of waste is the responsibility of every company, person and society.