

Aquaculture

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Closed Systems

Certus & Ecomerden

Certus & Eco model R

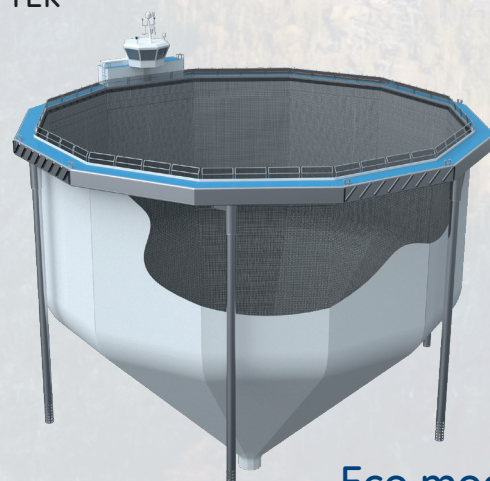
Semi Closed Cage Containment systems for Salmon & Trout production

Sustainable and cost-effective shielded production of
Postsmolt (100 g - 2 kg) - Full cycle (for harvest) - Broodstock fish

- No escapes
- No lice treatments
- Collection of sludge
- Optimal water exchange, continuous current, automatic addition of O₂, and protection against parasites and predators provide a safe cage environment for the fish
- Delivered in sizes from 10,000 m³ to 30,000 m³ production volume per unit
- Capacity to 400 tonnes to 1200 tonnes of biomass
- Product certified according to NS 9415 and NYTEK



Certus



Eco model R



Eco model S

Certus & Ecomerden are the market's two best-selling closed cage facilities
(20 plants delivered to Norway, Canada and the Faroe Islands)

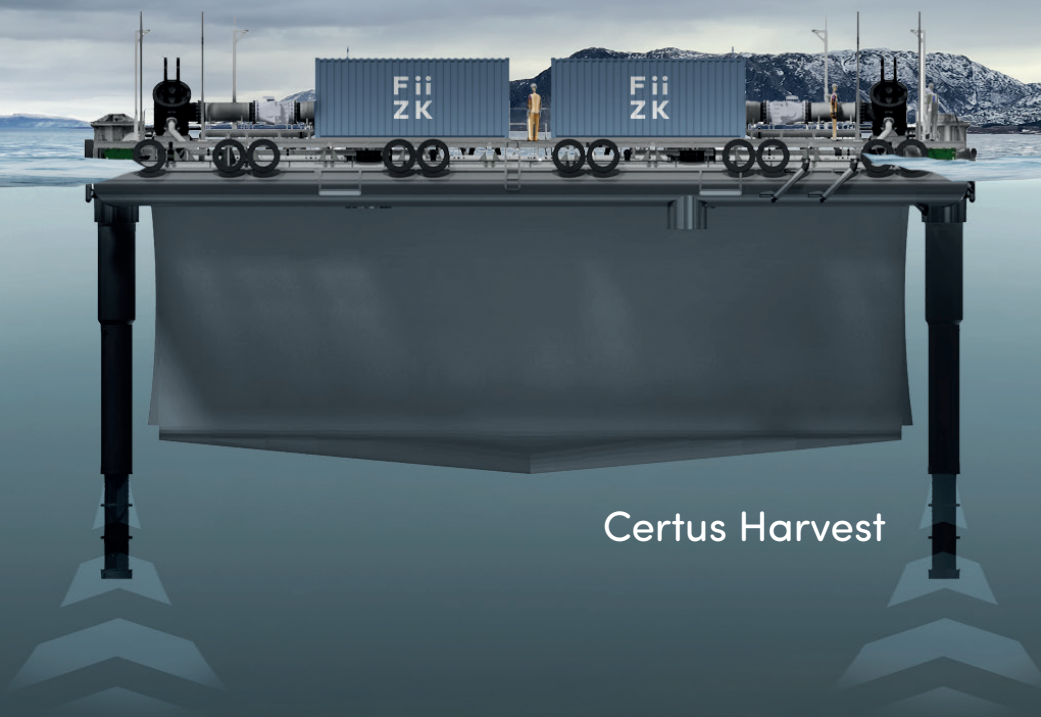
References: Cermaq, SinkabergHansen,
Osland Havbruk, Hiddenfjord, Firda Sjøfarmer and others.

Certus Harvest & Eco model S

Patented holding cage for harvest fish

Alternative to direct unloading from a wellboat pending processing
(Fish with lice, PD, ISA)

- Fully disinfected discharge water. Shields the external environment from the salmon in the cage
- Free up wellboat capacity, and reduce wellboat costs
- Large capacity – densities up to 90 kg/m³
- 750-900 tonnes of biomass
- Stable supply of fish into the processing plant
- Flexible production planning
- Avoids production bottlenecks due to missing wellboat deliveries
- Full control and monitoring of the cage environment



Certus Harvest

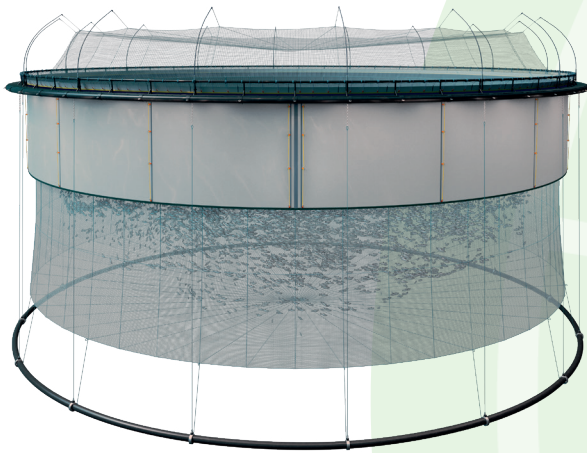
System description

- Floating collar in steel with platforms for placement of technical equipment.
- Powerful industrial tarpaulin that closes the production volume.
- Lice-free seawater is pumped in through independent seawater intakes.
- Water exits via outlet tubes at the base of the tarpaulin.
- Organic waste is captured in the sludge collector and pumped to the surface.
- Sensors continuously monitor water quality (O₂, pH, salinity, turbidity).
- Oxygen is added automatically.
- Control & steering systems enables automatic operation, monitoring of operational and component status, in addition to continuous monitoring of water quality. An alarm management system is fully operational in the event of any deviations from set parameter values.

Technical Textiles

With over 140 years of experience in industrial sewing and one of Northern Europe's most modern production facilities, we supply fish farming solutions that provide increased safety and growth. Various types of textiles are used to produce our closed cages, lice skirts, treatment tarpaulins, freshwater pools and photoperiod roof covers.

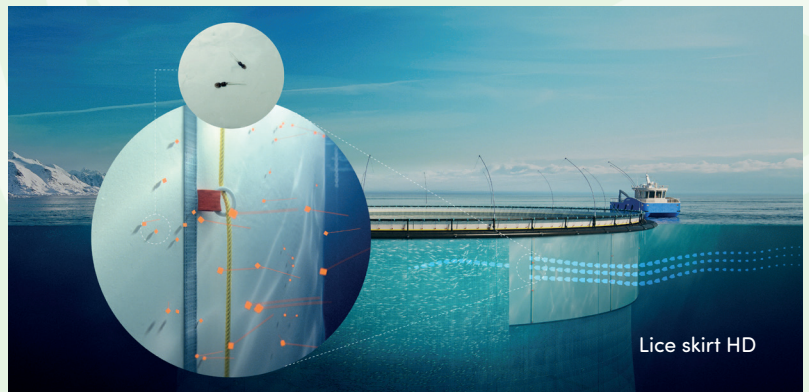
Lice skirts for sea lice management



Both scientific and commercial trials have shown that a physical barrier surrounding the open-net pen results in less sea lice infestations and can prolong the use of chemical and mechanical delousing. With our experience in the production of lice skirts, we work closely with new and existing customers in the development of lice skirt concept and design.

Lice skirt - HD

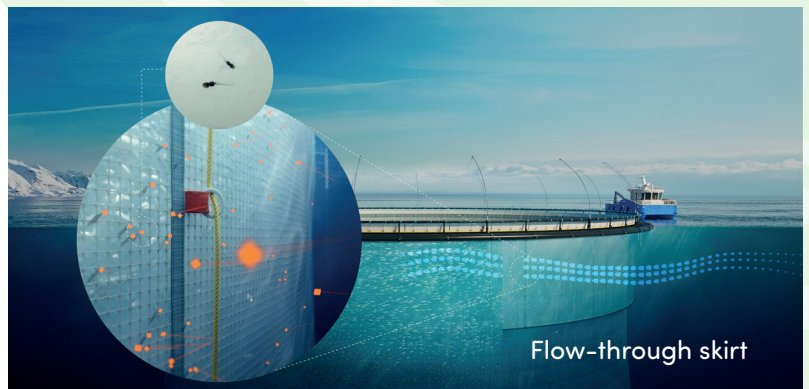
Lice skirt Heavy Duty (HD) uses an impermeable material and is designed for harsher environments. The product is a market leader and tested by our customers for several years with satisfactory results.



Lice skirt HD

Flow-through Lice skirt

Flow-through Lice skirts allow water exchange, particularly beneficial at sites experiencing low oxygen levels that can negatively affect fish growth and welfare. Seawater is allowed to pass through the mesh material, whilst keeping sea lice out.

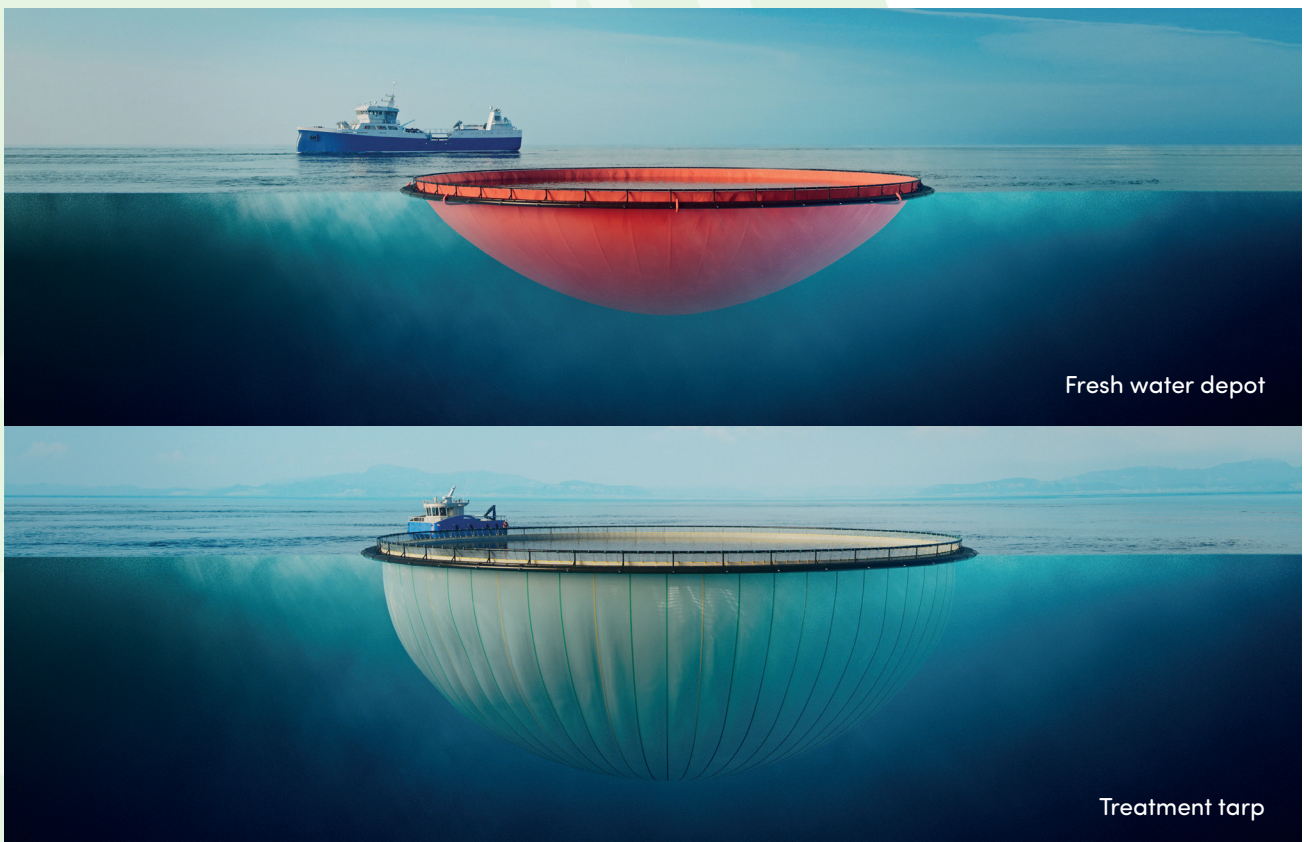


Flow-through skirt

Tarpaulins for sea lice and AGD management

Continuous access to fresh water is becoming more important not only for fish welfare but for reducing treatment costs. Having a freshwater depot strategically deployed saves a lot of wellboat time. A wellboat takes 1.5 hours to fill 1,800 m³ from a pool compared to 6–10 hours to fill directly from the freshwater source. We have optimised our design to offer a freshwater pool combining the best solutions from FiiZK and NWP to ensure the shape holds and for easy deployment. The depot is produced in sizes from 1,000 m³ to 10,000 m³ after assessing the customers' requirements at each location.

FiiZK's treatment tarpaulins are built to last and tailored to your treatment biomass to optimise treatment efficacy and economical benefits. FiiZK treatment tarps are made of polyamide fabric with a tensile strength of 3800 N/ 5cm. The weight of the fabric is 210 g/m². For most effective use the treatment tarp must be impermeable to the surrounding seawater and the use of coated polyamide fabric will guarantee the customer can rest assured that they have the best product on the market.



Fresh water depot

Treatment tarp

Tailored products

You can benefit from our expertise.

Our large team will provide you with knowledge and experience - ready to assess, design, draw and manufacture tarpaulin products for many purposes.

From protection and covers of equipment to roofs, tents and upholstered PVC. All of the raw materials we use is specially selected to accommodate technical requirements and environmental purposes.

Contact us to discuss your requirements and how we can help make things easier for you.

+44 (0) 7898 798 528 • info@fiizk.com • fiizk.com

Digital

Everything you need to be data driven!



FiiZK Digital has over 20 years of experience in developing and innovating digital solutions for the aquaculture industry. Our main goal is to provide our customers with an optimal decision basis for all aspects of their business and daily operations. We believe that a business must be data driven to maximize their full potential. We offer everything from registration of production data, planning your biological production, to a BI-reporting system that connects all your data to your fish.

FiiZK Omnia – BI done right

An end-to-end product that delivers seamless integration with all data sources, storage and intelligent compilation of data that sets it in context with your fish. A complete BI system with user management and sharing of interactive dashboards and reports with striking visualization in Power BI.

FiiZK CTRL – Next generation production control

Production control solution built on a modern platform that will be a natural first choice for a future oriented company that wants to take a step further in to digitization.

FiiZK Horizon – Planning and budgeting

Horizon consists of applications that cover biological and financial planning, plus a strong optimization tool. Almost 50% of the fish farming production in Norway is supported by the FiiZK Horizon portfolio.

FiiZK Analytics – From instinct to insight

FiiZK Digital has aquaculture-focussed senior consultants at your fingertips. In combination with our powerful software tools we can utilize all the data you have and give you a broad range of reports and production analysis. For example, we can make a customer specific experience based-growth model.

Membrane filtration systems

Especially adapted to aquaculture applications

Inlet water for land-based aquaculture

By combining 30 years of experience in membrane filtration with a team understanding the specific interactions between water quality and fish health, FiiZK is able to offer inlet water treatment systems suited for all kinds of land based fish farming. If you want fresh water for your system, we can either purify an available fresh water source or make fresh water from seawater.

If you want brackish water, we can adjust the salinity in seawater to fit your needs while at the same time remove the sulphate in the inlet water. For seawater inlets, we offer membrane solutions removing pathogens and particles in a highly effective way with a high focus on HSE in the process.

Lice & AGD treatments

The FiiZK systems for making customized water for delousing and AGD treatment have been proved to give highly effective treatments. Through thorough scientific tests the efficacy of the treatment as well as the welfare of the fish have been documented. The slightly brackish water has been proven to remove more than 93% of the lice in 4-6h treatments, as well as significantly reducing AGD infections.

At the same time, the ultrapure brackish water poses no risk to fish health by easing the osmotic change while being free of pathogens and metals that might cause harm. The FiiZK water production systems can be provided as portable, containerized units, thus making treatment water available wherever it is needed.



Water filtration membranes.



Contact us:

Fiizk Ltd.

Unit 1, Alpha Centre
Stirling University Innovation Park
Stirling FK9 4NF
Scotland UK



+44 (0) 7898 798 528 • info@fiizk.com • fiizk.com

We solve growth challenges!