

African catfish recirculation system

Design of a 50 ton African catfish recirculation system

General data

Price (including system, extra materials and self feeders and EX WORKS)	± € 76.000,-
Total system size:	22,3 x 4,5 meters
Installed power: 4,62 kW / module	2 pumps of 2,2 kw + 0,22 (UVC) =
Daily water usage:	around 14 m ³ per module
Daily average feed gift:	115 kg per module using 45% protein 12% fat diet
Average FCR	0,85

Materials

In this quotation a design is made for a 50 ton module. All tanks are constructed of Meranti plywood and are double laminated with polyester resin and fibers and topcoat. These tanks are very strong and longlasting. For all iron works stainless steel (quality 304) is used. The PVC used is either sewage class SN4 or pressure class 10 ATO.

Fishtanks

Each system has two rows of 5 tanks of around 5 m³ each. Each tank has one outflow pipe connecting to a central drain to the

sedimentation tank and one drain with valve for individual draining of each tank.

Sedimentation tanks

The system requires 2 sedimentation tanks of 8 m³ each. The tanks are filled with special polypropylene sedimentation material, with a specific surface area of 125 m²/m³, and a height of 60 cm. The sedimentation material rests on a stainless steel support. Each sedimentation tank has two overflows to the pump tank.

Pumptank

The two pump tanks have a volume of 6 m³ each. When one sedimentation tank is emptied and cleaned, the pipe from the fish tanks to the sedimentation tank can simply be opened. The sedimentation tank is filled and the pump tank acts as buffer tank.

The pump tank is equipped with UV-C devices connected to the four outflows of sedimentation tanks. The devices have a capacity of 55 Watts each. Next to this the water supply is connected to this tank using a floating ball valve. Any evaporating water and water needed to fill the sedimentation tank is supplied to the system automatically.

Pumps

For this system two SAER 2,2 kW pump is needed. The pump is connected to the pump tank. The water is pumped up to the biotower using PVC piping. On the biotower the pump outflow pipe is connected to 20 downsprayers. These sprayers provide even spreading of the water over the biotower. A spare pump is delivered with the system.

Biofilter, reception tank and stainless steel support

The biofilter is constructed of stainless steel bended and filled with Net biofiltration material (150 m²/m³). The total biotower is lined with PVC lining. A ventilating system is attached.

The reception tank of the biotower is constructed from polyester. From this reception tank two pipes return to the fish tanks.

The stainless steel support allows the biotower and reception tank to stand over the pumptank.

Extra materials needed for ongrowing system

- Waterquality test kits
- Nets
- Grading table for grading 150 gram fish
- Catching and transport box for catfish to be used on forklift truck
- Spare UVC light bulbs 55 Watt
- Brushes, aprons etc.

Self feeders

The fish can be fed using pendulum feeders. With these feeders the fish can be fed automatically.

General conditions

Warrenty

7 years on all tanks

1 year on workmanship

Partners

Durante Fish Industries, Ibadan, Nigeria
www.durantefish.com

Skretting, Boxmeer, The Netherlands
www.skretting.com

Til-Aqua, Velden, The Netherlands
www.til-aqua.com

PAL Anlagebau, Abtshagen, Germany
www.pal-anlagebau.de

Hendrix Misr, Cairo, Egypt