



VERTICAL PILE CLOTH FILTER

SMART FILTRATION,
MAXIMUM CAPACITY,
PURE PERFORMANCE



VFC – innovation in tertiary water treatment

IN-EKO TEAM s. r. o. has specialized in the production of wastewater treatment units since 1995. We have used all

of our knowledge and experience in filtration to enhance our filter portfolio. IN-EKO TEAM is the direct

producer of both principle devices: OUT-IN & IN-OUT.



Design and properties of the Vertical Pile Cloth filter

- To ensure the highest standards in waste water treatment technology we use quality and certified materials and components
- The filter cloth is available with mesh opening sizes ranging from **5 µm** equivalent (microfiber) **up to 10 µm with different options and dedicated compositions of PES/PES - PES/POLY free fiber fabrics**
- **100% submerged design** combined with increased filtration surface for higher capacities
- TSS removal, BOD and COD partial reduction, phosphorus reduction down to **0.1 mg/l**
- Larger disc diameter (**2.2 m**) than is common on the market = **larger filtration capacity**, while the equipment size remains the same as the competition.
- Standard external pumps – offering customers a wider selection of pumps, along with easier operation and maintenance.
- An excellent solution for micropollutant removal applications.
- **Direct drive** – chainless system
- The design of the shaft and its mounting provides and extraordinary long sealing life span
- Innovative design of the segment support brackets (the strongest and most durable in the industry)
- **Large capacity overflow system integrated into the stainless steel tank with a new drain design and a high performance hydraulic profile adaptable to the needs of the end customer.**

Size series

Thanks to the modularity of our vertical filters, we guarantee high adaptability to dimensional requirements and achieve the highest efficiency standards. To meet every application requirement, we can supply **from 2 to 6 discs** mounted on a vertical axis (VFC).

OUT → IN system

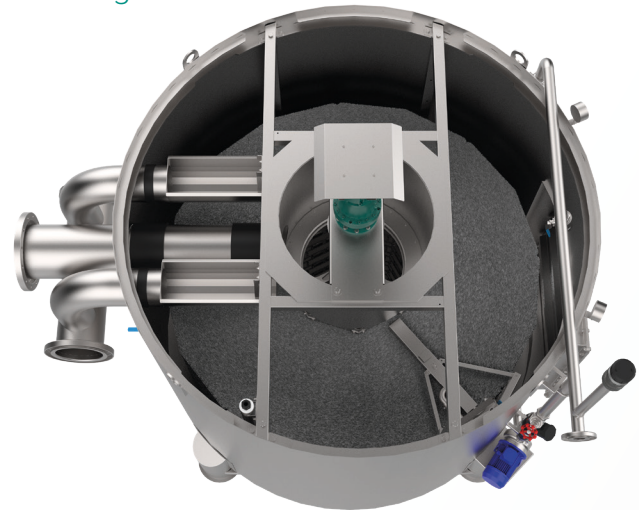
This type of filtration comes with 100% submerged filter. It utilizes a different type of filter cloth than that used on conventional filters with 65% submersion. The cleaning process involves **suction** instead of backwashing, so the impurities are caught from the outside in this case. Exceptional filtration results can be achieved by combining the VFC filter with **"CLEVER" Disc filters**. Equipment can be combined according to customer requirements.

How does it work?

The untreated water including its impurities flows into the tank where the Pile Cloth filter discs are vertically mounted. Discs consist of individual filter segments covered with pile cloth. The entire system is 100% submerged. Water passes through the filter cloth,

and all impurities are captured on its surface. As the impurities get caught on the filter cloth, the flow rate decreases and the water level in the tank gradually rises. When the water level probe is activated, the filter discs start to rotate, and the cleaning

cycle is initiated via suction. As the water level decreases to the pre-set minimum water level, the wash cycle ends, and the filtration cycle repeats. **Filtration goes on continually without interruption.**



Advantages of the Vertical Pile Cloth filter

- **Our modular filter is designed as a system capable of adapting and coupling to different WWTP needs**
- Continuous filtration even during the backwash (filter cloth regeneration)
- **Backwash suction pumps can be installed either outside or inside the stainless-steel tank (customizable)**
- Large filtration capacity on a small footprint – more compact version compared to the FCI “ORSO”
- Easy and safe inspection and fast access for maintenance activities
- Cheaper transportation due to smaller dimensions and low equipment height
- Lower energy consumption during cloth cleaning
- Low operational costs
- Possibility of sedimentation in the filter tank
- **Customizable hydraulic profile**
- Exceptionally low noise pollution
- No aerosol pollution during the cloth cleaning cycle
- **A filter with a 2.2 m disc diameter has 1 sqm more filtration area per disc than is usual on the market**
- Long filter cloth lifespan without the risk of tearing

Applications

- Treatment of effluent water
- Pre-treatment before UV
- Pre-treatment of potable water
- Fish farms and Koi ponds
- Pulp and Paper industry
- Cooling water in various industries
- Inlet process water
- Food processing
- Recovery of valuable materials in various industrial sectors

✓ The right choice

For the right filter size it is necessary to take into consideration the maximum influent hydraulic flow (Q_{max}), the expected loading and particle size of suspended solids (TSS), and then mesh size in combination with surface loading to achieve the best effluent water quality.

Optimal operation of multiple filters can be managed using a PLC or another control

system. The Vertical Pile Cloth filter is delivered in a version with a steel tank. We also offer

various optional accessories, such as covers and remote monitoring.

+ Benefits for customers

- Higher effluent water quality
- **Resistant to shock loads of Q_{max} and TSS**
- Suitable solution for small and medium applications
- Exceptionally low power consumption
- Gravity flow saves energy costs
- Excellent solution for industrial applications
- **Filters can be adjusted to suit customer's needs/projects**
- Possibility of combination with **IN-OUT Disc filters at two-stage filtration systems**
- Low maintenance costs
- The filter can be put into operation immediately after its installation
- Individual VFC models can be installed in parallel to achieve various capacities

For more information on our Vertical Pile Cloth filters, "ORSO" Pile Cloth filters, "CLEVER" Disc filters, and other equipment for pre-treatment, flotation, phosphorus reduction, and microfiltration of wastewater can be found at www.in-eko.com.

You can contact us by phone, email or in person.



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