



Product Overview



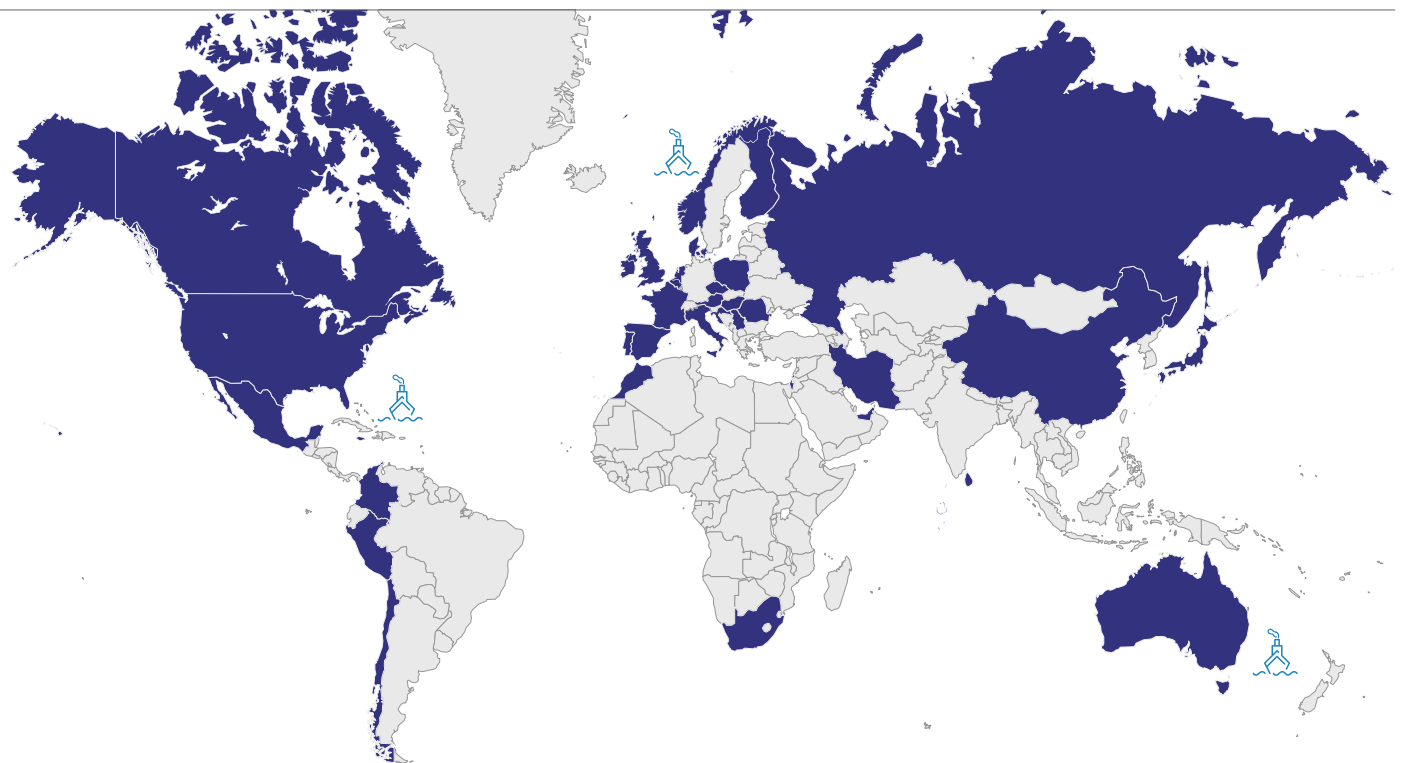
Eco-efficient **solids separation**

ABOUT SALSNES FILTER

Over 25 years ago, we designed the first rotating belt filter to provide customers with a highly efficient and reliable technology that could maximize solids separation and decrease costs. Today, we continue to lead the development of this technology from our office and manufacturing facilities in Namsos, Norway. We are a brand in the Trojan Technologies group of businesses, located in Ontario, Canada.

SALSNES FILTER SYSTEMS AROUND THE WORLD

We have installed over 900 filters around the world, giving us a global footprint in municipal and industrial markets. Our customers use the Salsnes Filter system in municipal wastewater treatment plants, and for a host of industrial applications such as tanneries, cruise ships, aquaculture, biofuel production, pulp & paper and food & beverage.



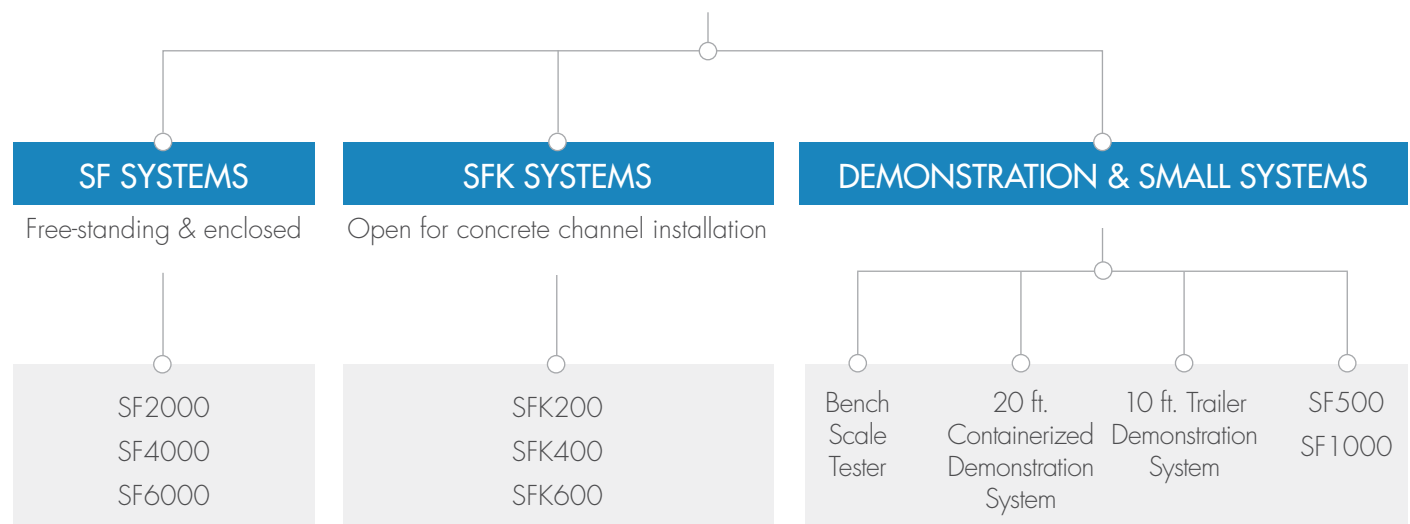
AN ALTERNATIVE TO CONVENTIONAL PRIMARY TREATMENT

A Salsnes Filter system can completely replace conventional primary solids separation. Or, it can augment existing primary treatment to improve plant performance and reduce overall costs.

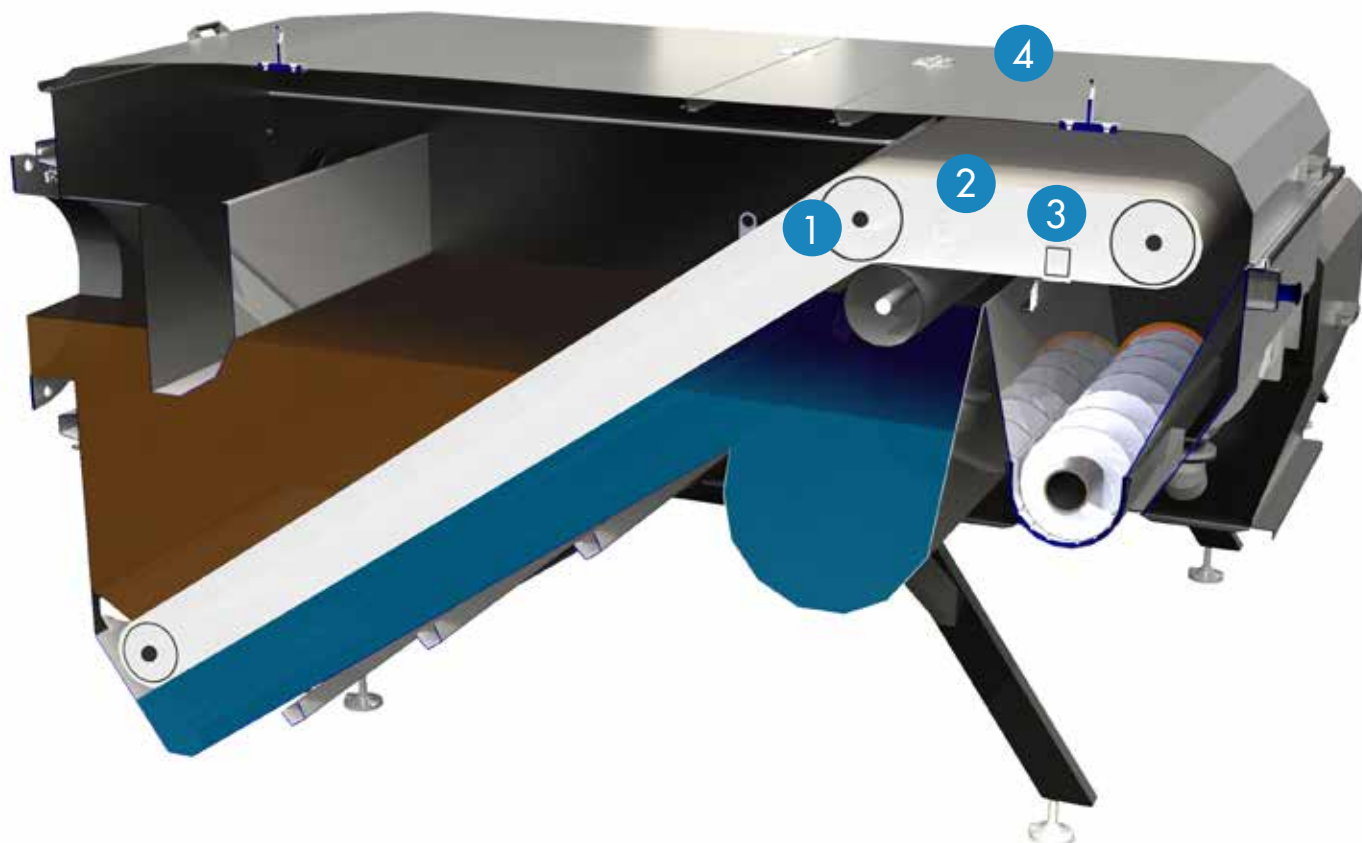
Compared to conventional systems, a Salsnes Filter system can offer:

- 30-60% lower investment costs
- 1/10th the land requirements
- Integrated thickening and optional dewatering
- Significantly lower lifecycle costs
- Smaller volume of drier sludge that reduces disposal costs
- Less civil works
- Fully automated equipment
- Optimal removal of TSS to ease demand on downstream biological treatment
 - 30-60% removal in a typical municipal installation
 - up to 80% removal when a polymer is used
- Higher Volatile Solids content in primary sludge for biogas production
- Fast and easy maintenance
- Lower operating costs

OUR PRODUCTS



SF & SFK PRODUCT COMPONENTS



1 Filtermesh & Cogwheel

The filtermesh is made of polyethylene and is very durable. The way it's mounted and tensioned to the cogwheel is patented - it improves performance and allows the filter to handle higher flow rates and solids loadings, increasing treatment capacity in a smaller footprint.

2 Hot or Cold Water Flush

A hot water or cold water high pressure flush is available to those facilities that have a high concentration of fat, oil and grease (FOG) in their wastewater. Operating only two – four times daily, this flush effectively cleans the hard- to-remove FOG from filtermesh openings.

3 Air Knife

The Air Knife filtermesh cleaning system starts automatically when the mesh begins to rotate. It uses compressed air to clean, which has many benefits compared to scrapers, brushes or water-based cleaning systems. Air is gentler on the mesh (to elongate its life) and on particles (so they don't break into smaller pieces). Air cleaning also keeps sludge drier for more effective dewatering.

4 Access Hatch

Enables quick visual inspections of performance and internal components.



Integrated Dewatering

To save space and money, the enclosed SF systems contain an optional integrated dewatering process. Sludge drops into the collection area from the thickening process at 3 – 8 % DM and is conveyed across the unit by an auger. It can then be fed to a sludge stabilization process (e.g. direct digester feed); Or processed further through the dewatering unit to produce sludge that is 20 – 30% DM (without the need for any additional dewatering equipment).



Control Power Panel (CPP)

The CPP houses a Programmable Logic Controller (PLC) that makes this a completely automated system, ideal for remote or unstaffed facilities. A water pressure sensor tells the unit when to rotate the filtermesh (and at what speed), while the PLC simultaneously starts the Air Knife and sludge screw press.



Quick Connects

You will find only quick connects on the system for fast and easy maintenance.



External Dewatering

Common Dewatering:

For larger installations, this unit is available to dewater sludge from multiple filters. It can apply a higher pressure to produce even drier sludge (20 – 40% DM typical).



Vacuum System:

Ideal for sludge that is harder to dewater, our vacuum system can be installed to produce sludge as dry as 30% DM before the integrated dewatering auger.



SF SYSTEMS

salsnes

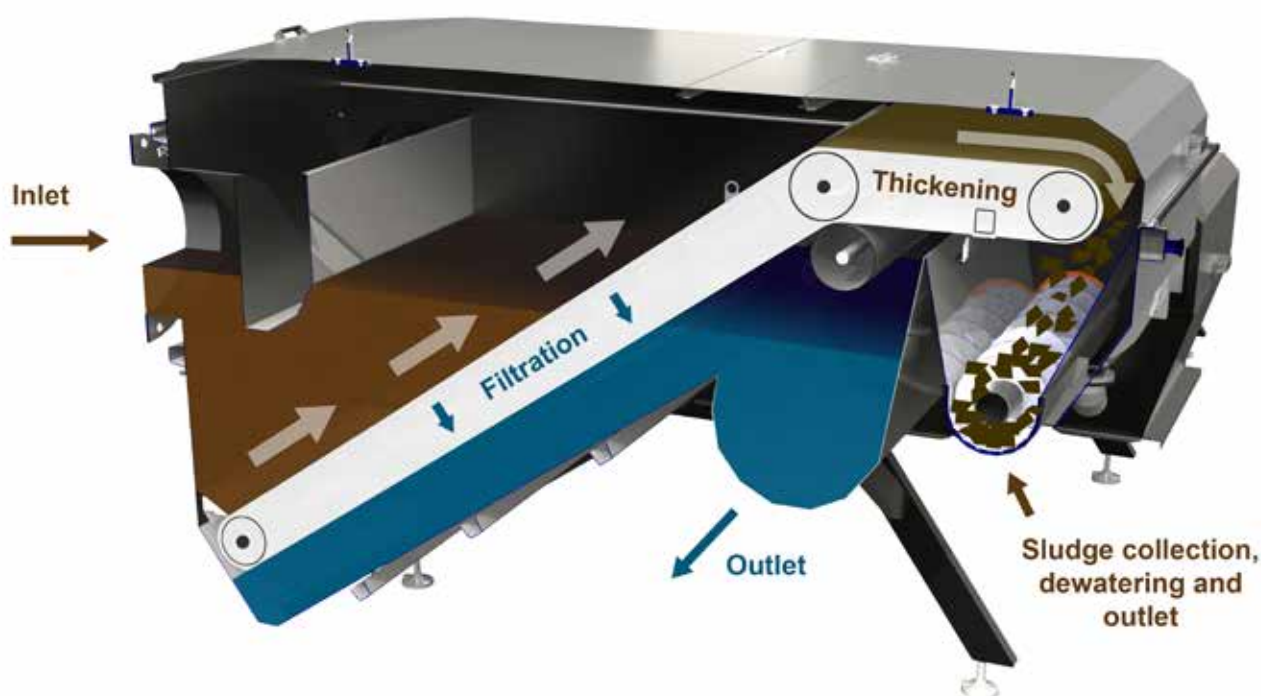
SF:6000

Free-standing and enclosed systems for municipal and industrial applications.

SF2000, SF4000, SF6000

Solids Separation with Integrated Sludge Thickening and Dewatering

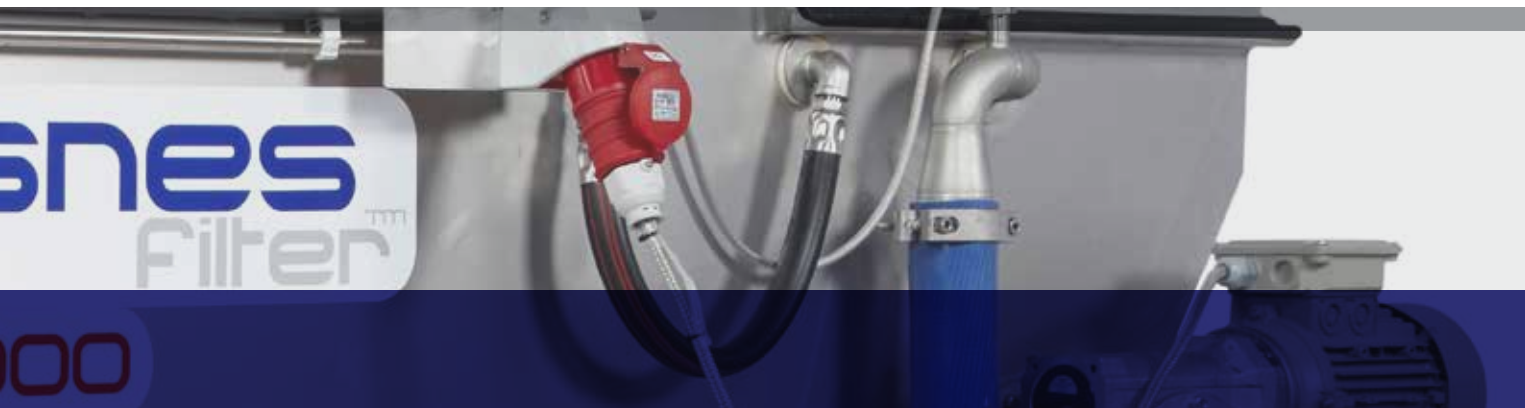
In SF systems, wastewater enters the inlet and is distributed (to prevent particle breakage) onto the filtermesh for solids separation. The filtermesh rotates like a conveyor belt, transporting sludge and enabling the thickening process. Sludge then drops into a collection area and goes through a dewatering unit (optional) before it exits the system.



Modular, Flexible Design

The modular design of the Salsnes Filter system allows for installation configurations to serve practically any capacity requirement. Single or multiple filters can be easily installed in new or existing facilities thanks to flexible design options.





SF2000/4000/6000

Bedford, United Kingdom

2,365 m³/h (15 MGD)



Specifications	SF2000	SF4000	SF6000
Maximum Hydraulic Flow	144 m ³ /h (0.9 MGD)	288 m ³ /h (1.8 MGD)	576 m ³ /h (3.7 MGD)
Average Treated Flow	90 m ³ /h (0.6 MGD)	160 m ³ /h (1 MGD)	325 m ³ /h (2 MGD)
TSS Removal Efficiency	30 – 80% (design dependant)		
Sludge Dry Content After Thickening	3 - 8 %		
Sludge Dry Content After Integrated Dewatering	20 -30 %		
Typical Operating Power Consumption	1.8 - 3.6 kW	2.1 - 4.5 kW	2.8 - 5.5 kW
Dimensions (L x W x H)	2.0 x 1.7 x 1.3 m (7 x 5.5 x 4.5')	2.5 x 2.0 x 1.6 m (8 x 6.5 x 5.2')	2.8 x 2.5 x 1.8 m (9 x 8.1 x 6')
Filtermesh Sizes	850, 500, 350, 250 micron		

SFK SYSTEMS

Systems for concrete channel installation in municipal and industrial markets.

SFK200, SFK400, SFK600

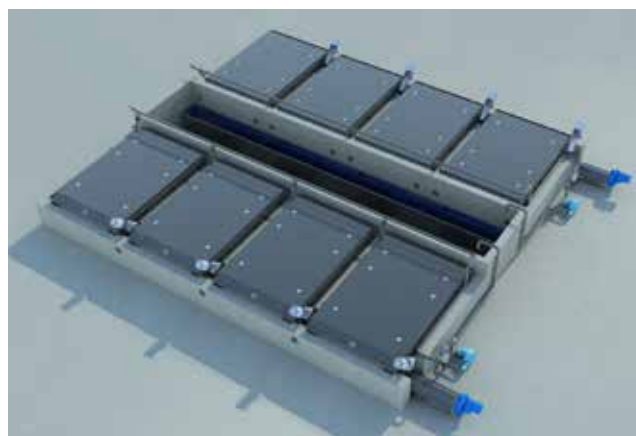
Solids Separation, Sludge Thickening and Dewatering

In SFK systems, wastewater flows through the channel and meets the filtermesh, where solids are separated. The filtermesh rotates, transporting sludge above the channel's water level to the thickening stage. Thickened sludge is then dropped into a collection area when it can optionally go through a dewatering process before it exits the system.

Modular, Flexible Design

SFK Systems can be easily retrofitted into the channels at existing facilities. A group of filters can form a module which allows for a variety of installation configurations that service practically any capacity requirement.

One Module



Eight SFK600 Salsnes Filters treating 2000 m³/h (12.6 MGD) at the Egå Wastewater Treatment Plant in Aarhus, Denmark.

SFK Type	Number of Units	Typical hydraulic capacity (L/s) for 50 - 60% TSS removal	Typical hydraulic capacity (L/s) for 40% TSS removal	Net footprint in m ² incl. channels and sludge tanks	Energy consumption (kWh) at 40% TSS removal
Module 4	1	200	400	30	17
Module 6	1	300	600	40	25
Module 8	1	400	800	60	34
Module 10	1	600	1200	80	42
Module 12	1	800	1600	100	51
Module 12	2	1600	3200	230	102
Module 12	4	3200	6400	460	204

SFK modules and change in treatment plant capacities



SFK200/400/600

Salmar, Follafoss, Norway

2,850 m³/h (18 MGD)



Specifications	SFK200	SFK400	SFK600
Maximum Hydraulic Flow	144 m ³ /h (0.9 MGD)	288 m ³ /h (1.8 MGD)	576 m ³ /h (3.7 MGD)
Average Treated Flow	90 m ³ /h (0.6 MGD)	160 m ³ /h (1 MGD)	325 m ³ /h (2 MGD)
TSS Removal Efficiency	30 – 80% (design dependant)		
Sludge Dry Content After Thickening	3 - 8 %		
Sludge Dry Matter After Common Dewatering Unit	20 - 40 %		
Typical Operating Power Consumption	1.3 - 3.1 kW	1.6 - 4.0 kW	2.3 - 5.0 kW
Dimensions (L x W x H)	2.4 x 1 x 1.2 m (8 x 3.3 x 4.2')	3 x 1.3 x 1.3 m (9.6 x 4.3 x 4.5')	3 x 1.8 x 1.4 m (9.6 x 5.9 x 4.7')
Filtermesh Sizes	350, 250, 150, 100, 40 micron		

DEMONSTRATION & SMALL SYSTEMS

Bench Scale Tester

A simple and quick way to characterize your wastewater and show the efficacy of solids removal using various-sized filtermesh.

The Bench Scale Tester is easy to transport and can be mounted on a regular water testing work bench. Filtermesh ranging from 11 to 840 microns can be tested.

Total suspended solids are measured before and after the wastewater is put through the Tester. Charting this information in the provided Excel template will show the particle size distribution of your wastewater, and how each filtermesh performed. This data helps determine which system would be best suited in a demonstration or full-scale installation.

The Bench Scale Tester comes with:

- Collection of standard meshes
- Excel template for calculations
- Procedure to execute the testing

Bench Scale Tester





SF500 & SF1000

The SF500 and SF1000 are small-scale systems, but boast many of the same features as the SF systems used for larger applications. Our patented Air Knife filtermesh cleaning system, automated sampling, water level sensors and flow distribution in the inlet, are all incorporated. The SF1000 has integrated sludge thickening and dewatering processes.

SF500

For pilot and lab-scale testing



SF1000

For small-scale municipal and industrial applications and demonstration systems



Specifications	SF500
Maximum Hydraulic Flow	5.4 m ³ /h (24 gpm)
TSS Removal Efficiency	>70%
Dimensions (L x W x H)	1 x 0.75 x 0.55 m (3.3 x 2.5 x 1.8')
Hot water connection	½" NPT
Cold water connection	½" NPT
Filtermesh Sizes	350, 250, 158, 90, 40 micron

Specifications	SF1000
Maximum Hydraulic Flow	54 m ³ /h (0.3 MGD)
Average Treated Flow	35 m ³ /h (0.2 MGD)
TSS Removal Efficiency	30 - 80% (design dependant)
Sludge Dry Content After Thickening	3 - 8 %
Sludge Dry Content After Integrated Dewatering	20 -30 %
Typical Operating Power Consumption	1.4 - 2.8 kW
Dimensions (L x W x H)	1.5 X 1.3 X 1.5 m (5 x 4.4 x 4.9')
Filtermesh Sizes	500, 350, 250, 158, 90, 40 micron

DEMONSTRATION & SMALL SYSTEMS

Containerized and Trailer Demonstration Systems

The next step after bench scale testing. State-of-the art wastewater testing equipment collects data about the performance of the Salsnes Filter system with your specific wastewater.

Demonstration System Features

Our demonstration systems house either a SF500 or SF1000 unit integrated with optional polymer station, coagulation & flocculation tanks and a screw conveyor for the transportation of sludge. External requirements are simple; 3 phase electricity and connections to fresh and wastewater.

The polymer station can use emulsion polymers and is diluted online with freshwater before injection into the flocculation basin. A static mixer is in place for rapid mixing of polymers.

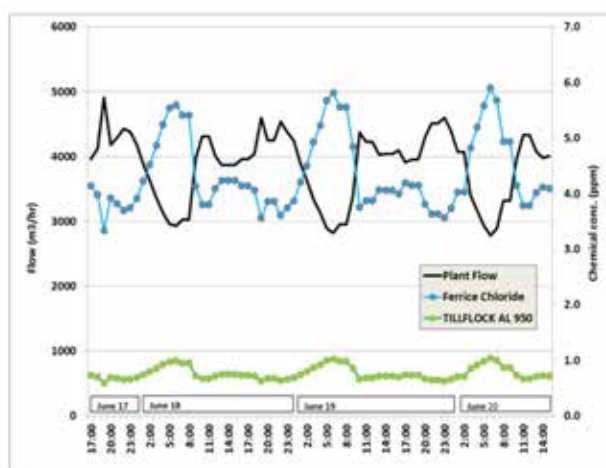
Wastewater Testing Equipment

The latest testing equipment is used in the systems including jar testers, Hach testing equipment, electronic balance and TSS filtration units. A 24-hour composite sampler with built-in refrigerator is also on board. The systems have several control panels, which are used for the collection and storage of data as well as the automatic operation of the system.

At the influent chamber, there are several online sensors (pH, TSS, temperature, turbidity) for automatic readings and for coagulant and polymer dosing.



Control panels automatically operate the systems and also store data collected from the demonstration.



10 Foot Trailer Demonstration System



Can be easily transported with a standard 4-wheel drive car or a truck.



20 Foot Containerized Demonstration System



Designed into a standard shipping container for easy transportation.



SPECIFICATIONS

Model	SF1000	SF2000	SF4000	SF6000
Style	Enclosed, free-standing			
Material of Construction	316L Stainless Steel			
Weight (Dry)	480 kg (1,058 lbs)	530 kg (1,168 lbs)	890 kg (1,962 lbs)	1,230 kg (2,711 lbs)
Standard Electrical Voltages	480/277V 3 ph, 3 wire + gnd, 60 Hz 400/230V 3 ph, 3 wire + gnd, 50 Hz			
Typical Operating Power Consumption	1.4 - 2.8 kW	1.8 - 3.6 kW	2.1 - 4.5 kW	2.8 - 5.5 kW
Accreditations (Electrical)	CE, UL, UL approved for Class 1 Div1			
Performance				
Maximum Hydraulic Flow	54 m³/h (0.3 MGD)	144 m³/h (0.9 MGD)	288 m³/h (1.8 MGD)	576 m³/h (3.7 MGD)
Treated Flow (Municipal Wastewater)	35 m³/h (0.2 MGD)	90 m³/h (0.6 MGD)	160 m³/h (1.0 MGD)	325 m³/h (2 MGD)
Maximum Head Loss	440 mm (17")	300 mm (12")	330 mm (13")	350 mm (14")
TSS Removal Efficiency	30 - 80% (design dependent)			
BOD Removal Efficiency	15 - 40% (design dependent)			
Sludge Dry Matter After Thickening	3 – 8%			
Sludge Dry Matter After Integrated Dewatering Unit	20 – 30%			
Dimensions				
Length x Width x Height (complete unit)	1.5 x 1.3 x 1.5 m (5 x 4.4 x 4.9')	2 x 1.7 x 1.3 m (7 x 5.5 x 4.5')	2.5 x 2.0 x 1.6 m (8 x 6.5 x 5.2')	2.8 x 2.5 x 1.8 m (9 x 8.1 x 6')
Inlet Diameter (pumped/gravity)	100 mm DIN (4" ANSI)	150/200 mm DIN (6" / 8" ANSI)	200/350 mm DIN (8" / 14" ANSI)	250/400 mm DIN (10" / 16" ANSI)
Outlet Diameter	150 mm DIN (6" ANSI)	250 mm DIN (10" ANSI)	350 mm DIN (14" ANSI)	400 mm DIN (16" ANSI)
Overflow Diameter	Combined with outlet			
Bottom Drain Diameter	N/A	100 mm DIN (4" ANSI)		
Water Connection	13 mm BSP (½" NPT)			19 mm BSP (¾" NPT) ½" NPT for UL Div1

Model	SFK200	SFK400	SFK600
Style	Concrete open channel (by others)		
Material of Frame	316L Stainless Steel		
Weight	510 kg (1,124 lbs)	630 kg (1,389 lbs)	745 kg (1,642 lbs)
Standard Electrical Voltages	480/277V 3 ph, 3 wire + gnd, 60 Hz 400/230V 3 ph, 3 wire + gnd, 50 Hz		
Typical Operating Power Consumption	1.3 - 3.1 kW	1.6 - 4.0 kW	2.3 - 5.0 kW
Accreditations (Electrical)	CE, UL, UL approved for Class 1 Div1		
Performance			
Maximum Hydraulic Flow	144 m ³ /h (0.9 MGD)	288 m ³ /h (1.8 MGD)	576 m ³ /h (3.7 MGD)
Treated Flow (Municipal Wastewater)	90 m ³ /h (0.6 MGD)	160 m ³ /h (1.0 MGD)	325 m ³ /h (2 MGD)
Head Loss	400 mm (16")		
TSS Removal Efficiency	30 - 80% (design dependent)		
BOD Removal Efficiency	15 - 40% (design dependent)		
Sludge Dry Matter after Thickening	3 - 8%		
Sludge Dry Matter After Common Dewatering Unit	20 - 40%		
Dimensions			
Length x Width x Height (frame)	2.4 x 1 x 1.2 m (8 x 3.3 x 4.2')	3 x 1.3 x 1.3 m (9.6 x 4.3 x 4.5')	3 x 1.8 x 1.4 m (9.6 x 5.9 x 4.7')
Overflow	Arranged in channel wall		
Water Connection	13 mm BSP (½" NPT)		19 mm BSP (¾" NPT) ½" NPT for UL Div1

