

SOFI FILTRATION

Innovation in Industrial Liquid Filtration



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FILTRATION

Sofi Filtration in Brief

- Based in Espoo, Finland
- Focus on industrial water filtration equipment development, production and marketing
- Personnel background in processing industry
- Know-how on whole dewatering process
- Main product **Sofi Filter** – a high capacity polishing filter
- Innovation development fund (TEKES) granted for 2011-2013
- Sofi Filter combines innovation, industrial filtration know-how and CFD-optimization
- Member of Center of Separation Technology (CST) and Cleantech Finland



Pertti Rantala (M.Sc.)
VP, Technology

*Key designer of Sofi Filter
with 30-year track record in
filtration industry;*

- Larox (-80's)
- Outokumpu Mintec
(now Outotec) (-90's)
- Helsinki University of
Technology (-00's)
- Sofi Filtration (2011->)

Need

Problem

- Large water streams (10 - 1000 m³/h) with fine particle (<100 µm) contaminations need to be treated
- Difficult to handle with traditional methods like settling

Macroeconomic drivers

- Tightening environmental regulations
- Water cost and scarcity

Sofi patented technology for water recirculation

- Less fresh water intake
- Less environmental impact
- Pure water in process
- No valuables to waste



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Sofi Filter – Industrial Microfiltration

- Self-cleaning filter from 0.2 μm
- Combines in one solution:
 - Cross-flow & Automatic Clean-in-Place
 - Economic design (no moving parts inside)
 - Low energy consumption and pressure loss
 - High filtrate flux [$\text{m}^3/\text{m}^2\text{h}$]
- Modular structure to combine units for high flowrates

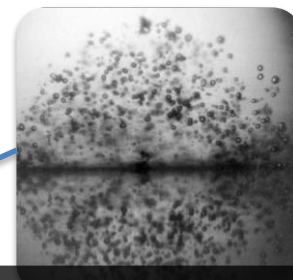
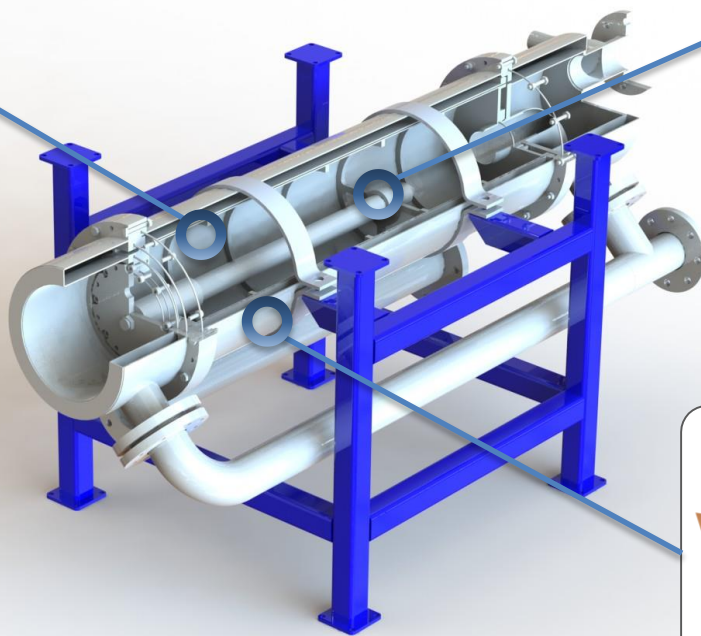


Key Features



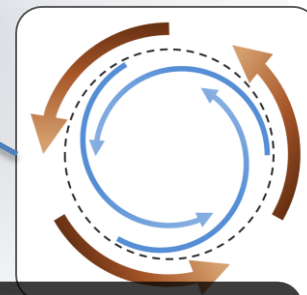
Long-life element

- 0,2...20 μm
- Stainless steel
- No disposable filters



Self-cleaning

- Ultrasonic resonator
- Backpulse with filtrate
- No chemicals needed



High cross-flow design

- Anti-fouling
- High capacity
- Low energy consumption

Specifications

	SOFI FILTER SYSTEM SPECIFICATIONS		
Unit	SF200	SF1000	SF8000
Capacity [m ³ /h]	0.5-5	5-35	40-280
[gpm]	2.2-22	22-154	176-1233
Separation size [μm]	0.2-20		
Method	Patented high cross-flow filtration		
Self-cleaning features	Backpulse & Ultrasonic		
Feed pressure	0.5-1.5 Bar (50-150 kPa)		
Temperature max.	85°C (185°F)		
pH range	1-12 (AISI 316L stainless steel)		
Weight (approx.)	40 kg (88 lbs)	200 kg (440 lbs)	1600 kg (3530 lbs)
Measures (approx.) [cm]	50x50x100	100x200x100	200x400x200
[inch]	19.7x19.7x39.4	39.4x78.7x39.4	78.7x157.5x78.7

Cases

Case	Ferrochrome refining	Nickel refining	Zinc electrolysis	Copper electrolysis
Application	Zinc removal	Belt filter permeate	Gypsum removal	Bi, Sb removal
Need	Less waste	Ni recovery	Energy saving	Product quality
Feed solids [mg/l]	7	1000	600	1
Flux [m3/m2h]	19.9	7.3	14.3	28.4
Element [μm]	1 (0,5)	10	10	1
Reduction [%]	50 (94)	60	98	12



Why Sofi Filter ?

- Physical self-cleaning features
 - No chemicals required
 - No bag/cartridge filter change cost
 - No manual labour for change
- Automatic
 - Remote monitoring & control
- Low energy consumption
- Small footprint



Thank You!

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