2018

SGF, FF - FILTER

WATERTEC

WATERTEC Profile

I. 30 years accumulated Know-How for Water treatment technology using fiber filter material technology.
II. Advanced Differentiated technology
III. Lowest operating cost and optimal efficiency

- Est. Aug/2013
- CEO & Founder: Kim, Gun-Soo
- Location: Busan-Kimhae City
- Main Product : Fiber Filter system for WTP & WWTP.
- Clients : Korea WWTP, Nuclear Power Plant
- Turnover : US$3.2mil / 2017
- Employees: Total:18 (R&D:6, Engineer:8, Sales: 4)

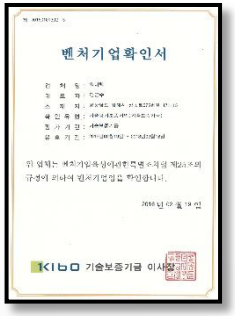
01 WATERTEC Certificate

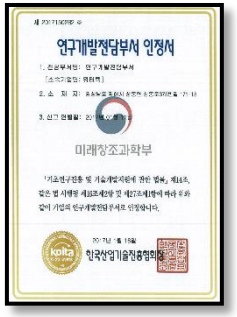
Quality Certificate

Venture company CERTIFIED IN 2016

R & D Team CERTIFIED IN 2017

Public Procurement Service CERTIFIED IN 2017





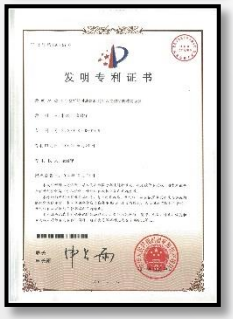
Patent

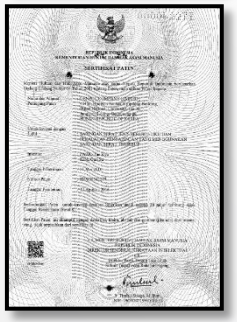
PATENT : Enrollment 7, Application : 2

China Enrollment 1

Indonesia Enrollment 1

DESIGN : Application 1





02 | Necessity of "SGF, FF" Fiber Filtration

PROBLEM

- Sedimentation sewage treatment
- Large Area.
- Requires long processing time
- Chemical method
- High OPEX, CAPEX

ASSIGNMENT

- Cost reduction + Quality Guarantee→ Applying Fiber filter media
- Maintenance+Low OPEX → Simple structure, simplified operation
- Removal rate→ SS 90%, BOD 52% removal

SOLUTION

Fiber media
+
Simplified operating mechanism
+
Low Maintenance
+
Simplify replacement

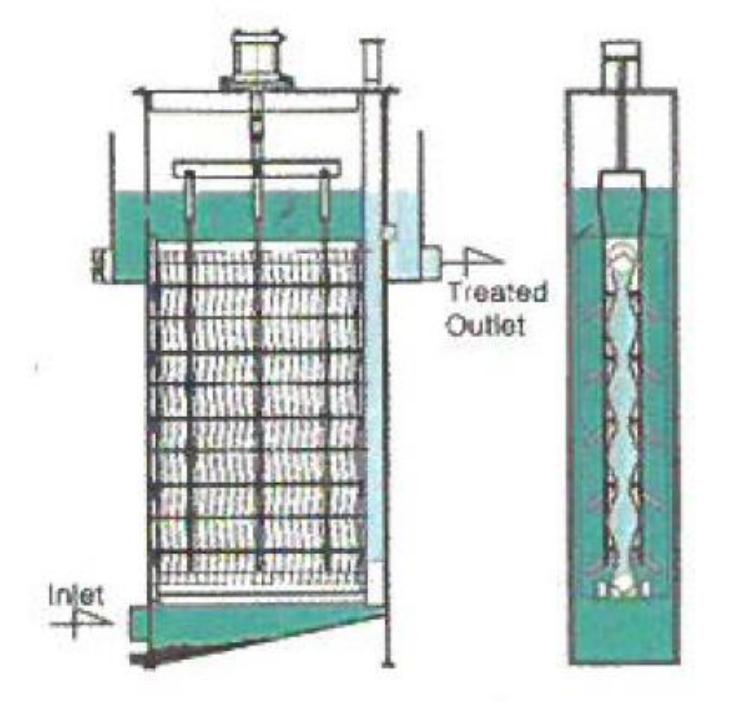
SGF Filter
(Zigzag gravity fiber filtration)
FF Filter
(Inertial pressure fiber filtration)

4 BIG ADVANTAGES OF "SGF & FF" FILTRATION

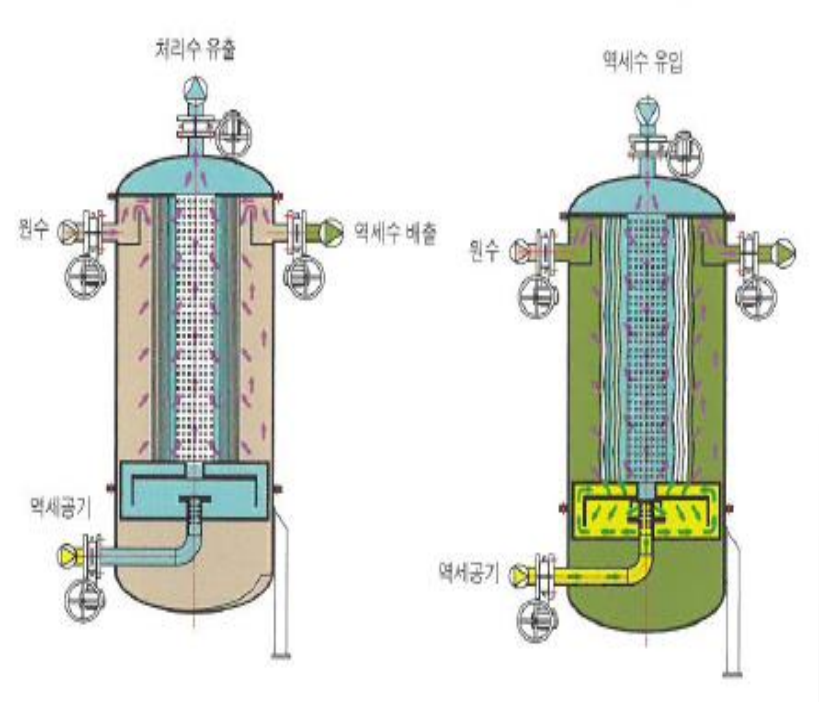
- Competitive Price
- Low OPEX
- Real-time control possible
- Standardization of product quality & Simplify Replacement

WATERTEC 워터텍

SGF Filter
(Zigzag gravity fiber filtration)

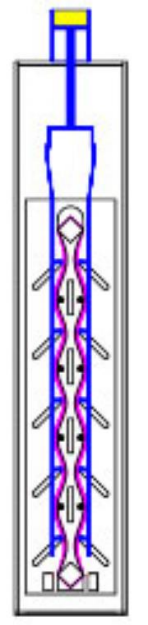


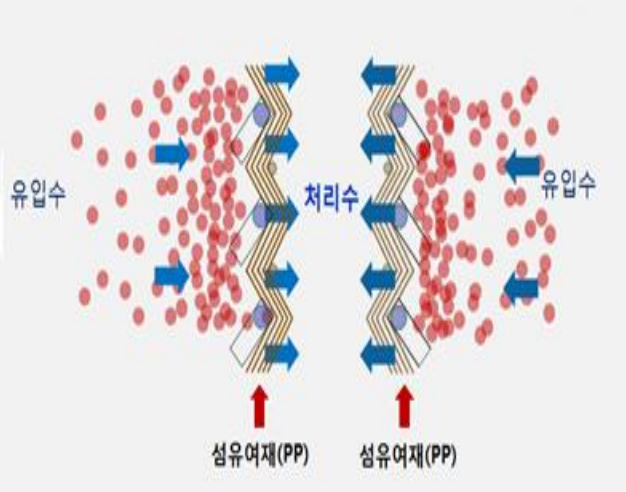
FF Filter
(Flots pressure fiber filtration)



SGF(S type Gravity Fiber Filtration) Flow sheet

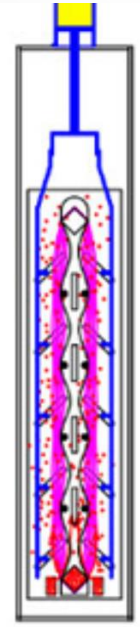
Fiber shrinkage by cylinder → Move to center of moving rod → Fiber filter pore density → Perform filter function.

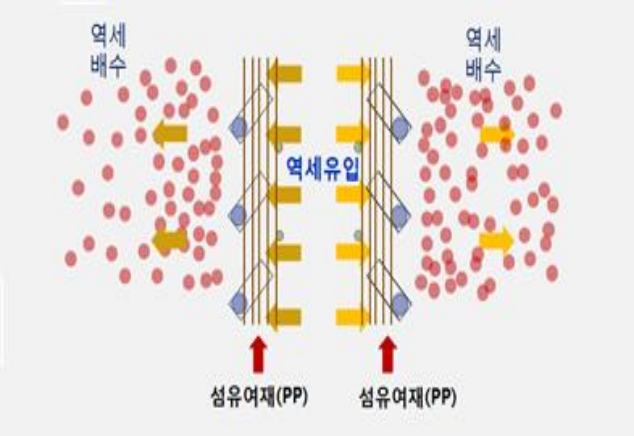




Filtration process flow sheet

Fiber Expansion by Cylinder → Moving rods separated on both sides → Fiber filter air gap loose → Easily peel off foreign matter during back washing.

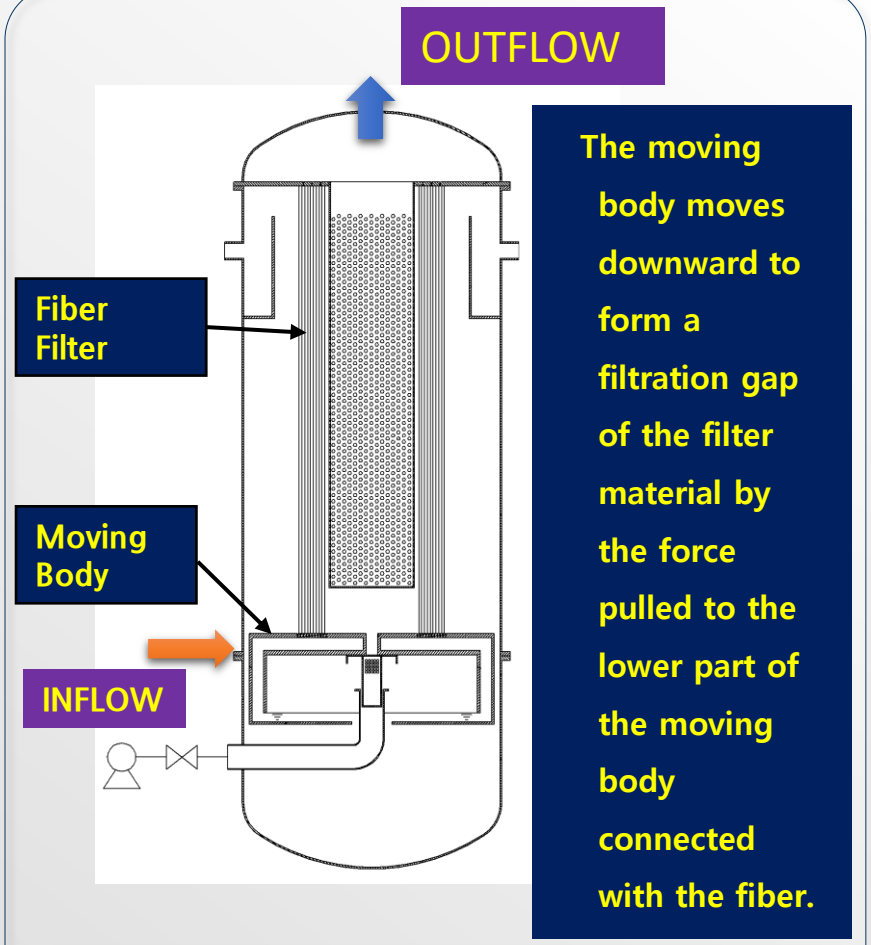




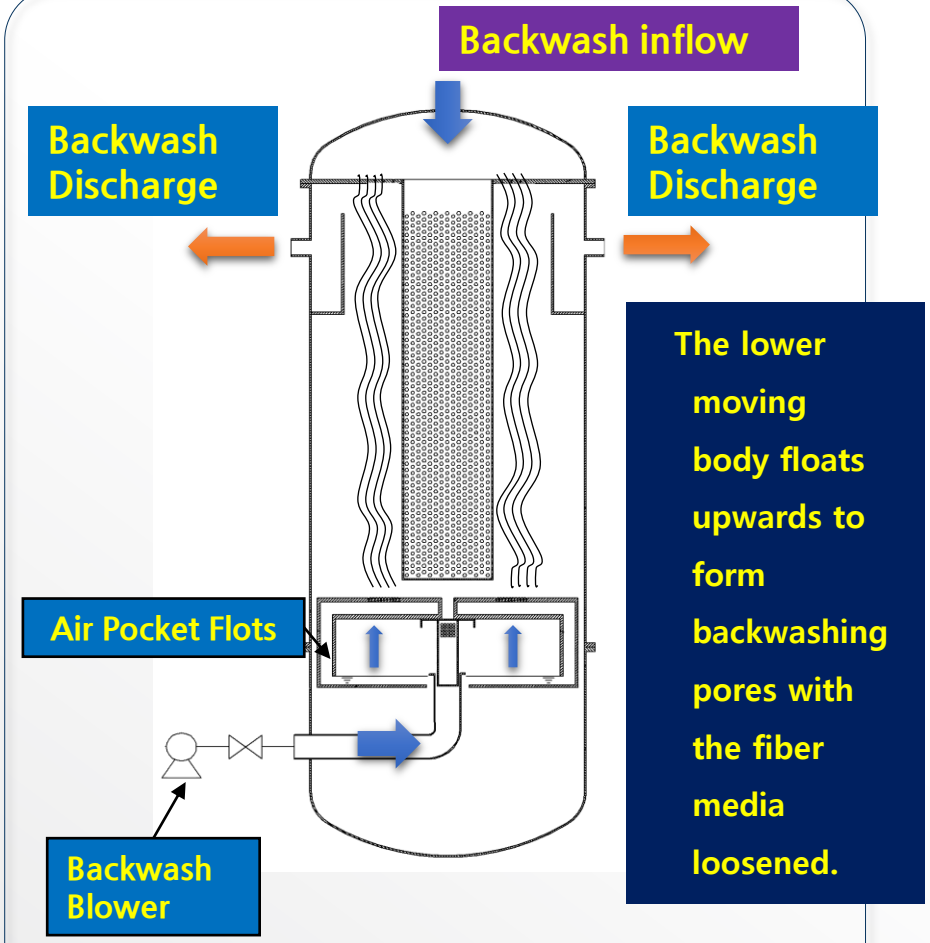
Backwash process flow sheet

03-2 | FF filtration / backwashing principle

FF (Flots Fiber Filtration) flow sheet



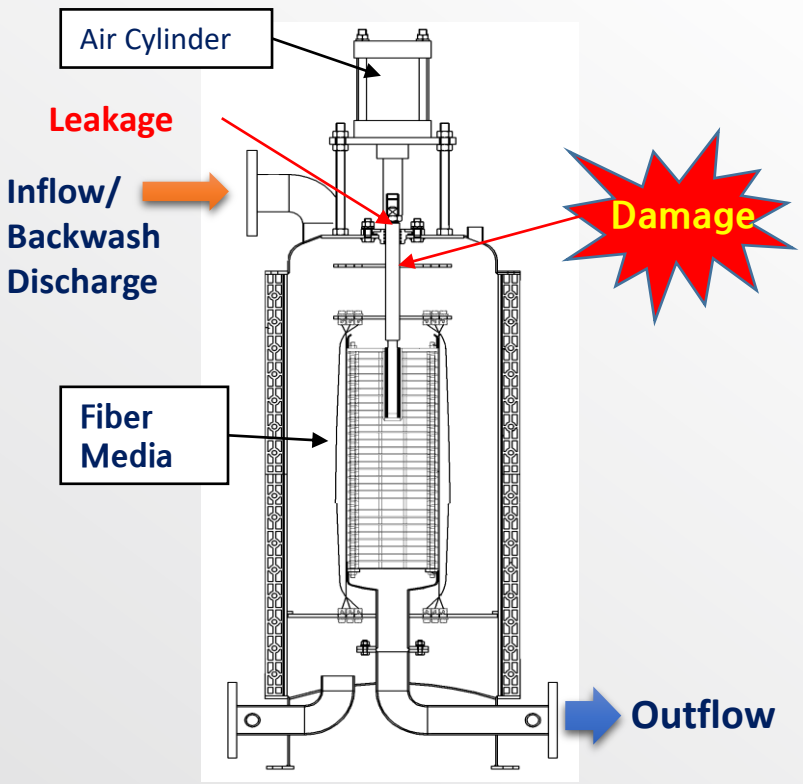
Filtration process flow sheet



Backwash process flow sheet

04 Problems of existing FF fiber filter media

Third-party products FF fiber media



Competitor 'S' Company's FF products

PROBLEMS

- Upper Pneumatic Cylinder Controls Expansion Shrinkage of Fiber Media.
- Leakage phenomenon: Difficult to direct filtration for UF, R/O pretreatment.

- Use Fiber ties :Fiber ties are damaged
- No direct fiber contact spray of backwash air
- Decrease of backwash efficiency

- Top supply of raw water inflow → Stabilization of floating material suspended in filter
- Built-in porous tube in filter → Deformation may occur during long-term use: Causes of Process Water Quality Decrease

SGF Fiber Filter Media

SS Removal 80%, Backwash 3%

ADVANTAGES

- Highest performance against caustic ratio
- Simple structure eliminates maintenance costs

- Backwash 3% : Long continuous filtration process is possible
- Possible to process internal sediment separately
- Adjustable fiber filling rate, easy to replace fiber
- Possible to minimize installation area with square plate type diskette structure
- Removal of inner perforated plate ensures smooth backlash of fiber media during backwashing

SGF : General-PERFORMANCE RESULT

SGF Filter PERFORMANCE Data sheet

Subject	INFLOW RAW WATER	OUTFLOW WATER	REMOVAL (%)
SS (mg/L)	6.30	0.50	92
BOD (mg/L)	2.90	1.40	52
COD (mg/L)	6.50	4.80	26
T-N (mg/L)	5.03	4.50	10
T-P (mg/L)	0.094	0.033	65
No. of Coliform	70	43	39

※ OO industrial WWTP: effluent filtration (Backwatershed quantity:1~2% / filtration duration 120~400 minutes)

Subject	INFLOW RAW WATER	OUTFLOW WATER	REMOVAL (%)
SS (mg/L)	14.0	1.7	88

※ OO WWTP: effluent filtration (backwaters quantity:1.5~2.5% / filtration duration 100~300 min)

Subject	INFLOW RAW WATER	OUTFLOW WATER	REMOVAL (%)
SS (mg/L)	4.5	0.8	82
Turbidity(NTU)	4.5	1.75	61

※ OO WWTP : discharge water filtration (Backwaters quantity: 0.5~1.0% / filtration duration 300~450 minutes)

FF Filter PERFORMANCE Data sheet

Subject	INFLOW RAW WATER	OUTFLOW WATER	REMOVAL (%)
SS (mg/L)	9.80	0.90	90.8
BOD (mg/L)	5.80	2.40	58.6
COD (mg/L)	10.50	7.80	25.7
T-N (mg/L)	10.03	8.84	11.9
T-P (mg/L)	0.106	0.040	62.2

※ OO WWTP: effluent filtration (Backwatershed quantity: 3% / filtration duration 120 minutes)

Subject	INFLOW RAW WATER	OUTFLOW WATER	REMOVAL (%)
SS (mg/L)	16.0	1.8	88.8
Turbidity(NTU)	8.5	0.7	91.8

※ OO sewage treatment plant discharge water filtration (backwash water amount: 2.5% / filtration duration 120~200 minutes)

SGF FILTER SPECIFICATION

Model	THROUGHPUT (m^3/D)	DESCRIPTION			Filter Module
		mmW	mmH	Q'TY	
SGF – 12	120	580	1,200	1	32EA x 1set - 1,200mH
SGF – 15	150	700	1,200	1	38EA x 1set - 1,200mH
SGF – 20	200	900	1,200	1	50EA x 1set - 1,200mH
SGF – 30	300	700	1,200	2	38EA x 2set - 1,200mH
SGF – 60	600	1,000	1,600	2	56EA x 2set - 1,600mH
SGF – 100	1,000	900	2,000	3	50EA x 3set - 2,000mH
SGF – 300	3,000	1,100	2,400	6	61EA x 6set - 2,400mH
SGF – 500	5,000	1,500	3,600	5	83EA x 5set - 3,600mH
SGF – 800	8,000	1,500	3,600	8	83EA x 8set - 3,600mH
SGF – 1000	10,000	1,500	3,600	10	83EA x 10set - 3,600mH

※According to the extension of module, Daily throughput up to infinity

FF FILTER SPECIFICATION

Model	THROUGHPUT (m^3/D)	DESCRIPTION			Filter Module
		mmW	mmH	Q'TY	
FF – 15	150	380	1,600	1	32EA x 3Layer - 900mH
FF – 25	250	480	1,800	1	38EA x 3Layer - 1,100mH
FF – 30	300	480	1,900	1	50EA x 3Layer - 1,200mH
FF – 50	500	700	2,100	1	60EA x 3Layer - 1,410mH
FF – 80	800	770	2,800	1	76EA x 3Layer - 2,100mH
FF – 100	1,000	990	2,900	1	88EA x 3Layer - 2,200mH
FF – 150	1,500	990	3,400	1	88EA x 3Layer - 2,700mH
FF – 200	2,000	1,250	3,600	1	102EA x 3Layer - 2,900mH
FF – 250	2,500	1,250	4,300	1	102EA x 3Layer - 3,600mH
FF - 300	3,000	1,250	4,800	1	102EA x 3Layer - 4,100mH

※According to the extension of module, Daily throughput up to infinity

SGF Filter Operating site

NO	Operating Sites	Division	Throughput (m^3/D)	Q'ty
1	Yangdong WWTP	Sewage	400	1
2	Livestock WWTP	Livestock	450	25
3	OO Tunnel WWTP	Municipal	1,000	5
4	OO Tunnel WWTP	Municipal	1,000	7
5	Busan Dyeing WWTP	Municipal	1,000	3
6	Nuclear Power Plant	Sewage	1,000	1
7	Samrangjin WWTP	Municipal	4,000	1
8	Hanam WWTP	Municipal	4,000	1
9	Changnyong WWTP	Municipal	6,000	1
10	Jinyoung WWTP	Municipal	19,000	1
11	POSCO steel WWTP	Sewage	50,000	1
12	SangDong WWTP	Municipal	1,500	1
13	Muangun WWTP	Municipal	8,500	3
14	Hampyonggun Livestock	Sewage	1,200	4
15	Uljingun Livestock	Sewage	720	2
16	Namwon city WWTP	Municipal	250	1

FF Filter Operating site

NO	Operating Sites	Division	Throughput (m^3/D)	Q'ty
1	Tongyoung Seawater	Sea water	500	2
2	Rain water	Rain	500	1
3	Livestock WTP	Livestock	240	1
4	Industrial WTP Recycling	Ind.water	120	1

WATERTEC

Company name	WATERTEC		
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Web-site	www.elode.co www.bluewin.kr www.watertech59.com		

Thank you for your attention and hope to be a leading maker of Water treatment Fiber-Filtration.