



**TR TAEYOUNG**  
FILTRATION SYSTEM

# Contents

## **About Us**

---

- 09 Company Status
- 11 Organization Chart / Patent and Technology
- 12 Product Introduction
- 15 Major Customers

## **Introduction of item**

---

- 16 Filter press
- 26 Automation system
- 27 Inline condensation system
- 28 Filter plates and filter cloths

## **Supply status**

---

- 31 Major supply status



# LET'S START HERE<sup>o</sup>

The water starts a repeated journey.  
Get wet in the mountains during the trip.  
Stay in a quiet lake.

Of course, water meets people.  
The water that met humans as usual  
Loses its original purity.

Someone should send  
Water used by humans  
Back to nature.

Because the journey of water must not end  
with a human in this way.  
We erase human traces from the water.

To bring water that flowed to nature  
back to Earth again.

USED.TAEYOUNG.NATURE  
TAEYOUNG Filtration System

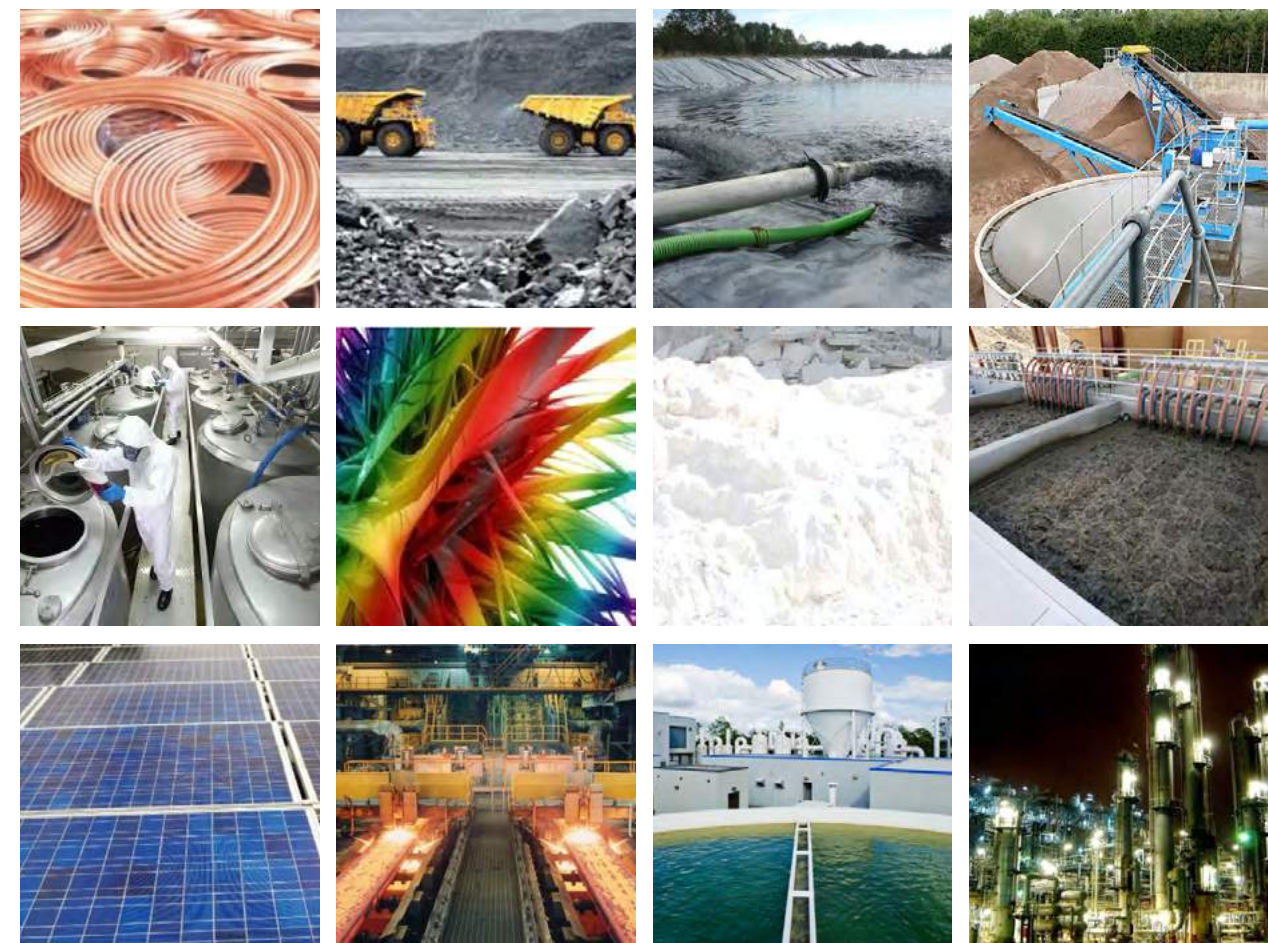




**TAEYOUNG**  
FILTRATION SYSTEM

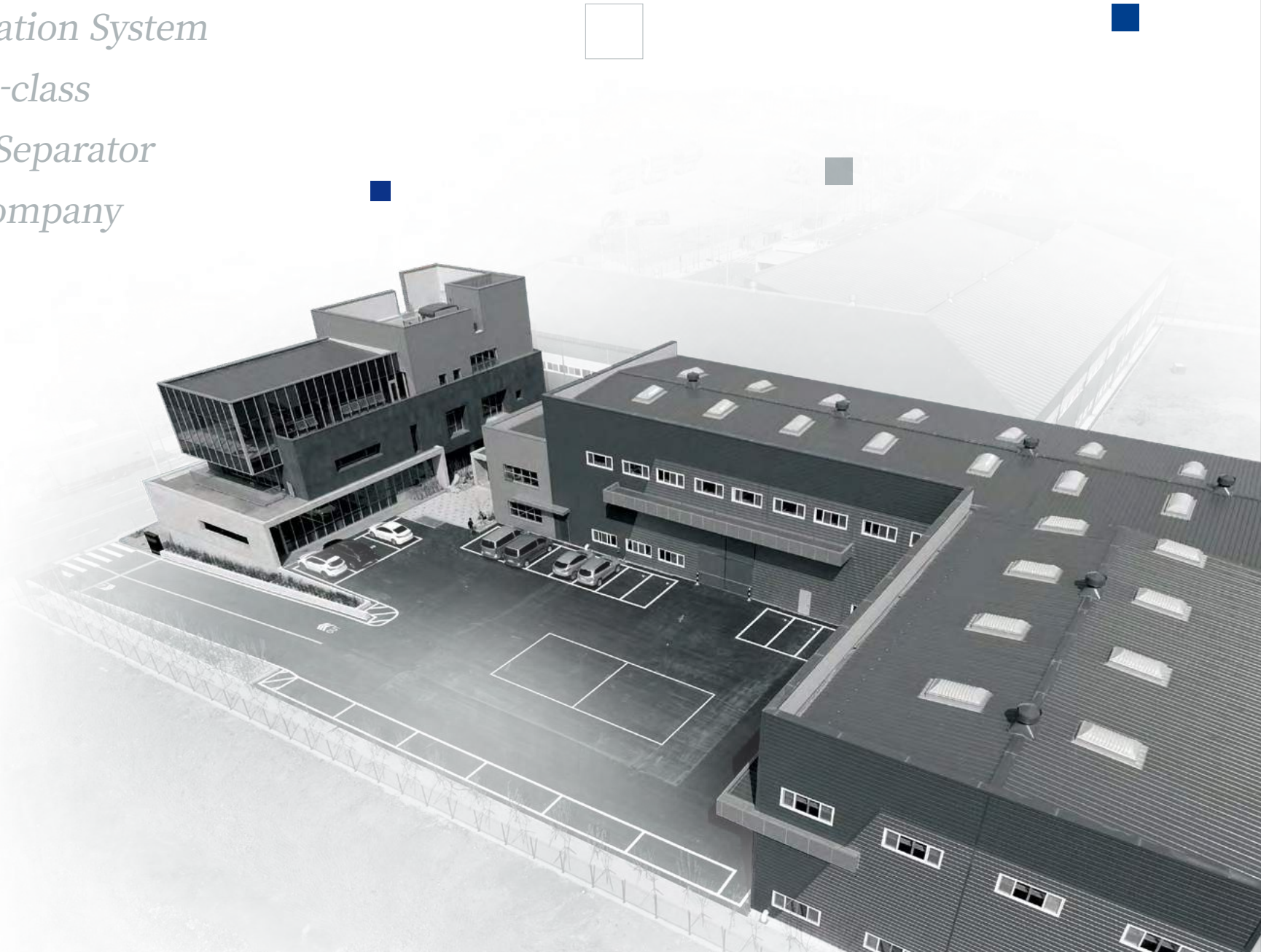
## Mechanical Separation Solutions From Taeyoung Filtrationsystem

Taeyoung Filtration System will provide an optimal solid-liquid separation solution for production and water treatment processes in various industries, such as electronics / metal smelting / steelmaking / food / dyeing / petrochemical / ceramic / environmental industry, based on more than 1,500 industrial solid-liquid separation know-how.





Taeyoung Filtration System  
Towards world-class  
Solid - Liquid Separator  
professional company  
Company view



Major customers







# Return to Basic

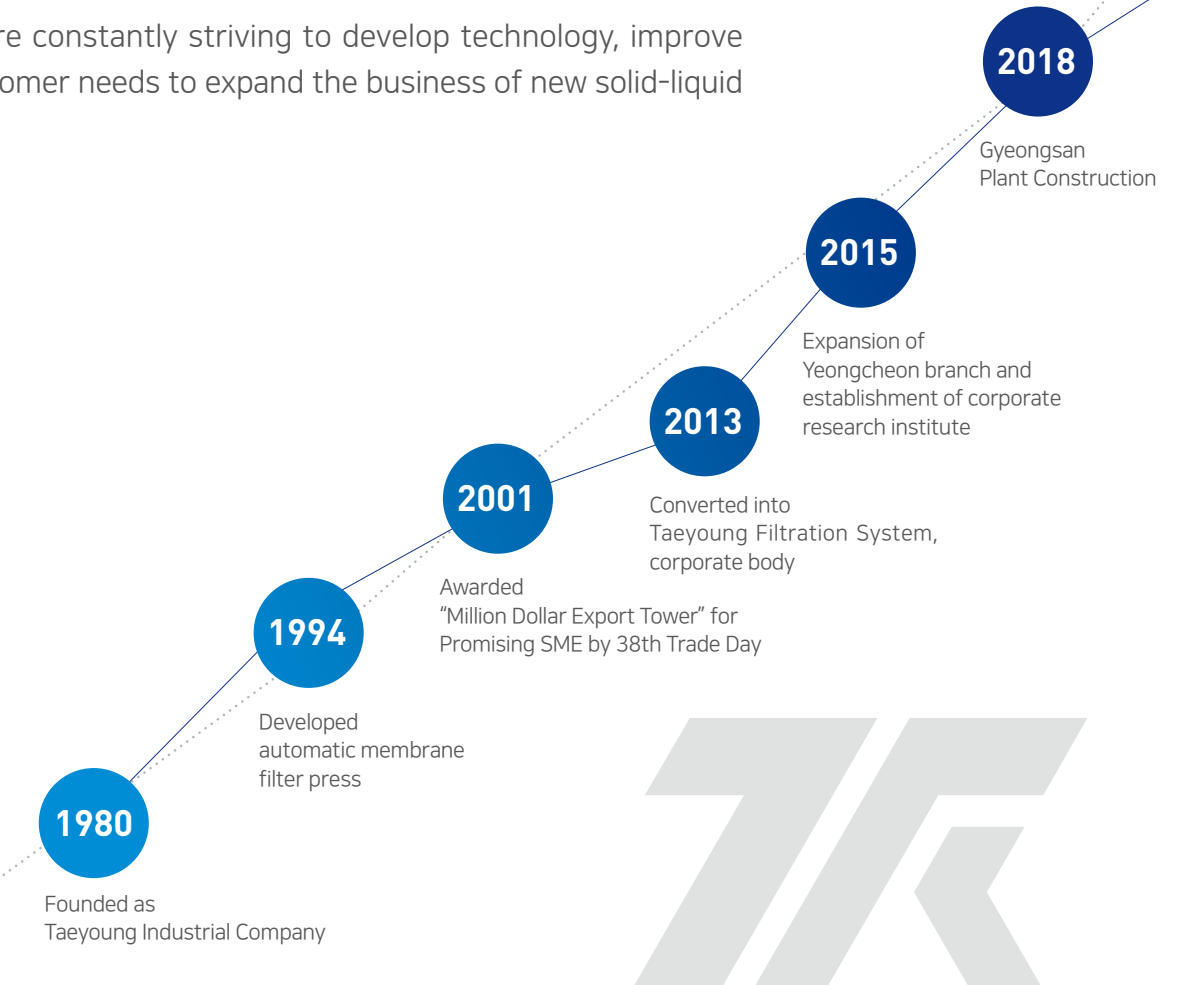
Principles and standards make a difference.

TAEYOUNG Filtration System is a company that produces filter presses, which are the main equipment for solid-liquid separation. Since 1980, we have been striving for the goal of customer satisfaction and best quality. We have continued to expand our dealings with domestic top-tier customer companies, have grown quantitatively and qualitatively, and have developed into the No. 1 filter press producer in Korea, based on accumulated technology and trust.

Building on our accumulated capacities so far, we are constantly striving to develop technology, improve productivity, enhance competitiveness and meet customer needs to expand the business of new solid-liquid separation facilities.

## Company Profile

Company Name	TAEYOUNG Filtration System Co., Ltd.
Business Number	504-86-06344
Industry	General Purpose Machinery Manufacturing Building machinery equipment construction business Other building equipment installation construction business
Headquarters Address	70, Jisiksaneop 2-ro, Hayang-eup, Gyeongsan-si, Gyeongsangbuk-do
Branch Address	91-25, Yuhakeun-gil, Bagan-myeon, Yeongcheon-si, Gyeongsangbuk-do
Establishment Year	February 24, 1980
Employees	39
Main Phone	+82-53-352-3103
home page	<a href="http://www.tae-young.com">http://www.tae-young.com</a>





# TAEYOUNG FILTRATION SYSTEM



## Securing technology through R & D activities

Development of reliable independent technology based on various patents and certifications

**Filterpress Company**

## Global Market Challenge

Global small giant with product competitiveness

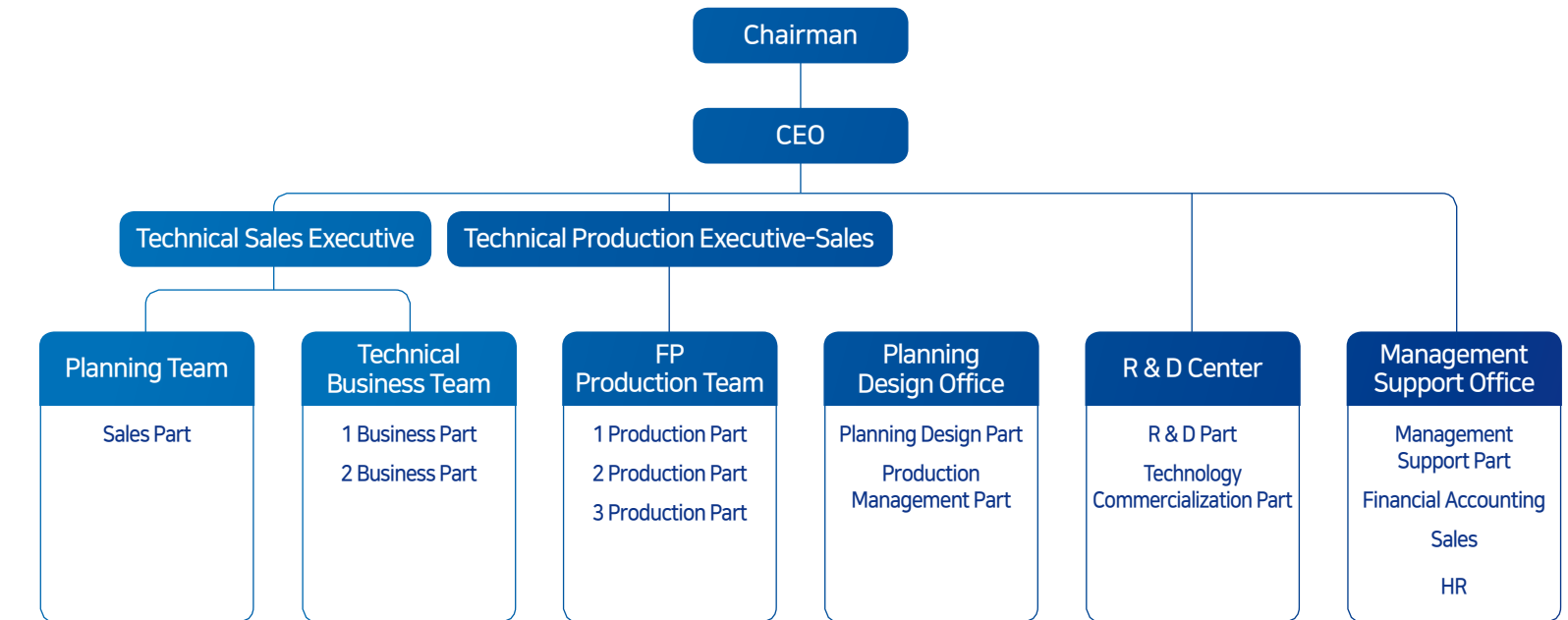
**Filterpress Company**

## Leading company that creates value

Korea's No. 1 Filter Press M / S Company based on long experience

**Filterpress Company**

## Organization chart



## Patent and Technology

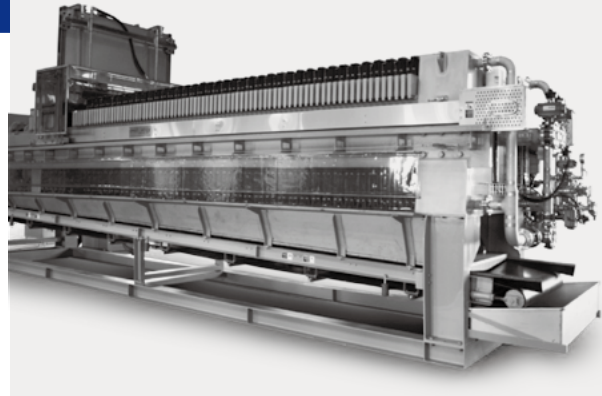


I Domestic patents - Device to make fluc for filter and 10 cases

I International patents 7 cases, utility model 2 cases



01



### Filter press

Taeyoung Filtration System's fully automatic filter press is the best solution for producing the cake with the lowest moisture content while discharging clear filtrate. Taeyoung Filter Press is composed of rigid body structure, precise design, convenience of operation, and operation options for harsh operating environment in various sizes to realize the best performance in all industrial sites.

### Automation system

Taeyoung Filtration System's automation system focuses on the operator's convenience and safety when it comes to filter press operation. To this end, it is designed to allow control of all installations in conjunction with the filter press, monitoring of operating conditions, configuration of the filtration process, setting conditions for safety, and monitoring of water level and flow rate.



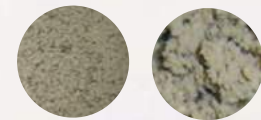
02

03



### Inline flocculation system

In-line flocculation system improves productivity through shorter liquid mixing, continuity, ease of process control, reduced power costs and increased filtration efficiency by preventing the flocs destruction.



04

### Filter plate

By introducing advanced products from Klinkau Co., Ltd., we are applying optimal filter plates suitable for the operating conditions of industrial sites. We are concentrating our R & D for localization to supply advanced products at more economical prices.



### Filter cloth

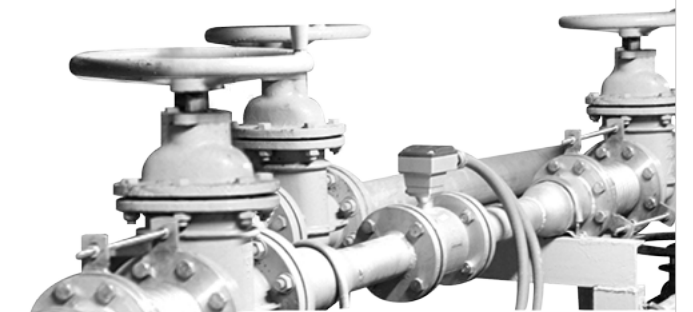
To ensure the long life of the filter cloth, the main consumable part of the filter press, we periodically analyze the property of matter of the filter cloth. And with regard to the grain size of the filter particles, we construct and supply the optimal product by grain size analysis for precise product supply.

05

06

### Mechanical facility construction

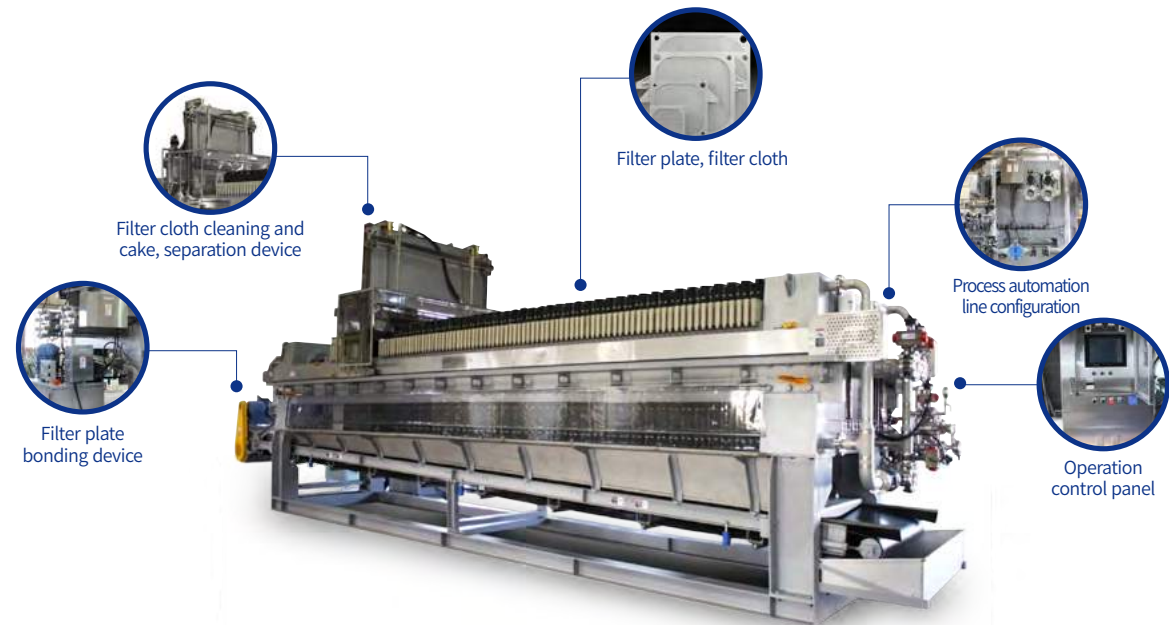
Taeyoung Filtration System manufactures and supplies all related equipment related to filter press (suit, hopper, various pumps, compressor, storage tank, various measuring equipment, etc.), and performs all necessary mechanical equipment construction work on site.





# Filter press

## Filter Press Overview



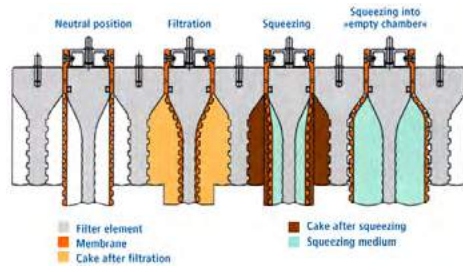
### Filtration principle of general filter press

The mechanism of the industrial solid-liquid separator is based on pressurized dewatering by mechanical devices. The filter press presses and dehydrates the sludge-type dehydrated material. Multiple filter plates mounted on the filter press are joined by hydraulic cylinders and form a filtrate chamber between the plates. The sludge pressurized to 5 ~ 6 bar by the pump is injected into the filtrate chamber through the sludge inlet and pressurized, and the filter cloth mounted on the surface of the filter plate acts as a filter so that the filtrate is filtered out along the drainage channel formed by the projection on the surface of the filter plate, and is discharged.

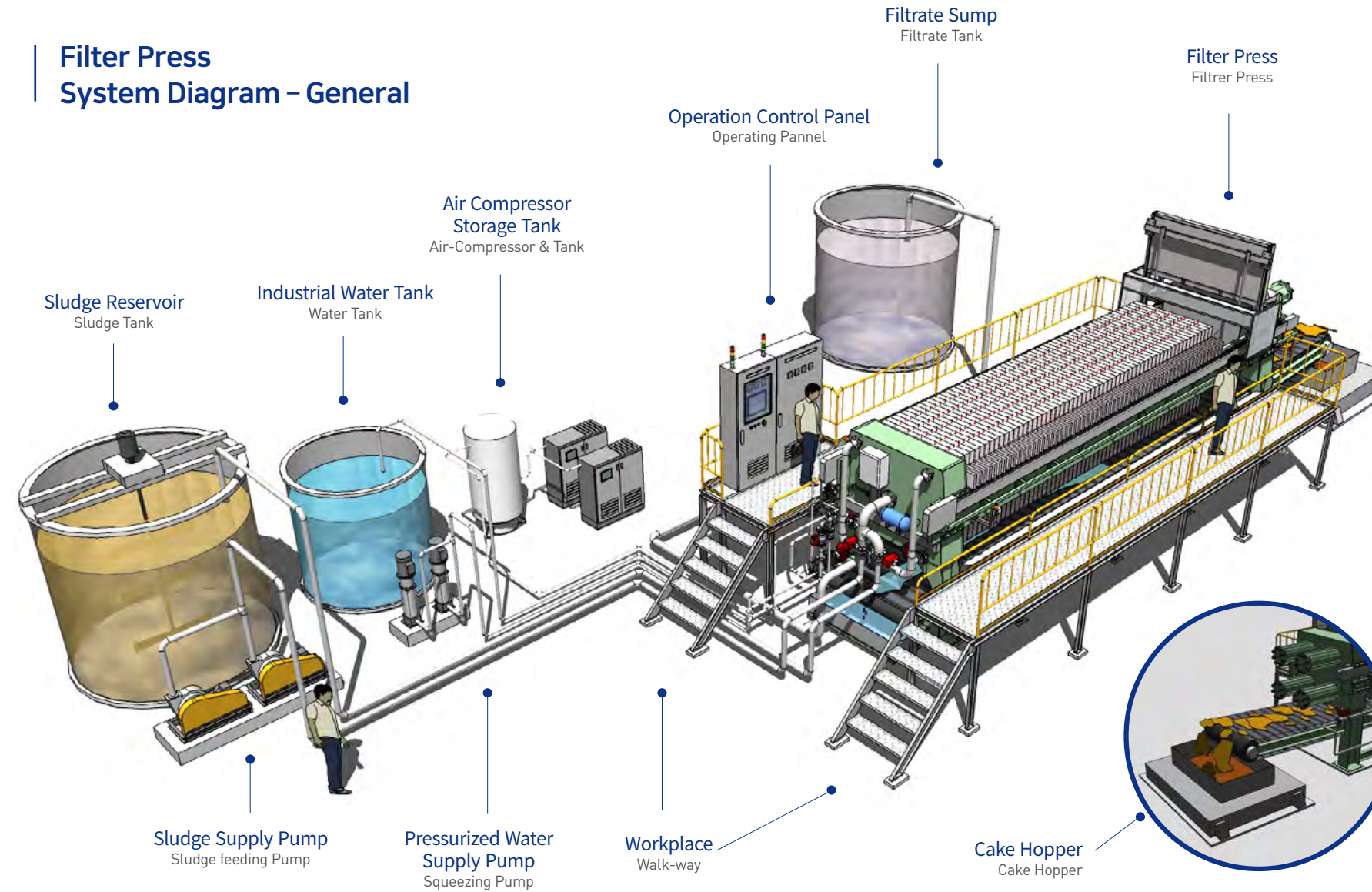


### Filtration principle of membrane filter press

Membrane filter presses were developed for high filtration efficiency (reduction of the percentage of water content of the discharge cake) and shortening of the process time. Normal filter presses are equipped with only chamber filter plates, but membrane filter presses are equipped with a combination of chamber and membrane filter plates. After the filtration process (pressure dehydration) of the general filter press, the press dewatering process is additionally configured. Press dewatering is the process of dewatering by injecting 7-15 bar of water or air into the membrane filter plate and pressing the sludge in the inner chamber through again under high pressure.



## Filter Press System Diagram - General









## Filter Press Applications

The filter press is a representative equipment of the industrial solid-liquid separator and has been widely used in production and water treatment processes. Recently, with the strengthening of environmental regulations, the necessity of high efficiency solid-liquid separator is increasing, and the demand for membrane filter press with the best performance (water-reducing ability of discharge cake) among solid-liquid separator is increasing.












## Performance Comparison by Type of Dewatering Equipment - General

Kinds	Belt Press	Screw Press	Decanter	Filter Press
shape				
Overview	Dehydration by compression force of driving roller	Dehydration by low speed screw thrust	Dehydration by high speed centrifugal force	Dehydration by press and compression
Cake Moisture Rate	≒ 85%	≒ 84%	≒ 84%	≒ 68%
SS recovery rate	below 95%	below 95%	below 95%	above 98%
Advantages	<ul style="list-style-type: none"> <li>• High distribution rate</li> </ul>	<ul style="list-style-type: none"> <li>• Simple structure</li> <li>• closed structure</li> </ul>	<ul style="list-style-type: none"> <li>• Simple structure</li> <li>• closed structure</li> </ul>	<ul style="list-style-type: none"> <li>• High dehydration efficiency (lowest water content)</li> <li>• long equipment life</li> <li>• semi-closed structure</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• High generation of odor and moisture</li> <li>• High consumption of washing water</li> <li>• High water content</li> </ul>	<ul style="list-style-type: none"> <li>• Require regular maintenance due to wear due to screw rotation</li> <li>• High water content</li> </ul>	<ul style="list-style-type: none"> <li>• Due to the noise, vibration, and abrasion caused by high-speed rotation, regular maintenance is required</li> <li>• High water content</li> </ul>	<ul style="list-style-type: none"> <li>• initial investment costs are high</li> </ul>
















### Performance Comparison by Type of Dewatering Equipment - Comparison of Sludge Cakes Generated by Water Content

Sludge Inflow	Mechanical Filtration	Sludge Cake Generation
 <p>Inflow: 100.0 ton / day, Water content: 97%</p>	<b>Filter Press</b> 	 <p><b>47</b>                      Generation: 9.4 ton / day, Water content: 68%</p>
	<b>Decanter</b> 	 <p><b>94</b>                      Generation: 18.8 ton / day, Water content: 84%</p>
	<b>Screw Press</b> 	 <p><b>94</b>                      Generation: 18.8 ton / day, Water content: 84%</p>
	<b>Belt Press</b> 	 <p><b>100</b>                      Generation: 20.0 ton / day, Water content: 85%</p>

※ The above figures are calculated based on the data of the general wastewater treatment plant and vary depending on the filtration conditions.

### Performance Comparison by Type of Dewatering Equipment - Sludge Cake Drying Cost

Mechanical filtration	sludge cake generation	drying cost	cake generation after drying
<b>Filter Press</b> 	 <p><b>47</b>                      Generation: 9.4 ton / day, Water content: 68%</p>	 <p><b>33</b>                      38 ten thousand won / day</p>	 <p>Generation amount : 3.75 ton (moisture rate: 20%)</p>
<b>Decanter</b> 	 <p><b>94</b>                      Generation: 18.8 ton / day, Water content: 84%</p>	 <p><b>92</b>                      106 ten thousand won / day</p>	
<b>Screw Press</b> 	 <p><b>94</b>                      Generation: 18.8 ton / day, Water content: 84%</p>	 <p><b>92</b>                      106 ten thousand won / day</p>	
<b>Belt Press</b> 	 <p><b>100</b>                      Generation: 20.0 ton / day, Water content: 85%</p>	 <p><b>100</b>                      115 ten thousand won / day</p>	

※ 1. One. Sludge Inflow: 100ton / day, Inflow moisture rate: 97%, Dryer Thermal Efficiency: 55%, Energy Used for Drying: Based on electricity (90 won / kw).  
 2. The above figures are calculated based on the data of the general wastewater treatment plant and vary depending on the filtration conditions.

### Optimal filter press design know-how

Based on know-how accumulated over 1,500 industrial solid-liquid separations for 40 years, optimized filtration process configuration according to inflow sludge conditions, capacity design, operating system design by design personnel specializing in environmental engineering



· Influent sludge composition analysis



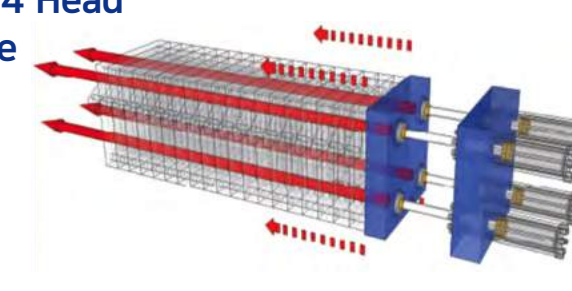
· particle size analysis



· pilot test

### Filter head connector of 4 Head hydraulic cylinder structure

4-head hydraulic cylinder structure specialized in filter plate connection device prevents partial pressure generated when filter plate is combined to improve durability



· 4-Head Hydraulic Cylinder Structure



· 4-Head Hydraulic Cylinder Structure

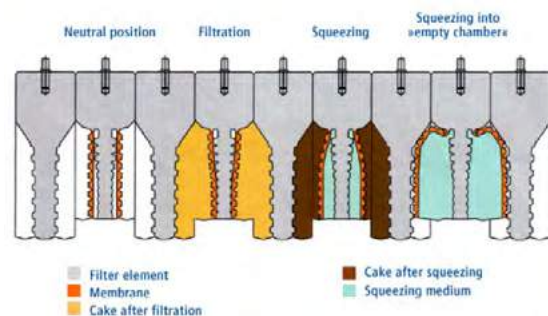


· 1-Head Hydraulic Cylinder Structure

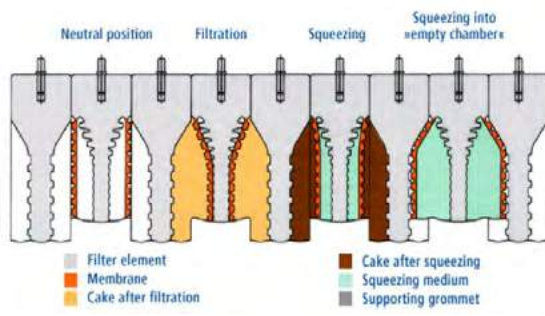
### Field-specific filter press filter plate application

Various types of filtration plate products, such as Standard welded type / empty chamber welded type / Overhanging empty chamber detachable type, can be applied to any industrial site.

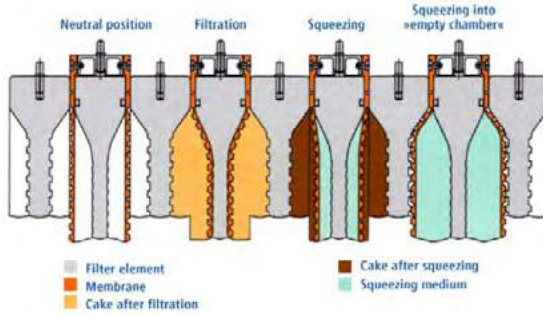
#### · Standard welded type



#### · Empty chamber welded type



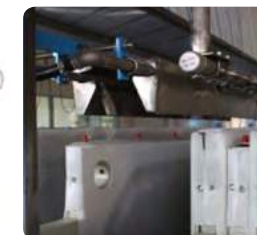
#### · Overhanging empty chamber detachable type



### Air Jet Sludge Cake Separation Device

Sludge cake with vortex phenomena caused by air jet injection : Increased separation efficiency, minimized consumables, reduced inspection time

#### · Sludge cake separation device shape












#### · sludge cake discharge



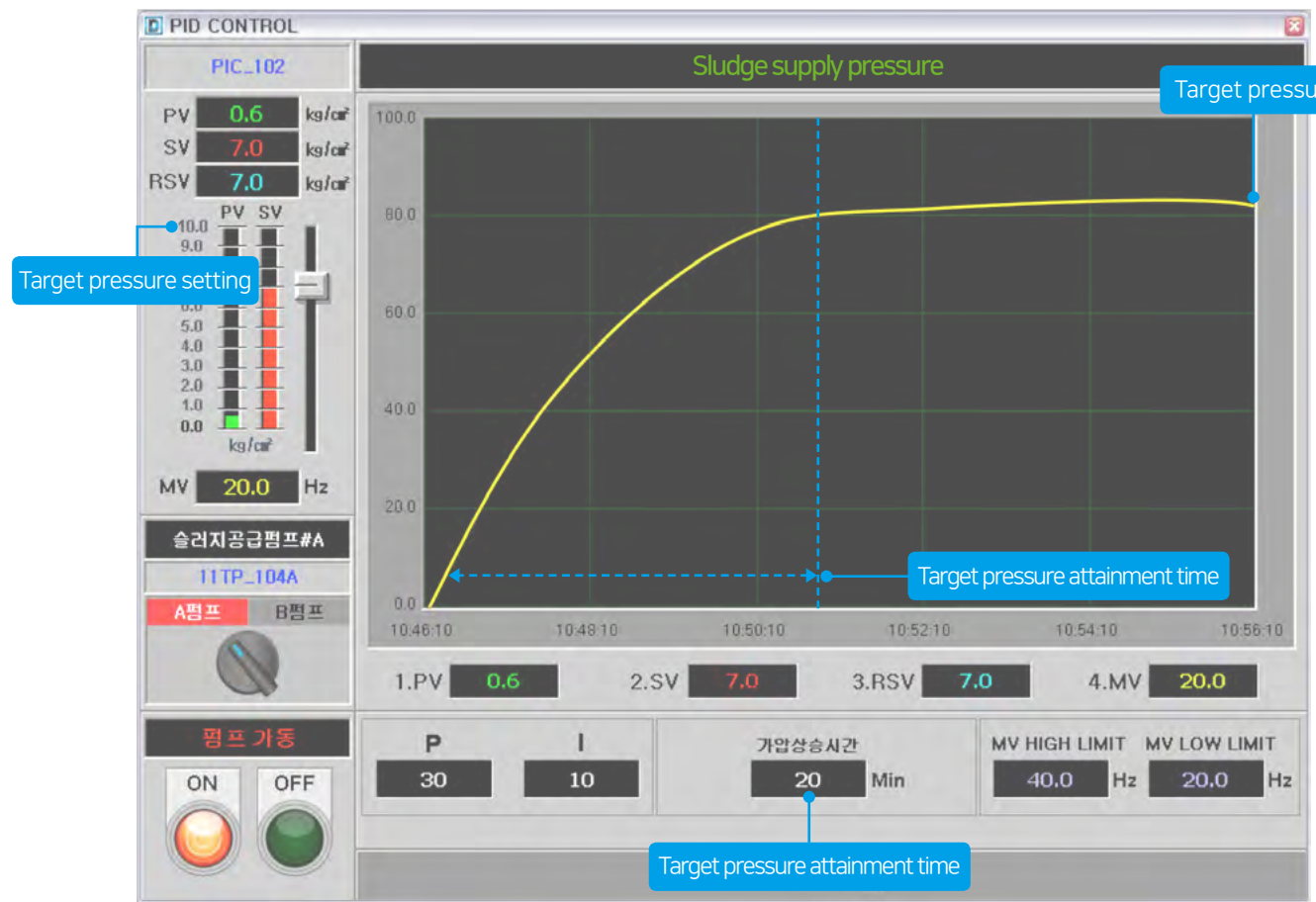
※ Patented technology of Taeyoung filtration system is applied to '4-Head hydraulic cylinder structure' and 'air jet type sludge cake separation device'.



### Air jet sludge cake separation device

Vibration separation device	Filter cloth Mobile separation device	Air jet separation device	Features
			Simple structure
			Hermetic structure
			Easy to maintain

### PID Control System for Extended Life of Fillet Plate and Fillet Fillet



When the filter plate and the filter cloth are momentarily boosted, a physical shock is applied to the filter plate and the filter cloth, so that there is a high risk of breakage, and the SS concentration of the filtrate may be increased to reduce the solids recovery rate. To prevent this, PID control system is applied to control the sludge supply pressure and the compaction pressure.

Extended life of filter plate and filter cloth and increased solids recovery rate !!

## Automation system

The automation system focuses on the operator's comfort and safety, in relation to the filter press operation. It is designed to control all related equipments connected with the filter press, as well as to monitor the operation status, configure the filtration process, set the conditions necessary for safety, and monitor the water level and flow rate. The control panel and junction box are made of STS304 material and the wiring connection of its various sensors is IP65 compliant, so it is excellent in corrosion resistance and water resistance.

Auto/Manual/Semi-auto operation panel for filter press



PID control by inverter : Squeezing pressure



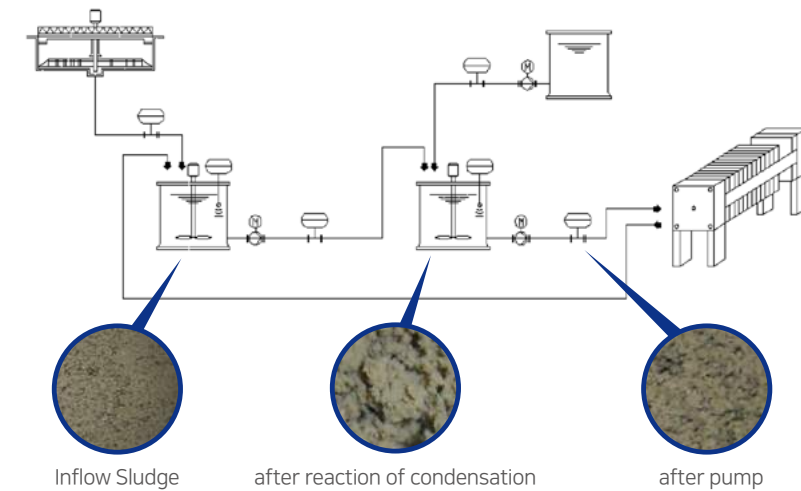
Panel & wiring



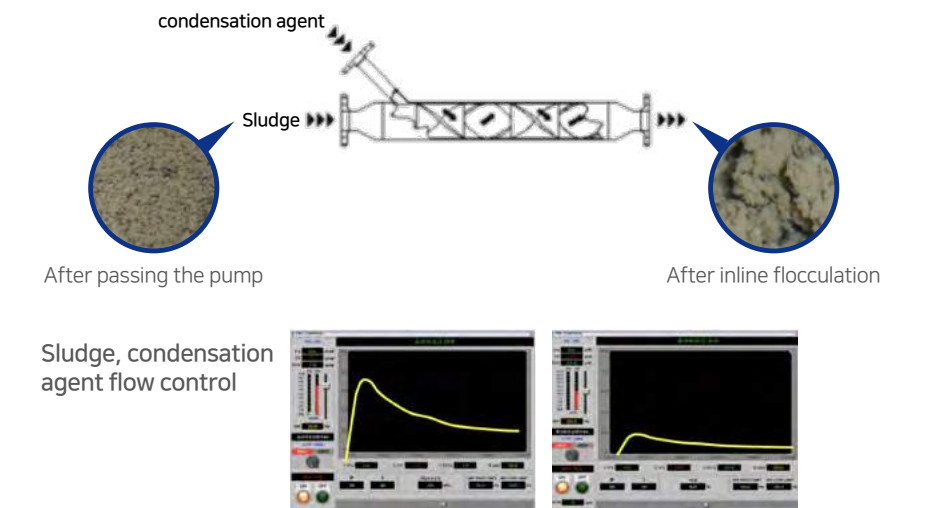
## Inline-Flocculating System

The use of secondary polymer condensation agents to improve the filterability of the filter sludge has its disadvantages, for example, after condensation, the filter deterioration due to the floc destruction by the impact of agitator and transfer pump, the increase of equipment for condensation (agitator, condensation tank, etc.). As a countermeasure, the in-line condensation system improves productivity through shortening of agitator processes, sequencing, ease of process management, reduced power costs, and increased filterability by preventing floc destruction.

• In case of not using the integrated in-line flux forming device



• In case of applying the integrated in-line flux forming device





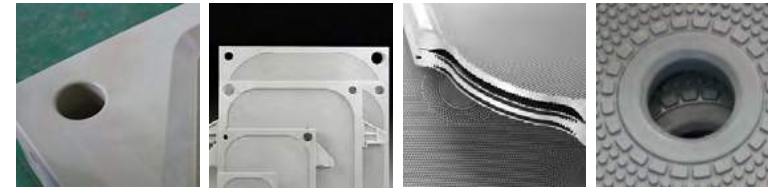
# Filter Plates & Filter Cloths

## • Membrane plate → Standard welded membrane

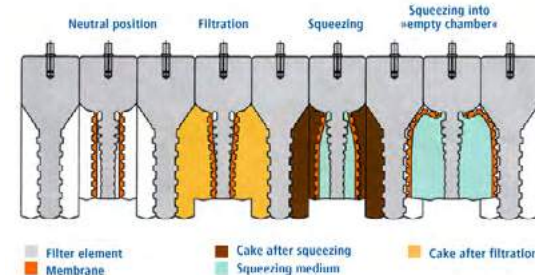
Standard welded membrane filter plates are applied in combination with standard filter plates. This design is commonly used in industrial sites. Membrane shrinkage and expansion behavior cause bending stress. This can affect the chemical and physical stability of PP, the main material of the filter plate. The product minimizes this by applying two hinge lines. The design of the membrane filter plate structurally requires a minimum cake thickness proportional to the cake thickness before pressing. However, in many industrial sites, the filter plate chamber is not uniformly filled or the empty filtrate chamber occurs due to changes in solids concentration and filterability. This can cause membrane overexpansion, which can cause membrane damage. In sites with large changes in solids concentration and filterability, Membrane filter plates, with a design that does not damage the membrane even when the compression process is performed in the empty filtrate chamber, are recommended.

## • Membrane plate → Empty chamber welded membrane

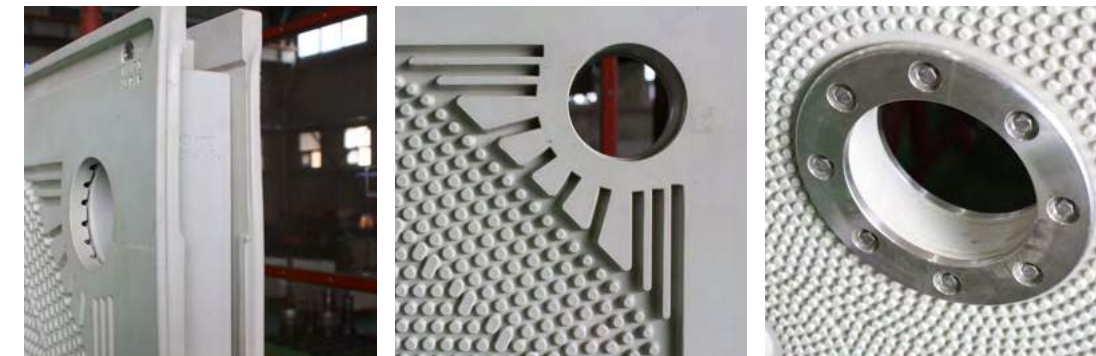
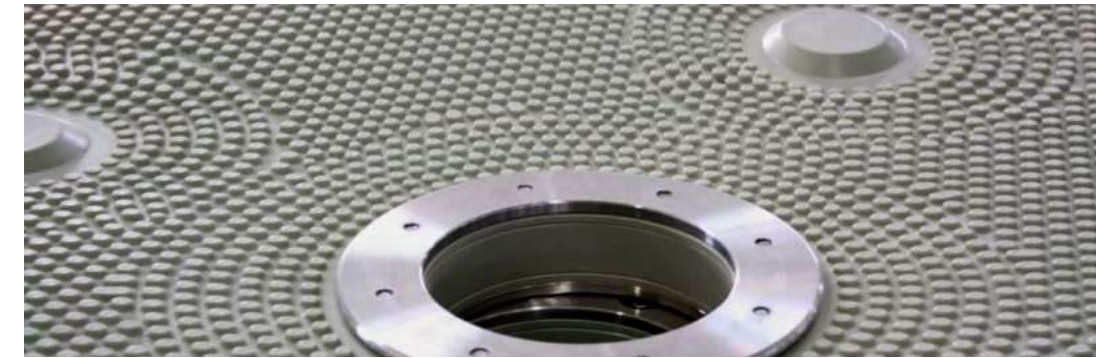
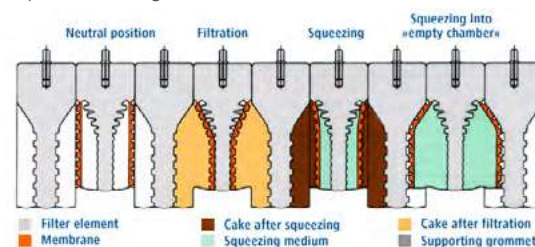
In most industrial settings, due to changes in solids concentration and filterability, the filtrate chamber of the filter plate is not uniformly filled or the empty filtrate chamber occurs. This phenomenon causes overexpansion of the membrane, resulting in damage to the membrane. Empty chamber welded membrane filter plates are designed to ensure no damage to the membranes even during sludge feeding and compression processes in the empty chamber.



- Design pressure : max. 16 bar
- Material : PP (body) + PP (membrane)
- Plate size range : from 470 x 470mm to 1500 x 1500 mm



- Design pressure : max. 16 bar
- Material : PP (body) + PP (membrane)
- plate size range : from 470 x 470mm to 1500 x 1500 mm

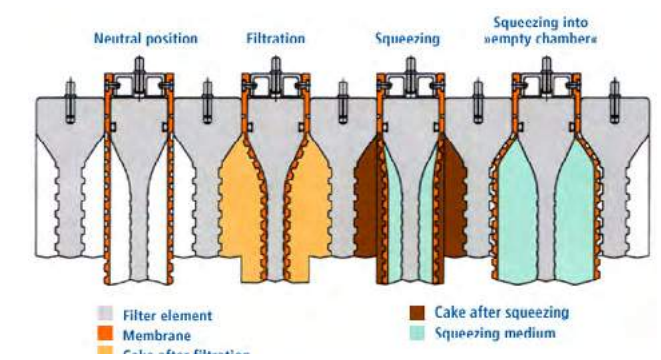


- Chamber filter plate
  - Design pressure : max. 7 / 16 bar
  - Material : PP
  - plate size range : from 470 x 470mm to 1500 x 1500 mm
- Filter plate & Frame plate
  - Design pressure : max. 7 / 16 bar
  - Material : PP
  - plate size range : from 470 x 470mm to 1500 x 1500 mm

## • Overhanging detachable empty chamber membrane filter plate

Overhanging detachable empty chamber Membrane filter plates have the advantage of an empty chamber and are reusable by membrane replacement if the membrane is damaged by prolonged use. It is the latest development of filter plate products, which extends the life of filter plate and is economical to maintain.

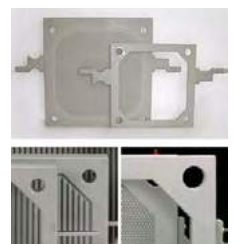
- Design pressure : max. 16 bar
- Material : PP (body) + PP (membrane)
- plate size range : from 470 x 470mm to 1500 x 1500 mm



## • Chamber filter plate



## • Frame plate





Taeyoung Filtration System applies the filter cloth optimized for the field based on extensive filter press application experience and has various products optimized for the filter plate size, sludge properties and particle size required by the customer. At the request of the client, we offer optimized products through sludge size analysis and chemical characterization in our own laboratory.

• Filter media selection → Temperature, Chemical resistance

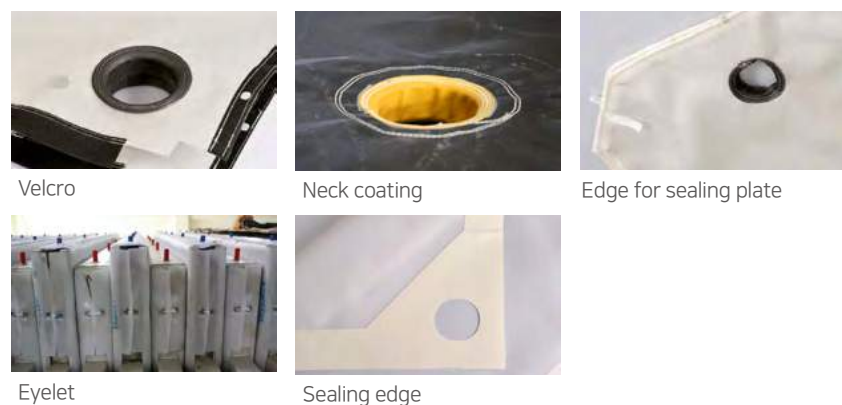
	Max. Temp.°C	Acids	Alkalis	Oxidizing Agents	Hydrolysis
Polypropylene	90	1	1	3	2
Polyester	90	2	3-4	2-3	4
Polyamide	100	4	1	3	2
PVDF	120	1	3	2	1
E-CTFE	140	1	1	1	1
ETEE	150	1	1	1	1
PPS	190	1	1	2-3	2
PEEK	230	1	1	1	1
PTFE	250	1	1	1	1

1=excellent, 2=good, 3=fail, 4=poor

• Filter media selection → Type of fiber



• Filter cloths & accessories



## Main Field Applications



### • Daegu Dyeing Industrial Complex Management Corporation

- Location : 33, Yeomsaekgongdanjungang-ro, Seo-gu, Daegu
- Capacity : 3,000 m<sup>3</sup>/day
- Sludge Inflow : 3,000 m<sup>3</sup>/day
- Solids volume : 51,200 kg, DS / day
- Driving time : 24hrs / day
- Comparison before and after facility (Belt press → Filter press)



Classification	Comparison before and after construction		
	Site view before construction	Site view after construction	Construction effect
Application Specification	Belt Press	Filter Press (TPM1500-180ch X 4set)	
Cake moisture content	85% or more	70% or less	15% decrease in cake moisture content
Cake yield	400 ton / day	200 ton / day or less	50% reduction in cake yield
Field view			



## Main Field Applications



### • Daegu Munsan Water Purification Plant

- Location : 70, Dalgubeol-daero 92-gil, Dasa-eup, Dalseong-gun, Daegu
- Facility Capacity : 200,000 m<sup>3</sup>/day
- Sludge Inflow : 158 m<sup>3</sup>/day(Average Turbidity), 552 m<sup>3</sup>/day(Design Turbidity)
- Solid Quantity : 4,738 kg/day(Average Turbidity), 16,548 kg/day(Design Turbidity)
- Driving time : 8 hrs / day



Classification	Status
Application Specification	Filter Press (TPM1500-144ch X 2set)
Cake moisture content	below 60%



## Main Field Applications



### • Daegu Sincheon Sewage Treatment Plant

- Location : 209, Joya-ro 2-gil, Buk-gu, Daegu
- Facility Capacity : 680,000 m<sup>3</sup>/day
- Sludge Inflow : 1,420 m<sup>3</sup>/day
- Solid Quantity : 28,400 kg · DS/day
- Driving time : 20 hr/day
- Operation Status

Classification	Status
Application Specification	Filter Press (TPM1500-78ch X 5set)
Cake moisture content	63 %



### • Daegu Buk-Bu Sewage Treatment Plant

- Location : 7, Dalseocheon-ro, Seo-gu, Daegu
- Facility Capacity : 170,000 m<sup>3</sup>/day
- Sludge Inflow : 350 m<sup>3</sup>/day
- Solid Quantity : 7,000 kg · DS/day
- Driving time : 20 hr/day

Classification	Status
Application Specification	Filter Press (TPM1500-58ch X 2set)
Cake moisture content	63 %




## Main Field Applications




### • Daegu Seo-Bu Sewage Treatment Plant

- Location : 210, Dalseo-daero, Dalseo-gu, Daegu
- Facility Capacity : 520,000 m<sup>3</sup>/day
- Sludge Inflow : 1,310 m<sup>3</sup>/day
- Solid Quantity : 26,200 kg · DS/day
- Driving time : 20 hr/day

Classification	Status
Application Specification	Filter Press (TPM1500-86ch X 4set)
Cake moisture content	63 %
Cake moisture content	

### • Daegu Dalseocheon Sewage Treatment Plant

- Location : 130, Yeomsaekgongdan-ro, Seo-gu, Daegu
- Facility Capacity : 400,000 m<sup>3</sup>/day
- Sludge Inflow : 600 m<sup>3</sup>/day
- Solid Quantity : 12,000 kg · DS/day
- Driving time : 20 hr/day

Classification	Status
Application Specification	Filter Press (TPM1500-64ch X 2set)
Cake moisture content	63 %
Cake moisture content	







**TAEYOUNG**  
FILTRATION SYSTEM  
[www.tae-young.com](http://www.tae-young.com)

- **Headquarters** 70, Jisiksaneop 2-ro, Hayang-eup, Gyeongsan-si, Gyeongsangbuk-do  
Tel +82.53.352.3103 Fax +82.53.352.3188
- **Branch** 91-25, Yuhakeun-gil, Bugan-myeon, Yeongcheon-si, Gyeongsangbuk-do  
Tel +82.54.726.2103 Fax +82.70.4015.4737