# Air Quality Control Systems

#### > Particulate Removal System

- Dry Electrostatic Precipitator
- Wet Electrostatic Precipitator
- Bag Filter
- Ash Handling System
- Tunnel ESF
- Hybrid Module Type Precipitator

#### > Gas Treatment System

- Wet Flue Gas Desulfurization
- Semi Dry/GSA
- SCR/SNCR
- VOCs Control SystemExhaust Gas Cleaning System (For Marine)

#### Retrofit & Maintenance

Air Quality Control System Retrofit
Technical Service
Feasibility Study

### Manufacturing Services

Dampers
 Steel Work

#### New & Renewable Energy • Solar Power System

• Biomass & Waste to Energy



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Fabric filters are used for a broad range of industries including steel, non-ferrous metal, cement, power generation, chemicals, lumber and incineration plants. The choice of filter technology and filter media used depends on the composition and temperature of gas being cleaned and the properties of the dust particles being removed.





# **Bag Filter**

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Reverse Air Fabric Filter	<ul> <li>Suitable for large facilities</li> <li>Low air to cloth ratios</li> <li>Simple design with few moving parts</li> <li>Easy maintenance</li> <li>Compartment ventilation during maintenance</li> </ul>
Pulse Jet Fabric Filter	<ul> <li>Wide variety of applications</li> <li>Bags are kept on the clean side, eliminating the need for ventilation during maintenance</li> </ul>

- High air to cloth ratios
- 15m Long Bag test completed and 9.4m long bag in operation in Steel Plant

# **Cone Bag**

#### A filter bag designed to increase the filtration area and to equalize the air pressure dispersion during exhausting by forming one conical bag in the empty space in the middle of the cylindrical filter bag.

As a result, it is possible to reduce the number of filter bags required, reducing the required area of the facility.

- Reduction of investment cost by reducing the body size
- Reduction of maintenance cost and investment cost by reducing pulsing air amount due to structure of cone bag
- Reduce installation area by reducing body size
- Installation of the additional bag filter for existing bag filter casing, maximum volume increasing the capacity by more than 60%, ex)  $100m3/min \rightarrow 164m3/min$
- Improvement of filter area and clogging of existing BF without modification



Cone bag



Round bag



POSCO Gwangyang - 5 Coke

## **Pleated Bag Filter**

- Large filtration area
- Compact design
- than 1m / min.)



Pleated bag filter

# References

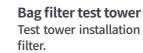
- (2014)

- POSCO Pohang PCI, Korea (2017)



Krakatau POSCO Sinter Plant

R&D



- Pulsing Valve Type
- Injector



Bag filter test tower



# Maximum dust collection efficiency

• Operation of compressed air pressure less than 4.0 kg/cm2(The filtration speed is less

• POSCO Gwangyang No.1~5 Flu Gas Cleaning Systems in Sinter Plant, Korea (2010) • Krakatau POSCO Sinter Plant No.1, Indonesia (2014) • Formosa Heavy Industries Corp., Hatinh Steel Plant Steel Making Plant No.6, Vietnam

 Asia Cement, Jecheon Plant, Korea (2015) • POSCO E&C CSP Steel Plant Coke Plant No.1, Brazil (2016) • POSCO Chemtech Gwangyang Lime Plant, Korea (2017) • POSCO Pohang Cast House, Korea (2017)

• Hyundai Steel No.1~3 Flu Gas Cleaning Systems in Sinter Plant, Korea (2020)



POSCO E&C CSP Steel Plant Coke Plant

# Test tower installation and operation for improvement and optimization of bag

• Filter Cloth Length, Type, Fabric Material

• Interval with Blow Tube and Tube Sheet • Pulse Jet Cleaning & Reverse Air Pulsing