rupraj

Air Pollution Control

www.rupraj.com

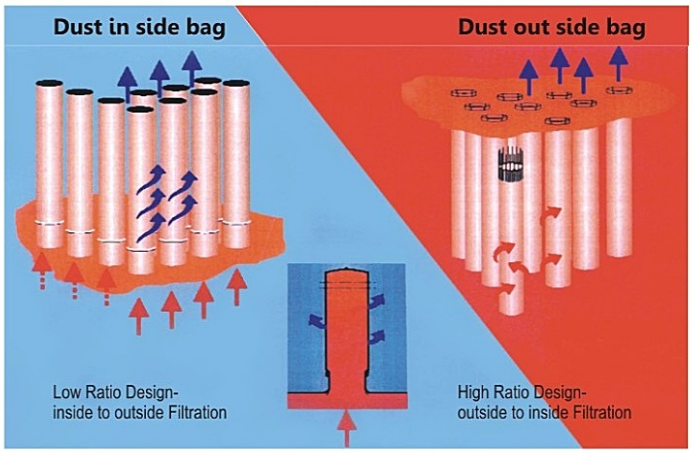
Bag Filters / Dust Collectors

Fabric Filter Principle

Fabric Filters are one of the most effective ways of removing particles from a wide variety of process gases. Particle laden gas is sieved through a specially designed textile media that collects the particles on one side of the fabric. Today there are different types of fabrics catering to various applications for temperatures up to 280°C, high concentration of acid and even abrasive dust.

When an amount of Dust/Particle has built upon the filter, air is sent through the fabric from the reverse side and the caked dust falls to hoppers below. Refer the figure below. For the later design, the soft & flexible bags are supported on the inside by a steel wire cage.

Design Concepts of Fabric Filters



High Ratio Fabric Filter

A Fabric Filter of High Ratio Design with a center inlet is widely accepted in industrial applications is around the world. The Filter has proven its capability of achieving low particulate emissions in a multitude of applications.

Features

- Lowest First Cost
- Woven and Felted Fabrics.
- Heavy Industrial Design for Reliability & Durability.
- Outside Collection.
- On/Off-Line Cleaning.
- Panel, Modular & More Compact Design due to Higher Filter Velocities.
- Pulse Air Cleaned.
- Bag & Cage Replacement from Clean Air side of the Unit.
- Filter Speed Up to 6.0 FPM

Low Ratio Fabric Filter

For Low ratio Fabric Filters, normally woven fabrics are used. The cleaning mechanism in low ratio filters is reverse air. Low ratio Filter bags do not require cages to prevent collapse of the bags during filtration, as the flow inflates the bags by flowing inside to outside. Rings are sewn on to the bags at regular intervals, to support the bags and prevent inward collapse during cleaning, which would stop flow of dust to the hopper during cleaning sequence.

Features

- Woven Fabrics
- Inside Collection
- Longer Bag life
- Low Maintenance
- Off-line Cleaning.
- Reverse Gas Cleaned
- Panel Design
- 1.5-2.5 FPM Filter Speed
- Bag length up to 36 ft.

Filter bag Cleaning Principle-Pulse-Jet Filter

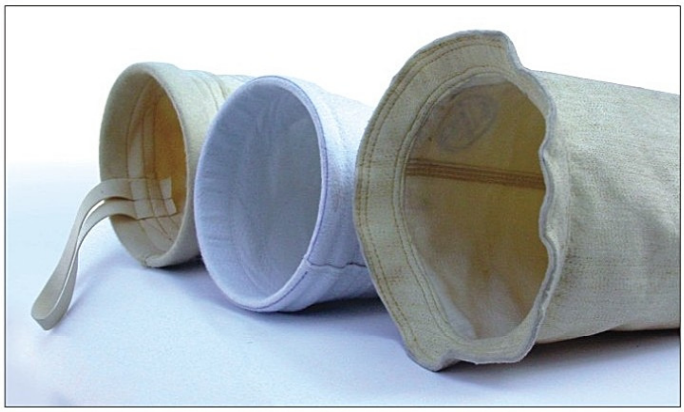
The Fabric bags are cleaned by means of compressed air pulse directed down through the bag's opening. The compressed air expands the bag with such a strong acceleration that dust particles on the outside of the bag are loosened when the bag later contracts. The bags are cleaned via a tube provided with nozzles. The distribution of air in short pulses is done by means of a membrane valve. The collected dust falls on hoppers located under the bags and is transported away by conveyor.

The heart of bag house is the filter bag hanging inside the casing. We select the most suitable filter media to craft out a filter bag based on our vast experience in the field & that of our technical associates. A general guide of filter media for various applications can be as under :

General Characteristics

Fiber (Generic Name)	Fiber (Trade Name)	Colour	Density g/cm3	Tenacity CN/TEX	Continuous Operating Temp° C	Max Short Duration Temp°C	Moisture Regain %
Polyester	Terylene	White	1.38	60	150	170	0.4
Polypropylene	Meraklon Danaklon	White	0.91	50	90	100	0.1
Polyamide	Nylon	White	1.14	60	110	120	4
Polyaramid	Nomex Conex	Cream	1.38	33	200	220	4
Acrylic (Homopolymer)	Dolanit Ricem	Cream	1.15	35	130	140	1
Acrylic (Co-polymer)	Orlon	Cream	1.15	20	120	130	1
Polyphenylene Sulphide	Fortron Procon	Light Brown	1.37	35	190	210	0.6
PTFE	Teflon Toyoflon Profilen	Dark Brown White	2.30	18	250	260	0
Co-Polymide	P84	Gold	1.41	25	240	260	3
Huyglas	Glass	Cream	2.1	20	270	300	0
Fibrous Basalt Rock	FBR	Bright Brown	2.1	20	300	400	0.2

Filter Bags, Bag Cages, Venturies, Controller



Filter Bags for All Bag House Designs

We offer complete range of filter bags made using different kinds of filter media for all designs namely, shaker, mechanical shaker, pulse jet and reverse air bag houses. Bag houses operating at ambient temperature to the high temperature, normal to corrosive environment, we work with our customers to engineer a felted or woven filter media best suited for the application.

Filter Bags for Hot Gas Filtration

We have come across customers who dreaded the high temprature filtration units due to faster rate of failure of high cost filter bags. Our experience shows that if properly selected, fabricated and operated the filter bags in hot gas filtration units can give better bag life. But the filter media selection along with sewing thread and construction is the key and one must depend on the experienced hands only. We supply filter bags, suitable to take rigors of hot gas filtration and corrosive environments.

Glass Bags for RABH

We supply filter bags using filter media from one of the best manufacturer of glass fiber filtration fabrics in the world, for various applications. Our bags are performing beyond customer expectations in chemical, cement, steel, utility boilers, carbon black and ferro alloy industries for last several years.

We use different finishes to enhance life and performance of filtration media. Selecting the right finish ensures fabric performance and durability.

It is known fact that the key to the optimum performance of the fiber glass filter bag lie in the application of the chemical finish to the fiber glass fabric prior to fabrication of the filter bags. Without a protective coating, the glass filament in filtration fabrics are broken through abrasion caused by dust particles or chemical attack from the gas stream cage contact.

WIRE CAGES

We offer cages for almost every pulse type collector on the market. We supply both Carbon steel and Galvanized Cages, as well as epoxy coated in 6 to 24 vertical wire arrangements. We have also supplied SS304, SS316 & SS316L cages for various corrosive environments.

The high speed welding line allow quick turn around on your order. We provide various designs of hardware to fit your top or bottom removal collectors.

Surface Finishes

Filter Bags are available with Application Specific finishes like :

- Antistatic treatment
- Water / liquid repellent finish
- Acid Resistant finish
- PTFE Coating

D Cap , Clamp, J Hook , Springs for RABH

We have improved J Hook & Spring Assemblies which outperform OE Designs. The Assemblies are available in GI, MS & SS Materials of Construction depending up on the applications.

PTFE Membrane Lamination

When an expanded PTFE membrane is laminated on a substrate the filtration is done by the membrane and the felt renders only mechanical strength and phenomenon is known as "Surface Filtration". Laminated felts have exceptional dust cake release, better chemical and thermal resistance, allows higher airflow and reduced pressure loss and can achieve near zero emission exceeding the strictest of the emission norms and complete product recovery.

Controller

Background

Rupraj Technical Services has been engaged in the area of Air Pollution Control since its inception. Headquartered in Ahmedabad, India, the Company has developed its product range through a dynamic process of diversified growth while always keeping at the back of its mind establishing the goodwill and deep rooted values of customer service & high quality of products & services.

The company has enhanced its technology base through several tie ups, to bring the latest developments in the area of Air Pollution Control & offer the same to its clients.

Infrastructure & capabilities

The company has a well equipped infrastructure of its own backed by state of the art manufacturing facilities & in house testing facilities of its principals and sub vendors. Our well trained and experienced technical team of engineers bring together several years of accumulated industry experience which enables us to offer custom made products and systems that are designed to exceed industry standards, at a very competitive price.

The company and its principals are engaged in the entire gamut of activities starting from site surveys, design, engineering , supply, installation, commissioning & after sales services to be able to deliver turnkey systems as per customer's requirements.

Several customers in power, steel, cement, chemical, ports, metal, etc. have benefited by the use of equipment supplied by us by way of improved plant environment leading to improved machinery performance, savings in operation & maintenance costs, reduced plant losses all of which provide an attractive payback justifying the investment decision .

During the Company's relatively short history, it has successfully catered to many industry sectors, added numerous reputed clients, & has become one of the leading players in the niche market in which it is operating. The journey shall continue.....

Here are some reasons why RUPRAJ is your best Air Pollution Solution provider:

- Technical tie up with world leaders - F. Harley / TRC / USA, Batliboi Env. Engg., GFF / Testori, Italy
- Complete Product Range
- Wide experience
- Large supply / installation reference
- Several repeat customers
- Back up support of principals
- Guaranteed timely deliveries
- One stop shop TURNKEY Solutions
- Proven performance of equipment supplied
- Flexible to meet customer requirements
- Easy spares availability
- Knowledge team of engineers
- Strict Quality control

What differentiates our company from our competition is the fact that we are the only company in India that offer complete range of Air Pollution Control Equipment & Systems under one roof and hence we are a one stop for your need of Air Pollution Control as we can offer the best techno-economic solution for any application.

Products & Services

Dust Collectors
Filter Bags
Bag Cages
Venturies
Sequential Controllers
Pulse Valves
Dust Suppression Systems
Nozzles
Sprinklers
Consultancy
Retrofit Solutions

Our Valued Clients

Rupraj Technical Services

303, Aatish Annexe, Nr. Samarpan Flats, Opp. K. P. Hostel, Gulbai Tekra, Ahmedabad-380 006, Gujarat, India
Phone : +91-79 - 2640 1052, 4002 1062, 63, 64 - Email : sales@rupraj.com, Website : www.rupraj.com